



NEWSLETTER

JULY 1987

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

EDITORIAL COMMITTEE: BOB HEATH
THERESA HEATH
ARNOLD STARK
LILLIAN STARK

NEWSLETTER MAIL ADDRESS: ARNOLD & LILLIAN STARK
6305 EUREKA SPRINGS RD.
TAMPA FL 33610

PRESIDENT: AL HENDRY CHAPTER MAIL ADDRESS: P.O. BOX 260363, TAMPA FL 33685
(including renewals)

MEETINGS ARE HELD THE 2nd SUNDAY OF EACH MONTH AT 2:00 p.m.

NEXT MEETING JULY 12, 1987

MEETING PLACE COMMUNITY ROOM UNDER WEST RAMP, TAMPA BAY
CENTER SHOPPING MALL, BUFFALO & HIMES AVES.,
NEXT TO TAMPA STADIUM. (TAKE DALE MABRY TO
BUFFALO AVE., AT STADIUM.)

PROGRAM DR. D. J. GRAY, AN HORTICULTURIST AT LEESBURG
AGRICULTURAL CENTER, WILL DISCUSS TISSUE
CULTURE WITH SPECIAL EMPHASIS ON ITS APPLICA-
TION TO THE DEVELOPMENT OF THE ORLANDO SEED-
LESS GRAPE AND OTHER IMPORTANT DEVELOPMENTS.
DR. GRAY IS AN EXCEPTIONALLY INTERESTING
SPEAKER WHICH SHOULD MAKE THIS ONE MEETING
WE SHOULD ALL TRY TO ATTEND.

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NEW MEMBERS: Henry & Rachel Bouley - 70 Pelican Dr. E., Oldsmar, FL 33557

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RARE FRUIT CONFERENCE:

Don't forget that the 5th Annual International Rare Fruit
Conference will be held Friday through Sunday, July 24-26, 1987,
at the Redlands Fruit and Spice Park in Homestead, in
conjunction with their annual Tropical Ag Fiesta. Registration
for the conference will be on Friday, 7/24, at 8:30 A.M. The
Fiesta will feature sales of fresh fruit and plants. If you are
planning to attend, sign up at our next meeting.

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FREEZE PROTECTORS:

Paul Rubenstein has approximately 150 used REESE Freeze
Protectors he would like to sell via our club. Except for some
of them being dirty, and their needing a diazinon recharge, they
are in good condition. They provide excellent protection for
young citrus and other fruit trees, and can be kept on year-
round. We will sell them at \$1.50 each (original cost \$2.50,
wholesale). Anyone who is interested, please let us know.

Hospitality Table:

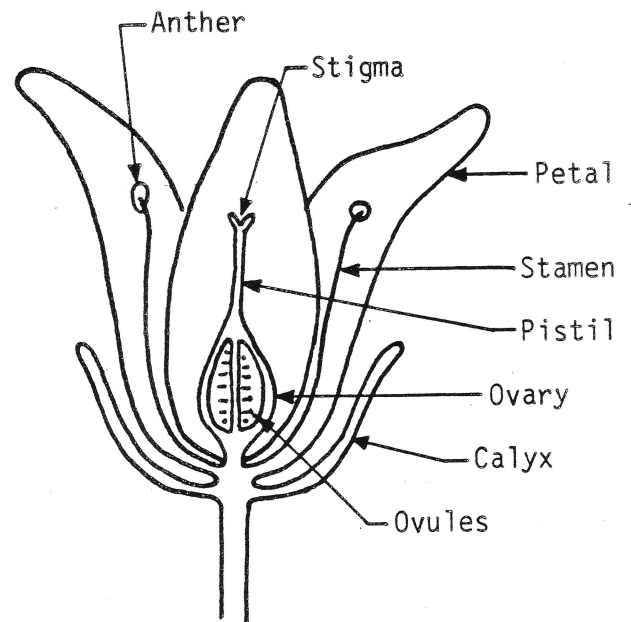
Bea Seekins - orange pecan bread & walnut brownies
Nels Gullerud - fresh peaches
J. Murrie - Plantation Sauce
Al Hendry - Surinam cherry jelly & crackers
Bob Heath - beverage

POLLINIZATION OF FLOWERS by Crofton Clift

Before reviewing his slides, Crofton Clift spent several minutes discussing the physical structure of flowers, methods of cross-pollinization, plant chromosomes, problems and successes of hybridization, and other functions related to the pollinization of flowers.

