□ POMONA □

The Member-Written, Quarterly Journal of
North American Fruit Explorers (NAFEX)

Vol. XL No. 2 Spring 2007

2007 Annual NAFEX Meeting

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The 2007 Annual NAFEX meeting will be held in Clemson, South Carolina, on August 22-24. Our host is Greg Reighard, who is Professor of Horticulture, Fruit Tree Culture and Genetics. Greg has already organized an outstanding group of speakers and has planned several interesting fruit tours and tastings in the area. We can accommodate and welcome additional speakers, and if any members wish to present a topic, or have suggestions as to a useful subject to include, please contact either Greg (grghrd@clemson.edu (864) 656-4962) directly, or myself (natelson@pipeline.com).

The designated motel is the Ramada Inn Clemson, Highway 76 &123, Clemson, SC 29633, (864) 654-7501. We have reserved a block of rooms there, and there are several other motels nearby. The guaranteed rate is $64.00/day with a complementary breakfast. The lectures and our banquet will be held in the conference room at that location. Our contact person at the motel is Sandra Hunnecutt at 864-633-1100. The actual lecture schedule, and registration form will appear in the next edition of *Pomona* and also will be posted on the NAFEX website. Please plan to attend.

Notes from Penn's Acres

Robins flit amidst the snow, and spring is just around the corner. For the first time in my ten years as editor-in-chief of *Pomona,* I received a little more material than I could fit into the 81 allotted pages. Consequently, this is the extent of my essay, to make room for as much

fruit-growing information as possible. I tried to use the earliest-sent articles first, as space allowed, keeping seasonality in mind; any articles not appearing in this issue will be used first in the summer issue.

Thank you, thank you for such diligence. Enjoy every word, and have a wonderful, fruitful spring! –J.A. Kuehn

POME FRUITS

Antique Apples: A Second Opinion

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Over the past several years Ed Fackler has made clear his negative experience with antique apples. Members of NAFEX, including me, value Ed's advice, but there is a different side to antique apples which also needs to be expressed.

Fifteen years ago, I compiled a notebook for the NAFEX library containing all *Pomona* articles about apples from 1968-1988. It is a thick notebook, and many of the articles are about antique apples. Members were delighted to share with NAFEX friends their rediscovery or growing experience of rare old apple varieties and the stories that often accompanied these apples. Scions of the apples were swapped through the mail. I suppose all these articles on antique apples by NAFEX members can be dismissed now as "sheer verbiage" but they were an important part of NAFEX and *Pomona* magazine for years.

The reality now is that *Pomona* goes years without anyone writing a positive word about the old varieties. For whatever reason, the people who are interested in antique apples are no longer in NAFEX or are silent. I know they are out there, because at least ten nurseries specialize in antique apple varieties, and my wife and I sold over 30,000 antique apple trees when we operated our small nursery.

If you own a 1792 Kentucky long rifle, should you discard it because it is not as accurate as an M16? If you have lovingly restored a 1928 Pierce Arrow automobile, should you junk it because it does not go as fast as a new Lexus? Collectors of old guns and old cars have their own periodicals and their own conventions. They take pride in their efforts and, so too, should those of us who track down and collect old apple varieties.

These old apples are as much a part of our American heritage as Kentucky rifles and Pierce Arrow cars. No one, in or out of NAFEX, should ever be criticized for collecting and writing about antique apples. To each his own!

It does not matter if you plant tree number one million of **GoldRush** or **Sweet Sixteen** or tree number two of **Lacy** or **Rockingham Red.** The planting of an apple tree is a victory for the person doing so and a potential victory for NAFEX.

The tracking down of antique apples is fruit exploring in the pure sense. How else can you discuss an old apple with a man who is skinning a muskrat? Looking for old apples led me to an elderly man still using a steam tractor to pull logs out of the woods. While walking in an old orchard I came face to face with two of the biggest hogs I have ever seen. When asked about their enormous bulk, the owner showed me his pickup truck filled with stale doughnuts from a nearby bakery. I met a 96-year-old woman whose father fought in the Civil War!! Each of these encounters led to an antique apple variety and enriched my personal life. Every time I eat a **Sweet Rustycoat** or a **Smith's Seedling**, I remember the day and circumstances when I found it.

There are many reasons <u>not</u> to plant antique apples. They are not repositories of unique genes. As Ed Fackler found, they will not compete with commercial apples in the market place except for niche markets such as Farmer's Markets. As a group, they are not more disease- or insect-resistant than modern apples (and less so than several modern apple varieties).

On the other hand, there are perfectly good reasons why NAFEX members might wish to plant antique apples. They spread out the apple season (apples ripen from June to November here in North Carolina). The differences in tastes, acidities and textures means the grower can select the perfect apples for apple pie, frying, apple butter, sauce, drying, cider, etc. In Zones 7 and 8, many southern antique apple varieties withstand hot summers better than modern varieties developed for Zones 5 and 6. Antique apples are part of our agrarian heritage. Growing them saves part of our heritage and gives a good apple to eat or cook at the same time.

The message is simple: Do some research, decide what fills your needs and plant apple trees—antique or modern. Then tell NAFEX about it!!

Old Ohio Apples

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Some fifteen years ago I received a letter from a man named Blake Gerber containing a two-page list of old apple varieties which originated in Ohio. The Ohio Department of Agriculture was searching for these apple varieties to plant in a proposed Ohio Heritage Orchard at the Reynoldsburg agricultural facility. I answered the letter and filed the list.

Recently, in corresponding with a man researching early Ohio nurseries, the list resurfaced from my files. I managed to contact Mr. Gerber (who is now quite elderly) and found that the Ohio Heritage Orchard project never happened due to changes in the top management level of the Ohio Department of Agriculture.

Someone did a lot of research to compile the list of Ohio apples, and it would be a good starting point for a person seeking to find surviving varieties. Of course the list is just names, so some research is necessary to flesh out the bare names with information on when, where and how these apples originated, which nurseries sold them, and if and when they were commercially available. A good start for this information would be the following resources:

1. American Pomology: Apples (1867) by John Warder of Cincinnati, Ohio
2. The Fruits and Fruit Trees of America (1895 or 1900) by A. J. Downing
3. The American Fruit Culturist (1875 or 1897) by John Thomas
4. Official Reports and bulletins of the Ohio Department of Agriculture, and the Ohio Agricultural Experimental Station from about 1875-1920.