The principal parts of a flower are the calyx, the petals, the ovary, the pistil, the stamen, the anthers, and the stigma. (See illustration.)

The stamen is the male organ of the flower and the pistil is the female organ. In what is called the perfect flower, all these elements exist in the same flower at the same time. Some plant species produce perfect flowers on each individual tree and are self fertile, with the individual flowers able to fertilize themselves. Other species produce male & female flowers separately on the same plant. The corn plant is an example where the tassel contains the male organs and the ear silks, the female organs. Other species have separate male and female plants with male flowers on one tree and female flowers on another tree. An example of this is the papaya and, for fertilization, both male & female trees are required. Variations on the above theme are possible and exist in great number. The avocado is an example of a variation in that avocados have A & B types of flowers which function as follows: The A type flower opens the first morning as female, the stamen shed no pollen but the pistil is receptive to pollen. This flower closes at noon. This same flower re-opens the next afternoon as male. The B type flower opens as female the first afternoon and usually closes at night and re-opens as male the next morning. This means that flowers shedding pollen in the morning are B type while those shedding pollen in the afternoon are A type. This may be confusing to us but fortunately not to the avocado.



The calyx is the outer most part of the flower and what we see when we look at a bud. It protects organs within until the flower is ready to open. The calyx is normally divided into segments called sepals. The petals are the inner flower cup. Together the petals are called corolla. The petals are frequently brightly colored but rarely red in flowers pollinated by bees since most bees cannot see this part of the spectrum.

Night blooming flowers are usually white, odorous, large and bell shaped to appeal to the hawk moths. A flower that has both calyx and corolla is called a complete flower. One that lacks either calyx or corolla is incomplete. An example of this is the anona which has no petals or corolla. The stamens are the male organs. Nearly always the stamen consists of a filament or stalk which has at its tip the pollen sack or anther. The anther releases the pollen grains, the male reproductive element. The pistil, the innermost set of floral organs, is the seed bearing organ. Usually the individual pistil consists of the stigma which has a moist or sticky surface and receives the male pollen, the style, which is a tube that leads to the ovary, and the ovary itself. The ovary is at the base of the pistil and contains ovules which ripen into seed following pollination. Ovules are like the ova of animals and contain half of the chromosomes of the plant. Pollen grains, usually yellow, are spread to the stigma by the wind or the action of insects in search of the nectar which is found deep in the center of the flower. The pollen grains reach the stigma, a tube opens in the pistil leading to the ovary and each tiny pollen grain sends out a long tube which grows down until it finally reaches one of the ovules in the ovary. Then the seed producing material, the sperm, flows into the ovule to add the other half of the chromosomes needed to produce a complete seed.

Crofton discussed cross-pollinization of similar species and hybridization for producing superior fruit. Examples he used: the American Chinese chestnut cross and Dr. Dunstan's

work with muscadine and table grapes. The American chestnut was once a very familiar tree, an important component of the forest covering the Appalachian area from Maine to Ontario and south to Alabama. The trees grew to a height of over 100' providing annual showers of nutritious nuts in a hard wood that was greatly admired both for decorative interior trim and for heavy construction. But in 1904 a fungus infection was accidentally introduced from Asia which doomed the American chestnut. The fatal fungus disease spread rapidly through the forest and today virtually all the American chestnuts are gone. The long dead trunks, rich in tannin and exceedingly slow to deteriorate, are still being harvested for the wood and for the tannin for the tanning of leather. No other native tree has been found to supply tannin so reliably. The chestnuts which we find at Christmas time today are imported from Italy and other countries in the Mediterranean region. Their tree is equally susceptible to the fungus blight that came from Asia but has not yet been infected. Two species of Oriental chestnuts from China and Japan and the local chinquapin of the southeastern United States seem to be immune to the fungus. Fortunately, a few American chestnut trees in the United States appear to be immune to the fungus and are still living. These have been crossed with the Chinese chestnut to produce a hybrid that is larger than the American and the Oriental chestnut and equally as sweet as the American variety. This hybrid is now being propagated extensively.

The paw paw is a member of the anona family, the only one that produces a good edible fruit and is acclimated to the temperate zone. It is the largest native North American tree fruit and at this time has been virtually ignored by horticulturists. Crofton Clift feels it is time that an effort was made to better the local paw paw and suggests that it would be a fertile field for someone to work in. Dr. Dunstan is one of the horticulturists presently working with the American chestnut/Chinese chestnut cross and he is growing the F2 hybrid which is his most desirable selection of American/Chinese chestnut cross. The F1 cross is the first result of hybridization with the American and Chinese chestnut trees. The F2 is a cross between two F1's. It is frequently necessary to go to the F2 cross to get the desirable characteristics that you are searching for in making the cross originally. With an F1 cross you get an equal number of genes from each of the fruit species. The result is pretty well a combination of the characteristics of both plants. With an F2 cross, however, the characteristics may range anywhere from those of one species to those of the other in regard to each of the specific characteristics. It is at the F2 cross that most selections are made because of the great variability that is available. For instance, if you wish to get the large size of the American chestnut and the disease resistance of the Chinese chestnut you might plant 10,000 seeds and find exactly what you are looking for among the fruit of one tree. What was remarkable in Dr. Dunstan's case is that while he only planted a couple dozen plants to choose from and out of these few found what he was looking for. Of course Dr. Dunstan says he has God on his side and it seems to be true.

Crofton Clift next showed us some slides of flowers. The first flower was a perfect flower of a temperate fruit such as apples, pears, peaches, plums and most of our berries. They are basically alike in their flower parts. They are perfect flowers. They have male and female parts and to fertilize the flower you only need to touch the anther with your finger to get a little pollen on it and touch it to the sticky stigma to transfer the pollen to it, which in effect is what the honeybees do when they visit the flower. If you do this before the bees get to the flower and then pull off the petals and bag the flower you will know exactly what the parentage is for the seed that is produced. This is the procedure that was used in crossing the apricot with a plum to get the plumcot.

He showed us several more perfect flowers and pointed out the anther and the stigma on each one so we could see the procedure involved in hand pollinating for hybridization.

In the raspberry and the blackberry each little cell comes from a separate ovary. The flower is a bract of flowers with individual anthers and stigmas. All the little flowers have to be fertilized to produce a full blackberry. If you've seen blackberries with just two or three cells it's because only these were fertilized

and all the rest of the flowers were not. The same thing happens with anonas but in that case you get lopsided fruit. In trying to cross blackberries and raspberries you have a problem. Blackberries have a central core to which all the cells are attached but the raspberry is hollow without a central core so with the hybrid the corelessness is dominant and when you try to pick the fruit you get a handful of little cells.

We looked at many other perfect flowers and Crofton pointed out on each one the stigma and the stamen. We looked at flowers of rose, banana, peanut, persimmon, mulberry, pineapple, guava and many others.

Crofton's final message to us was to get out there and hybridize, cross things, experiment and let's see what we can come up with.

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JUNE PLANT RAFFLE

PLANT	DONOR	WINNER

Papaya fruit (2)	Bob Duke	Linda Lee
Papaya fruit (2)	Bob Duke	Bob Heath
Papaya fruit (2)	Bob Duke	Walter Vines
Papaya fruit (2)	Bob Duke	Al Roberts
1/2 pint Mango relish	J. Murrie	Janet Conard
Papaya	RFCI	Glen Myrie
yellow Guava	RFCI	Nels Gullerud
Malanga	RFCI	Bob Duke
Dixie Grape	Harry Klaus	Bill Ryland
Cowart Grape	Harry Klaus	Nels Gullerud
Sugar Apple	Harry Klaus	Nels Gullerud
Sugar Apple	Harry Klaus	Robert Eliason
Sugar Apple	Harry Klaus	Harold Seekins
Carambola	Harry Klaus	Al Hendry
Carambola	Harry Klaus	Pat Duke
Carambola	Harry Klaus	Nels Gullerud
Bignay	Bob Heath	Pat Duke
Guava	Herb Hill	Walter Vines
Sugar Apple	Bob Heath	Al Roberts
Lychee	RFCI	Nels Gullerud
Tobacco	Al Hendry	Robert Eliason
Cashew	Al Hendry	Bill Ryland
Papaya	Nels Gullerud	J. Murrie
Stover Grape	RFCI	J. Murrie
Spanish Red Pineapple	Stark	Bea Seekins
Lady Finger Banana	RFCI	Bob Heath
Spearmint	Leland Terrell	Stark

ONE MEMBER'S NEED

Harold Seekins has an extensive wood sample collection consisting of small sections of polished wood, labeled and mounted. While extensive, his collection still has several voids. One is lemon wood. He needs a piece of unspalted lemon wood (no blue stain) at least 4" in diameter and 30" long, or the equivalent in straight 7-1/2" long pieces.