The first three books above are in the NAFEX library and the publications listed in 4 above should be in the Ohio State University library. This library also certainly contains catalogs of old Ohio nurseries.

Researching old Ohio apple varieties and finding the surviving trees are two different things. Here are some tried and true methods of finding old trees:

1. Write letters to the editors of newspapers serving rural populations. Explain that Ohio is losing its apple heritage and ask that readers contact you if they have old apple trees of known variety.

2. Rural electric cooperatives provide electricity to rural communities and isolated farms. They usually send customers a free monthly magazine. Write an article for the magazine about old Ohio apples and solicit information from readers.

3. Many small towns have fall festivals or street fairs. Set up a booth highlighting missing Ohio apples and ask for help in locating old varieties.

4. Get in your car and drive back roads looking for old apple trees beside farm houses, standing in pastures or behind the barn. Knock on the door and ask about the trees. Also ask if any neighbors or relatives have old apple trees.

5. Does the Ohio Department of Agriculture publish a monthly periodical listing farm equipment for sale? If so, write an article about the missing apples.

6. Contact county agricultural extension agents and ask their help in locating old apple varieties.

My dictionary says that over ten million people live in Ohio. Surely at least one person out of ten million can make the effort to save what remains of Ohio's apple heritage.

I will start the ball rolling with **Mean's Seedling,** an old Ohio apple I found many years ago in a collection of apple varieties in Dunnville, Kentucky. A quick reading of the following list suggests that at least fifteen of these old Ohio apple varieties still exist.

LIST OF APPLES OF OHIO ORIGIN

Alerson's Early
Ashland
August
Aunt Anna or Ann
Badger's Bellflower
Bassett Sweet
Beards Seedling
Belmont
Bethlehemite
Big Bronze
Black Annette
Black Jack
Bleckensdoerfer
Bowback Sweet

Brilliant
Broadwell
Bronson Sweet
Brown's Superior
Buchannan's Pippin
Bush's Beauty
Bushnell
Butter Sweet
Campbell
Carey's Pippin
Carnahan's Favorite
Carpenter's No. 1
Cattel
Celestia
Challenge
Chillicothe
Chillicothe Redstreak
Clermont
Close Set (Lindsley)
Conant's Red
Cope's Red Sweet
Cope's Sweet
Cornfield
Cracking
Cranberry Russet
Crawford's Keeper
Creighton
Crib
Crispy
Crow's Nest
Culp
Dana
Dana's Striped Sweet
Darlington (Russet)
Davis Sweet
Dawsons Cluster
December
Defiance
Delawine
Delight
Democrat
Dickey
Dillaway's
Dillingham
Dole's Red
Downingland
Duling
Dunlevy
Early Sweet
Elder
Ernst Sweet
Ensee
Fahnestock
Fairmount
Fall Vandervere
Federal
Fink
Flat Pippin
Flory
Forange
Forest Sweet
Fort Massie
Fort Meigs
Fort Miami
Foster
Fountain Hill
Fox Apple
Franklin
French Pippin
Gallup's Russet
Garden
Gatch (Thomas)
George
Gillett's Profusion

Gillett's Sweet Bellflower
Gillett's Winesap
Glendale
Golden
Good Russet
Goff
Gov. Morrow
Greenville
Green Winter
Griffith
Halleck's Favorite
Hampton Bellflower
Hampton's Fall Sweet
Hampton's Honey Sweet
Hampton's Late Sweet
Hampton's Red Winter Sweet
Hampton's Russet
Hanlon
Hannah
Hart Sweet
Hayboys
Helen's Favorite
Higby Sweet (Lady Cheek Sweet, Lady's Blush)
Hoadley
Holdren's Early Red
Holiday
Holland's Red Winter
Holly
Honey Sweet
Hoopbole
Hooper
Hooples Aantique Gold
Horse (of Petticolas)
Horton Sweet
Hunt Winter
Hunter's Sweet
Jacksonian
Jarminite
Jennings Sweet
Jersey King
Johnson's Sweet
July
June Wealthy
Keepwell
Keiser
King Ida
Kinkhead
Kirtland
Kitchen
Kitchmore
Lady's White
Lake
Lancaster Sweet
Laurence
Leming Sweet
Liberty
Limber Limb
Linsley's Favorite
Linsley's Sweet
Linnville
Lipseys Russet
Little Pearmain
London Sweet
(Heicke's Winter Sweet)
Long Limb
Longworth Sweet
Lopside
Lowre Queen
Madam Lewis
Marshall's Sweet Favorite
May Queen
March's Red Winter

Marshall's Sweet
Martin
McAdow's June
McCormack
McDaniel\McHenry
McHenry's White
Mean's Seedling
Mear's Sweet
Melormacks
Melrose
Miami
Michenor's Red Sweet
Millikens Sweet
Mingo
Missing Link
Molasses
Monroe
Moore's Extra
Moore's Seedling
Morris Red
Morton('s Seedling)
Mote Seedling
Mote's Sweet
Mt. Gilead
Mt. Pleasant Sweet
Mozlex
Mullett
Muskingum Keeper
Neisley
Newman
Noble
Oats Harvest
Ohio Favorite
Ohio Nonpariel
Ohio Pippen
Ohio Red Streak
Onstine Greening
Opalescent
Orange Sweet
Orndorf
Oviatt
Park Sweeting
Patton Sweet
Perry
Phillips Sweet
Pie
Piketon Russet
Pine Apple
Pinkham
Pink Sugar
Poppy Quamp
Powers (Miller's Apple)
Premium
Prolific Beauty
Putnam Keeper
Putnam Sweet
Quaker Harvest
Randall's Best
Red Cedar
Red Seedling
Red Sweet
Red Sweet Spice
Richmond
Richmond 1
Richmond 4
Richmond 5
Richmond 6
Richmond Red
Roberts
Robinson's Stripe
Rock
Rock Pippin
Rockport Sweet
Rolen's Keeper

Rome Beauty
Royal Pearmain
Ruby
Scarlet Queen
Scarlet Sweet
Scarlet Nonpariel
Sioto Beauty
Scioto
Seaver
Seever‘s (Red Streak)
Selma
Sheepnose (Ohio)
Silger’s Pound
Silger Red
Siglus
Sleathe’s Ivory
Smith Favorite
Smith Seedling
Spafford Russet
Spice
Spice Pippin
Spice Russet
Springer’s Seedling
Somerton Sweet
Sour Rambo
Stark
Stewart Nonpariel
Stillwater’s Sweet
(Grandmother Gan)
Stockdale Sweet
Stock Sweet
Stone’s Sweet
Story
Striped Ashmore
Striped Bellflower
Striped Sweet
Stewart’s Golden
Sugar and Water
Summer Seek-no-Further
Swasey
Sweet Gate
Sweet Pearmain
Sweet Sponge
Sweet Wine
Sweet Winter Pennock
Tart Bough
Taylor Red
Transparent Zoar
Trenton Early
Trenton Pippin
Trovinger
Trumbells Sweet
Turner
Twisty
Uncle Archy
Union
Upp
Van Horn
Vincent Sweet
Volunteer
Ward
Warder
Weaver’s Sweet
Western Beauty
Western Spy
Wheeler’s Sweet
Whinery
White Baldwin
White Beauty
Whitewater Sweet
Willow Leaf
Winchell Seedling
Winter Baldwin
Winter Green

Witch
Woodring
Woodside Cider
Yankee Russet
Yellow Foster
Yellow Vandervere
Zoar Greening

Requiem for an Apple Book

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The University of Tennessee Press tells me that *Old Southern Apples* is sold out. The book has been in print for eleven years, selling 9,000 copies of both hard and soft covers. This means the public has spent close to half a million dollars for it.

Old Southern Apples had its genesis through a NAFEX friend. By the mid-1980s I had tracked down over a hundred old southern apple varieties, and I was discussing them by mail with NAFEX member James Taylor of Ruther Glen, Virginia. He sent me some notes about one of the apples from an old nursery catalog in the University of Virginia library. This kind act made me aware that there were old catalogs and other materials that would shed light on the apples I was finding, such as how, when and where they originated. My wife and I began making trips to southern universities, searching their stacks and copying anything useful.

In 1989, just as we had exhausted nearby library sources, I heard of the National Agricultural Library (NAL) in Beltsville, Maryland. This fourteen-story building is an incredible resource. One entire floor holds rare books and includes 100,000 old American seed and nursery catalogs beginning in the late 1700s. Searching through these we found and copied 268 old southern nursery catalogs with descriptions of apple varieties.

Subsequent three and four day trips to the NAL led us to horticultural magazines dating back as early as 1848, which often had articles about apple varieties. The NAL also had all of the proceedings of the American Pomological Society beginning in the 1840s as well as bulletins of agricultural experiment stations and agricultural colleges from the late 1800s and early 1900s. All of these provided information about antique southern apple varieties.

From 1886 to 1930, the US Department of Agriculture had a Division of Pomology. In 1888 alone, this division received over 10,000 fruits from the public for identification! To help in identification, staff artists were hired to paint accurate pictures of the fruits, and by 1930 over 7,000 paintings had been made of American fruits and nuts (including 3000 apple paintings). I hired a local commercial photographer, drove us to Beltsville, and in two days he photographed for me forty-eight paintings of old southern apple varieties. These pictures eventually graced our book.

As Edith and I were finishing up at the NAL, a worker casually mentioned some old files from the long defunct Division of Pomology stored in the subbasement. A search turned up card catalog files filled with thousands of 3x5 cards, some typed, some handwritten. These cards summarized the result of a twelve-year effort by the Division of Pomology, beginning in 1892, to discover the origins of American apple varieties. They were (and still are as I hope they have not been discarded) a priceless gold mine of information about old apples, and Edith and I copied hundreds of the cards that shed light on southern apple varieties.

In 1992, after six years of research, my wife and I realized that we had compiled enough unique information about old southern apples to fill a book. For two years I wrote in longhand on legal pads. My wife put all the words into her computer, and six or seven revisions took place one after the other. The book evolved into three sections. The first section is a thirty-five-page narrative about apples in the South from the early 1600s to 1928, including how they originated, cultivation practices and uses of apples by southerners. The next section of 120 pages gives the history and description of over four hundred old southern apple varieties which still exist. The last section of 136 pages describes about twelve hundred southern apples varieties thought to be extinct. (Over fifty of these have been rediscovered since the book was published and more are found each year.)

We sent a draft of the book to a small publishing company in Virginia and they immediately accepted it. Many decisions were made as to typeface, book size, paper, cover design and color pictures. Not a single change was required to the 230,000 words in the draft, largely a testament to my wife's careful editing.

Publication was scheduled for mid-1995 but was held up for four months. The color pictures were being reproduced in Kobe, Japan, and the

printing plant there was damaged in a severe earthquake. Finally, in December 1995, Edith and I received our first published copies *Old Southern Apples*. What a wonderful day it was, a milestone in our lives!

Seven years ago, the rights to our book were acquired by the University of Tennessee Press, and they have kept it in their catalogs ever since.

As the last copies are sold, Edith and I look back on this episode of our lives with pride. In a modest way, *Old Southern Apples* does for the south what *Apples of New York* (1905) did for northern apples. A happy and unforeseen result is that the book galvanized a dedicated group of southern apple hunters who still work to track down the missing old southern apples. The south has now done far more than any other section of the United States to find and preserve its apple heritage.

Cedar Apple Rust

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Perhaps I am just a devil's advocate or else I just don't understand all the fuss about cedar apple rust. I live on Salt Spring Island, BC, in the Pacific Northwest, where we get very dry summers and very wet winters. Normal rainfall is around 36", but 2006 delivered 51" of rain. This is the home of the western red cedar. Not only does cedar live here, it thrives here.