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RECIPES OF THE MONTH

Orange-Pecan Bread by Bea Seekins:

Cream together $\frac{3}{4}$ cup sugar and $\frac{1}{4}$ cup butter; beat in two large eggs; add and mix in two tsp grated orange peel, 2 cups flour, 2- $\frac{1}{2}$ tsp baking powder, $\frac{3}{4}$ cup orange juice, and $\frac{3}{4}$ cup coarsely chopped pecans; spoon into buttered loaf pan; bake at 350 for 35 minutes.

Plantation Sauce by J. Murrie:

In a pan, melt 3 Tbs. butter, and saute 3 Tbs. chopped pecans; add 3 Tbs. brown sugar, and stir 2 minutes; add 1 diced mango and 1 diced papaya and mash; add 1 cup water and bring to a boil; add $\frac{1}{2}$ oz. rum and simmer 15 minutes; serve with poultry, game or alligator.

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Benefits of Pesticides

We hear much today about the very real dangers posed by the indiscriminate use of pesticides. Lewis Maxwell would like us to remember that there is also the flip side of the coin, that pesticides have also reaped us many benefits.

Here are his comments:

Paracelsus, a Swiss physician in 1567 wrote, "What is it that is not poison? All things are poison and nothing is without poison. It is the dose only that makes a thing not a poison."

There are some chemicals that are very toxic acutely, but chronically, that is in very small amounts, are not toxic but may even be essential to life.

For example, vitamin D is highly toxic acutely with an oral LD₅₀ of about 10 mg/kg which is the same for the insecticide Parathion.

If vitamin D were not exempted from the Hazardous Substances Labeling Acts by virtue of its being a food or a drug, it would be required to carry a poison label. This is something to remember the next time you hear a scare story about pesticides and their dangers.

It is interesting that in the 50 or so years of man's use of pesticides his life span has increased from 50 years to 74 years.

Human ecologists accredited three major factors to this extra life span. They are: 1) Sanitation, 2) Insecticides, and 3) Drugs. (Source Colorado State University)

The National Academy of Science reports: withdrawal of insecticides would result in a 30% reduction of crop yields, 50 to 75% increase in the price of farm products, and the complete elimination of farm exports.

Instead of the 17% of our income that we now spend on food, we would have to spend at least 30-40% of our income on this same food.

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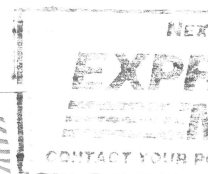
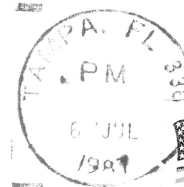
THE MALTESE KUMQUAT

It was a berry hot day and I had just leafed my orchard, when I espaliered her sitting in the shade of an old apple tree. She said her name was Anna but I knew she lied. It was really Annona. As I grew closer, the scent of fertilizer filled the air. Nectar dripped from her ruby lips as she asked me my name. "Sam Spondias," I replied, "the famous Satsuma wrestler and part time private eye." "I was looking for Mike Hamlin or Thomas Mango, but I guess I'll seedle for you," she said tendrilly. I stood rooted to the spot entwined by her beauty. She continued, "I'm being chased by Fu Manchu." "Gesundheit," I responded. "No! No! Please be cereus. I mean the infamous Chinese Jujube who wants to steal my Mamey's Golden Kumquat. But I have covered it with carob and hidden it in this box of Malta milk balls. Gourd this with your life," she said baelfully, and bananished into the shadows.

It was a quarter passiflora and time to return to my office. The telepome was ringing as I arrived. I handed the box to my secretary Eugenia, longan to answer the pome. It was an agent petaling prunus shears. I cut the conservation short but it was too late. "Thank you for the candy," Eugenia said, "I'm loquat about Malta milk balls." Oh, Garcinia, the box was empty, that wackydamia had eaten the hull thing. What morus could applen? Oh well, there's always Tomorind.

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Tampa Bay Chapter RFCI
P O Box 260363
Tampa FL 33685



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