My 2.5 acres of apple trees (about 350 trees) are surrounded on two sides by a seasonal wetland, with a small creek flowing through it from November until May. The wetland hosts lots of western red cedar ranging in size from 18" – 36" at the butt. One other side has alder and the fourth side has a mixture of alder and cedar.

To my knowledge, I have never had any trouble with cedar apple rust. Perhaps the organic growing methods I use help avoid this problem. With organic growing, there is a real emphasis on growing healthy trees, by getting lots of nutrients, organics and minerals into the soil. Perhaps our rather mild climate helps. Maybe I am just lucky.

As a unique experiment, which is one of the facets of our certified organic operation, near our house, I have a cedar that is 36" in diameter. Because I am an incurable appleholic, I have planted apple trees in every available location, including four apple trees growing around this big tree. The four trees are only young and each apple trunk is roughly 14' from the cedar trunk. The major problem here is not cedar apple rust, but root competition.

My trees are very healthy, with our biggest challenge being canker on some trees and scab on some apples. Those problems I can easily live with. Canker seems to become worst on five year old trees, paradoxically just at the time they give their first fruit. This year I have removed about five young apple trees, but will replant the same variety and usually the new tree succeeds in getting past this five year "susceptible stage." I have no answers, but like most growers, am just trying things and seeing what works. When something does work, there are so many factors involved that it is often difficult to isolate any one fact leading to the success. The synergistic effect of additional factors is very difficult to gauge. Most of us have enough trouble trying to understand one variable.

As a side note, oyster shell seems to work very well to reduce bitter pit and watercore, which is blamed on lack of calcium. I get a half-ton truckload a year and spread it throughout the orchard just on top of the soil. It is uncrushed. Not only is oyster shell supplying calcium, but also many other minerals. It seems to have done a remarkable job of correcting the conditions. The extra dry summers have made the problem of bitter pit and watercore worse than normal also.

Apple Luscious Organic Orchard Newsletter 2006

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We had no time to get bored this year. Wow, were we busy, but it was a great year!

- By mid-April, sold out of all one-year old apple trees from our nursery.

- Survived a very wet winter and one of the driest summers on record.
- Organized a very successful 8th Annual Salt Spring Apple Festival with 800 happy apple lovers roaming the island in an apple trance.
- Sold out of apples by early December.
- Attempting to get some water storage (above ground tanks) in place for 2007.
- Best of all, had many happy customers delighted at all the apple varieties we exposed them to.

Highlights included

- Tasting some of our new apple varieties for the first time and being delighted. These include Almata, Blushing Golden, Braeburn, Chehalis, Cox Queen, Etter's Gold, Freyberg, Geneva 163, Hudson's Golden Gem, Kestrel, Malling's Kent, Mott's Pink, Mutsu, Nova, Sansa, Sinta, Summerland Red Mac, Sweet Sixteen, Wickson Crab and Winekist. Proven favourites include Gravenstein, Melrose, Honey Crisp, Orenco, Sandow, Northern Spy, Spigold and Karamijn de Sonnaville.
- Markets are always very enjoyable as we always give tasting of all varieties for sale. Taste is what sells apples, especially some of the uglier looking varieties. The great feedback we get from customers is one of the best incentives to keep working hard in the orchard and to keep growing organically.
- At Apple Festival 2006, we offered 127 varieties for tasting.
- As the main organizer of the Apple Festival, we were delighted to see about 800 happy apple lovers roaming the island on the day of the festival. They had attained APPLE BLISS.
- The apple collection at Fulford Hall for Apple Festival 2006 displayed 296 varieties of apples all organically grown on Salt Spring Island. The collection was sold and the money raised from the collection was returned to the growers who worked so hard to get that incredible collection together.
- After surviving one of the driest summers on record, we are going to have some water storage (above ground tanks) in place by next year. We had record rainfalls in the winter. Just no happy medium. Our precipitation is all or nothing.

- We had two different ladies over 85 years old buy apple trees this year. That is the best example of OPTIMISM I have ever seen, since these trees will take another four years to produce apple.
- Having tree frogs appear in many places throughout the orchard. On the left in hydrangeas and on the right on the top edge of a plastic rain barrel. This frog spent a few months in our rain barrel during the driest part of the summer. These are our mascots and their presence is a good omen in the orchard.
- We eat very well at Apple Luscious, growing as much of our own food as possible. It was last year that *Harrowsmith Magazine* said quite bluntly that it was next to impossible to grow apples organically. What utter nonsense! I don't think they ever asked any organic growers about that.
- Our red-fleshed apple become more amazing each year as the trees get more established. Apple Festival 2008 (our 10th) will be celebrating red-fleshed apple varieties.
- I always note which apple varieties are most eaten by birds, since I believe they are drawn to the best tasting varieties. This year the birds voted (by eating) the following: **Cox Orange, Northern Spy, Red Flesh, Karamijn de Sonnaville** and **Grenadine.** Those are all great tasting apples. I do rely more though on three neighbourhood daughters as my main taste testers. Deb and I also rate each apple out of 20 for taste. We do not keep any apple variety getting less than 15 for taste.
- During early September we had wasps build a huge nest about eye level in one of our **Red Gravenstein** trees, and so at picking time, we picked all the **Red Gravenstein** within 10' of the nest, but left the rest for posterity.
- One interesting note: as an example of the old apple trees existing on Salt Spring, at our local Christmas craft show, I acquired an apple bowl that is 13.5 inches in diameter from a local turner. Not only was this solid apple wood all the way through, this apple tree would have had to be about 18" in diameter before going into the lathe. Now there is an old apple tree. Most apple trees on Salt Spring voluntarily subscribe to the Bowl Donation Program, where when they die, their remains may be used by any local wood turner

in order that they may still be of use after they die, very similar to the Organ Donation Program that humans have.

Best time to visit Apple Luscious
Roses – June
Plums – August and September
Apples – August to November
Blossom time – April
Orchard Tour - Anytime

Enjoy 2007

Quickspitters

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It is too easy to bite into an apple, chew for a moment and spit out the flesh, consigning the apple to the trash heap of history as a "quickspitter". In other words, a quickspitter is an apple that does not measure up as an apple for fresh eating out of hand.

There is more than one reason for a quickspitter. The apple may be under-ripe or over-ripe. I know from apple tastings I have organized that a superior apple that has missed the ripeness window will fare poorly against an inferior apple that is perfectly ripe. The flavorless, gummy flesh of an under-ripe apple is a turn off as is the grainy, overblown fruitiness of an over-ripe apple. The great advantage of growing your own apples is to have perfectly ripe fruit for five or six months of the year.

Quickspitters often are the result of trying to force a square peg into a round hole. Many apples, particularly many of the antique apples, were never meant to be eaten fresh and to try to do so is inappropriate. In talking to elderly southerners and in researching my book, it is obvious that only roughly ten percent of the apples from farm orchards in the 1800s and early 1900s were meant to be eaten fresh. After all, even large farm families could not eat fresh the thousands of pounds of apples from a typical farm orchard of forty large apple trees.

Most of the apple trees on southern farms were grown not for fresh eating but for other specific purposes. Farm wives knew and grew the best

apples for saucing, for apple preserves and apple butter, for cider (and cider vinegar), for drying and for daily meals such as fried apples, stewed apples, baked apples and apple pies. Many times I have heard from an elderly man or woman something like "never a day went by that we didn't have apples in some shape or form on the table to eat."

In my own orchard of about 450 old southern apple varieties, I have many apples poorly suited to fresh eating—quickspitters, many call them. These apples Edith and I value for other qualities and our neighbors do too. **Early Strawberry** makes superior applesauce, often with **Transparents** added to it (but **Transparents** are oh so susceptible to fireblight). We throw into the pot some unpeeled **Red Junes** if we want pink sauce.

The big green (sometimes with a blush) **Horse** apples are the best for drying, being acidic and of coarse texture and ripening in the heat of August.

Summer Orange apples are ripe the same time as **Horse** apples, but their flavor, medium acidity and slightly dry texture make them the best for apple pies. I sometimes put a dozen different varieties into each of Edith's apple pies, but each apple must pass the taste test for suitability for pies.

When the **Aunt Rachel** apples ripen in July, I know that I am in for a taste treat, and I stand in the orchard eating apples right off the tree. As good as **Aunt Rachel** is, I know that later apples such as **Red Royal Limbertwig, Blue Ridge King** and **Sulser Red** will be even better for fresh eating.

In October, I load up the old refrigerator in my workshop with **Graggs, Blacktwigs, Red Limbertwigs, Ingrams** and **Keener Seedlings.** In plastic bags, the apples keep until late winter and just get better with refrigeration.

And so it goes. Edith and I can find a good use for the quickspitters for crock pot apple butter, spiced apple rings, chutney, preserves, frying for breakfast, apple-raspberry jelly, apple relish, canned apples and on and on. What may be a quickspitter to some is a prized special purpose apple to us, as it was for Americans for hundreds of years.

Southern Heritage Apple Orchard at Horne Creek Farm

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The sudden death of Henry Morton in Gatlinburg, Tennessee, ten years ago was a double tragedy. His family and friends suffered a loss, and those of us who search for old apple varieties lost his unique collection of Appalachian mountain apples which Henry had found over many years of searching mountain coves and hollows. This loss brought home to me the temporary nature of the several private collections of antique southern apple varieties. What was needed was a permanent site for southern apples.

The state of North Carolina owns and operates twenty-six historic sites including Horne Creek Living History Farm near Winston-Salem. This farm was settled by the Hauser family from Alsace, France, in the 1830s. In the 1970s the state purchased the farm and restored it to demonstrate farm life in piedmont North Carolina around 1900. The centerpiece of the farm is the modest 1875 farmhouse that Thomas and Charlotte Hauser built and where they raised their eleven children. Over 35,000 people visit Horne Creek Farm each year to walk through the house, gardens and outbuildings of the farm and to see the farm animals.

In 1997 the Site Manager of Horne Creek Farm agreed to make available a seven-acre parcel for an orchard to preserve antique southern apple varieties. With a fifty thousand dollar grant from the state, the Southern Heritage Apple Orchard was born.

The site of the Heritage Orchard is absolutely perfect for apples and is fronted on the north side by a paved road. The site is a long ridgeline sloping from north to south and falling off both to the east and to the west. Air drainage is ideal. The soil is a fertile and deep clay loam which drains well but is not droughty. Flecks of mica glint when the soil is turned.

The long abandoned tobacco field was cleared of trees and enclosed in an eight-foot-high all steel anti-deer fence. A well was drilled which produces over thirty gallons per minute. I then laid out the site to contain four hundred different antique southern apple varieties, two trees of each. One tree of each variety is free standing on M7A rootstocks and is pruned to a central leader. These are spaced twelve feet apart in rows eighteen feet

apart. The second tree is on M9 or B9 rootstock, espaliered on wires, and spaced two to eight feet apart in rows twelve feet apart. Having two trees of each variety gives us a certain source of grafting scions to replace a dead tree. I grafted and donated all eight hundred trees over several years beginning in 1998. Most of the trees are bearing fruit now.

The Site Manager at Horne Creek Farm has three workers, so there is only so much they can do for the Heritage Orchard. They keep the orchard mowed and spray it on occasion. During dry periods the staff operates the irrigation system. I drive up there two or three days a month (a two hundred mile round trip for me) and do most of the pruning as well as training the espaliered trees. Once a month a loyal Master Gardener helps me, and occasionally I shanghai friends. A nearby correctional facility sends over some inmates to help with heavy work such as planting and mulching.

All eight hundred trees are permanently mulched with three inches of crushed granite over landscape fabric. The larger trees grow in four-foot-wide strips of crushed stone. The espaliered trees are in two-foot strips of stone. The stone is light gray and reflects considerable light back up into the canopy. It also keeps the soil under it cooler and moister in summer. The stone strips make it easy to run the drip irrigation lines down the rows of trees (all trees are drip irrigated) and eliminate the need for mowing between the trees. The orchard floor between the strips of crushed stone is grassed mostly with fescue.

The four hundred small trees are all espaliered on wires using five classic European espalier shapes. Four high tensile wires, eighteen inches apart, are strung between posts six feet high. The wires are kept taut with turnbuckles. The decision to espalier the small trees was for several reasons:

1. Most trees are only two feet apart, thus saving space.
2. The trees are fruitful and bear high-quality apples.
3. Pruning, thinning and spraying are very easy as the trees are only six feet tall.
4. Espalier is a technique useful for city dwellers who want to grow apple trees on a small lot.
5. The trees in their various shapes are very eye-catching.

Three hundred of the four hundred small trees are in the oblique cordon espalier shape. These trees have proved to be easy to train, as they

are essentially a limbless central leader growing at a 45º angle and festooned with fruit spurs. Because light penetration is so good, almost every apple is well colored and, with proper thinning, of good size. I am so delighted by the oblique cordon trees at the Heritage Orchard that I am converting my own orchard over to it. With this shape I can continue to care for my trees when I am well into my eighties.

The remaining hundred small trees are espaliered in the Belgian Fence, vertical cordon, horizontal cordon and double-U palmate shapes to demonstrate the beautiful possibilities of espalier. With the exception of the vertical cordon, all these shapes are somewhat more difficult to train than the oblique cordon.

The Heritage Orchard is visitor friendly. It is kept mowed and a gravel road bisects the orchard to a gravel parking lot. Shade trees have been planted and, when they are larger, picnic tables will be under them. A master plan for the Heritage Orchard was professionally prepared two years ago and shows that the orchard needs a packing shed with a cold room, plus a visitor kiosk which tells the story of apples in the south. The North Carolina Department of Cultural Resources is aware of the building needs of the Heritage Orchard and, hopefully, will obtain funding soon. A full-time horticulturist is also a recognized requirement.

When all the trees in the Heritage Orchard mature, a winnowing process will take place. Those varieties of historical significance and/or high quality will be kept; those of little historical significance and of lesser quality will be replaced with the better antique varieties which are still being discovered.

With the exception of Florida and Louisiana, apple varieties of every southern state are in the Heritage Orchard, including Kentucky, Maryland, Arkansas and West Virginia. Some varieties of non-southern origin are also in the orchard if they were widely grown at one time in the south, such as **Winesap** (New Jersey), **Yellow Transparent** (Russia) and **Ingram** (Missouri).

FRUIT EXPLORING

The Quest: Search for the Perfect Fruit

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I am an orchardist. My goal is the perfect fruit, the one that makes the eater go, "Oh, my God; I have never had an apple this good." Or insert any other fruit for apple.

How does someone become an orchardist on a quest? Having the "Oh, my God!" experience while young helps. When I was fifteen years old I met Bob Daniels at an Extension Service meeting in Carbon County, Pennsylvania, where I lived at the time. Bob gave a great presentation at his little orchard a few miles from our house.

Ten years before trellised apple orchards became common, Bob had planted around six acres of dwarf apple trees on trellises. Some peaches, strawberries, blueberries, plums, cherries, sweet corn, a large vegetable garden and solar greenhouse rounded out his market selection. The talk was mostly about the trellised apples and I was hooked. I thought this was the neatest innovation in horticulture that I knew of. (Just recently I have come upon another great horticultural innovation, which is the limited arm rotation trellis for berry plants.)

At the end of the meeting I talked to Bob and told him I would like to work for him. He politely told me that they ran the farm with family labor but that I could give him a call in early spring to see if he had changed his mind. I called him in late February and started working for him in April. I rode a different bus home from school and got off at their place. Either he gave me a ride home when I was done work or my Mom came and got me. On weekends I frequently rode my bike to work. I helped Bob prune all the apples and resurrect an abandoned orchard nearby which he had leased. When pruning was over my work was over until fall.

In fall I picked apples and ate apples and every now and then I would hit a perfect **McIntosh** or a perfect **Golden Delicious.** I couldn't believe how good a perfect apple could be. What makes an apple perfect? I think it is how and where the fruit was grown and the individual's personal

experience. Where you are, how you feel, the stage of ripeness of the fruit, the soil the fruit was grown in, how heavily cropped the trees are, etc.. Thus started my quest. My lifelong goal of working in horticulture was focused. I wanted to grow fruit.

Since that time I have had the chance to sample perfect peaches, perfect plums, perfect pears and perfect Asian pears. Even though I grow my own fruit, finding the perfect fruit is like a lottery. You have to be at the right place at the right time with the right piece of fruit.

The best peaches I ever had were rootstock escapes in the first commercial orchard I worked in after college. Peaches are grafted on seedlings grown from canning clingstone varieties. Sometimes the top part dies and the canning clingstone grows up in its place. All current commercial peach varieties are technically called melting freestones. The flesh type is melting (melts in your mouth) and the pit is free from the flesh in ripe fruit. Very early varieties are not freestone but are physiologically capable of being freestone, they just aren't on the tree long enough to develop that characteristic. The canning clingstones are non-melting. The texture is more similar to a European plum. It's not crunchy but it doesn't just melt in your mouth. Hard to explain until you've actually had one. The flesh in the canning clings adheres tightly to the pit. These are ideal for canning since the flesh remains firm when canned. Hence the name "canning cling."

I find this flesh texture extremely desirable. The rootstock escapes in the orchard were all cling types and did not get picked with the commercial crop since they ripened before or after. Combined with this great flesh in about one in five of the escapees, there was also really great flavor. Put the two together and you have a perfect peach. You also have a tree in the orchard that every worker knows the exact location of. The good news is that fruit breeders have finally found a source of freestone non-melting germplasm and in the future we may be growing some peaches with much greater perfection potential than any current cultivars have.

I have a meager two perfect plum experiences. One was tree-ripened **Green Gage** plums on a farm I worked on in Ohio. This was great because it was the only repeatable great fruit experience I have ever had. For two weeks I had some of the best fruit eating of my life and then the plums were gone and I moved on that winter.

My second perfect plum experience was at a NAFEX meeting in Ontario, Canada. We were touring the research plots at the Vineland experimental station. As we were loaded onto our buses after a really great talk about his plum breeding work, Gus Tehrani the breeder hopped up on the bus with a basket of big blue European plums from his breeding program and passed it around. Based on the comments from everyone else, it seems every plum in that basket was perfect: the one I had certainly was. Those two plum experiences led me to plant a trial block of 40 plum varieties, thirteen years later. My goal is to find the varieties that provide repeatable perfect fruit experiences.

Perfect European pear experiences are more common now that I am growing them myself. Even so I would only rate 1 in 10 as perfect. The other nine are either slightly under-ripe or slightly overripe, or weren't picked at the optimum time to ripen to perfection. **Magness** is a variety so good that you can usually guarantee someone tasting a properly ripened one that it will be the best pear they have ever eaten. **Harrow Delight** is a close second and some prefer it to **Magness**. I now have a few more high-quality pear varieties in my collection and look forward to more perfect fruit.

Until I grew my own, I never had a perfect Asian pear experience. I had tasted fruit that I thought displayed a faint glimmer of perfection but none ever made it there. I am still seeking repeatable Asian pear perfection but with their variable maturity on the tree, it seems to escape us. We can consistently produce great Asian pears but only occasionally reach perfection.

Perfect apples are really non-repeatable. Ripeness and circumstance influence the experience too much for me. **Macouns** picked tree ripe in the Hudson valley can deliver perfection but two weeks later they are ho hum. **Ohio Melrose** that have been in storage over winter can achieve perfection when everything comes together. Stem bowl cracks on tree ripened **Galas** are always a potential indicator of perfection. **Adams Pearmain** in a Heritage orchard on a beautiful fall day with friends made it to perfection. The occasional missed fruit after harvest with all the tree's resources thrown in to just a single or few fruits can provide perfection in varieties not normally prone to it. **Jonathan, Melrose, Enterprise** and **Empire** have all surprised me this way.

Last but not least is **Goldrush** after several months in storage or tree ripened, the one apple that can provide close to repeatable apple perfection. In our climate it is difficult to tree ripen **Goldrush** due to the onset of winter. The occasional missed fruit provides the tree-ripened experience and our cooler provides the stored **Goldrush**.

Is my quest over? Are you kidding? I hope it's just begun.

*This article was originally written for our farm newsletter in 2004. Since then I have found repeatable plum perfection with **Rosy Gage** and **Oullins Gage**. **Rosy Gage** is truly beyond belief. Asian pear perfection for me has come almost exclusively from **Shinsui** and **Hosui** picked at their peak and still warm in the field although there was one **Nittaka** shared with all our pickers at the end of the day that was really wonderful this year.*

Don Balser, Life Explorer

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Don Balser was born in 1923 in Illinois State, and lived there throughout high school. When the attack on Pearl Harbor occurred, he enlisted in the U.S. Army Air Corps in 1941 and served until 1946 when he received his first honorary discharge. (Four more were to follow, clear until 1961). He maintained reserve status with the Army, ROTC and Air Force for many years after 1946.

In March 1949, Don married the woman destined to be the love of his life, Jane Ann Kaelin, who will be his loving wife forever. Their first son was born in 1951, James Carl Balser and in two more years they were blessed with a little girl, Marianne Balser. They were given another son, John Charles Balser in 1956. A third son followed after a longer interval, Eric Spalding Balser, born in 1964.

Don studied forestry at the University of Idaho, where he graduated *summa cum laude*. He completed a four-year degree in three and a half years while living at the school nursery. The university also awarded him a copper plaque in recognition of his academic achievement which is displayed in the hall of fame there to this day.

His job and schooling carried him and his family back and forth across the west and Midwest for a few years before they settled in Denver, Colorado. They built a home there and stayed for almost two decades. This is where some of his most impressive accomplishments were completed as he worked in the service of the federal government.

His position was Research Biologist and the entire western United States, Mexico and parts of South America were his territory. His accomplishments in this field were unequaled, almost legendary, as is evidenced by the thick sheaf of awards, commendations and honors received through these years.

Among these documents are recognitions from many states and several foreign countries. He received commendations on meritorious service from offices as high as and including that of the President of the United States.

Whenever he took on a pursuit, be it a light hobby or a major undertaking, he would apply so much intensity and effort that he would always take it to its highest level of accomplishment. Don was very methodical and analytical, with tireless determination. He was always seeking and then attaining the highest of goals. These tendencies brought him to the peak of accomplishment in all his undertakings.

Don hunted, fished and trapped avidly as a young man, these skills and knowledge are one of the most treasured gifts he gave to his sons plus he found lots of pastimes and diversions, such as raising fancy show pigeons, stamp collecting and gardening.

Along the way he built several homes for his family. He also developed several properties during his life. When younger, he converted a Wisconsin wilderness swamp into a fur and fish farm with ponds, lakes and carefully managed timber.

Don's love of the outdoors and adventures in trapping and hunting in the forties gave him the natural adoption of the name of a Daniel Boone-type character encountered in a Chicago newspaper Sunday run of frontier stories being "Bear Dog Balser," as published and spelled identically with Don's last name. The description fit well then and was carried thenceforth.

After retiring from the Federal government he became even more interested in forestry and refined his attention to orchard trees and their crops. This obsession led him to the first of his Washington state properties. Here he would take a steep tangle of brush and alder and

transform it into a park-like paradise of terraced cedar groves and garden areas.

The neighbors in his Camano Island property watched in amazement at how hard he worked, dawn till dusk, seven days a week to enhance this property for his wife and himself. He and his youngest son turned three acres of huge alders into stove wood, split and stacked in a single summer. This Camano Island acreage was his pride and joy for twelve years.

In 1988, a new property caught his eye, a twenty-acre piece of farmland in Skagit County, WA. Because of its flatness and deep rich soil it contrasted sharply with the Camano property and was better suited to his goals of propagating and developing nut trees. With fervent attention and effort he developed the new land into what it is today, a beautiful green tribute to his brilliant scientific mind, his strong back and hands and his unflagging devotion to his chosen research. The estate includes five acres of select nut tree varieties, park-like views and a pond for irrigation and wildlife. On this property he built the wonderful home he designed with his wife. They decided to spend the rest of their years here.

While waiting for daylight so he could work outside, Don loved to learn about nutrition and health and followed a regimen of dietary supplements and foods that helped him to diminish or even defeat the many infirmities of old age.

As if building Balser Tree Farm wasn't enough to do, this is the home where he developed an interest in genealogy and began to trace his family back through the years. In his typical fashion he soon became renowned for the thoroughness and depth of this research and uncovered facts unknown to even the best archivists in the old country.

During all his years Don loved to travel and managed to insert countless trips and vacations into his lifestyle. To list these far flung adventures is mind-boggling. Work carried him to every state west of the Mississippi River and then abroad to every country of the east and Far East, across India and then south through Mexico and South America. There were some trips to Washington D.C. to receive commendations and awards too.

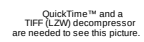
His leisure time wanderings with his wife took them to romantic locations such as France, Italy, Greece, Switzerland, England and Hawaii, and countries as exciting as Egypt, Israel, Guatemala, Mexico, Germany, Australia, New Zealand and Alaska. He and Jane employed every means of

transport from huge luxury cruise ships to camels. And of course, they would always stop along the way to study each place through the lenses of their keen minds.

In 2002 an event unfolded that was the most profound of Don's life. This was the passing on of his daughter, Marianne. The effects of this reached deeply into Don, teaching him another of life's lessons. His strength in the aftermath of this loss was truly a saving grace to his grieving wife and family.

Because of his nature, Don was healthy and active, keen and excited by life to the very moment of his passing. The toll of his 83 years did not dampen his abilities or outlook. Instead he was happily hard at work among his trees when he suddenly departed this life.

Eagles must soar….



Don Balser: December 24, 2006, 83 years, 6 months, 5 days

Fruit and Nut Genebanks
In the US National Plant Germplasm System

Condensed from: Postman, J., K. Hummer, E. Stover, R. Krueger, P. Forsline, L.J. Grauke, F. Zee, T. Ayala-Silva, B. Irish. 2006. Fruit and Nut Genebanks in the US National Plant Germplasm System. *HortScience* 41(5):1188-1194.

The year 2005 marked the 25th anniversary of the establishment of Repositories by the U. S. Department of Agriculture (USDA), National Plant Germplasm System (NPGS), devoted to clonally propagated, horticultural fruit and nut crops. During this quarter century, facilities in Hilo, Hawaii; Mayaguez, Puerto Rico; Miami, Florida; and Riverside, California were developed to preserve collections of tropical and subtropical fruit and nut crops. Facilities in Brownwood, Texas; Corvallis, Oregon; Davis, California; and Geneva, New York preserve the temperate crops. Each of these facilities has assembled internationally recognized, globally diverse collections of genetic resources for their assigned crops. Unique cultivars or selections are maintained as growing plants, evaluated for descriptive or useful traits, documented in a national public database, and freely distributed as clonal propagules to researchers and other germplasm users around the world. Seed collections represent wild populations for some crop relatives. These eight genebanks maintain 30,000 accessions representing 1,600 species of fruit and nut crops and their wild relatives, and they distribute more than 15,000 accessions annually. While originally conceived as working collections for crop improvement, NPGS genebanks have also become invaluable preserves for rare species and historic cultivars, sources of raw materials for basic plant genetic research, and living classrooms for public education. These collections protect our horticultural heritage for now and for future generations.

History of U.S. National Fruit and Nut Repositories

Prior to 1980, fruit and nut germplasm collections in the United States were largely developed and maintained by individual plant breeders at universities, and were often lost when scientists retired, changed their research focus, or encountered funding shortfalls. As a result, collections of

irreplaceable material assembled through years of effort were routinely lost. That lack of germplasm security lessened in 1980 with the establishment of the first U.S. National Clonal Germplasm Repository in Corvallis. Over the next few years, seven additional repositories were constructed at specifically chosen sites throughout the country.

The USDA Agricultural Research Service (ARS) had operated four regional plant introduction stations in Ames, Iowa; Pullman, Washington; Geneva, N.Y. and Griffin, Georgia since the 1940s to preserve and distribute seed of vegetable and agronomic crops. In 1958, the National Seed Storage Lab (now the National Center for Genetic Resource Preservation) opened in Fort Collins, Colorado, to ensure the long-term "base, backup" preservation of seeds from each of the "working" collections. This network of federal genebanks came to be known as the National Plant Germplasm System (NPGS). Clonal repositories were added to the NPGS due to the efforts of ARS pear breeder Howard Brooks. Dr. Brooks formed an *ad hoc* clonal committee following a 1974 meeting of the American Society for Horticultural Science. In 1977, Brooks asked committee members to develop plans for national "clonal" repositories for crops important in their region of the country. He requested that the plans specifically itemize the necessary space for land, greenhouses, laboratories, etc. needed to safeguard germplasm of regional crops. During the following winter, Brooks appeared before the U.S. Congressional Committee on Agriculture in Washington D.C. to request federal funding to establish a system of National Clonal Repositories. Retired Oregon State University horticulture professor Melvin Westwood explained how the congressmen approved the concept, and asked Brooks to develop a more specific plan to be presented to them in the following year. They were very impressed when he opened his briefcase and pulled out the detailed plans that his committee had already assembled for 12 repository sites. During that very session of Congress, a two million dollar federal appropriation was approved to begin building a system of National Clonal Germplasm Repositories at Land Grant Universities. The Corvallis, Oregon, Repository was selected as the first to be constructed because of the large collections of pears, hazelnuts, and small fruits, already present at that site. Funding was ultimately approved for eight clonal repositories (Fig. 1).

NPGS 'Clonal' Repositories

The mission of NPGS genebanks includes the acquisition, documentation, preservation, evaluation, enhancement, and distribution of plant genetic resources. This conservation activity improves the quality and production of economic crops important to United States and world agriculture (**http://www.ars-grin.gov/npgs**). The US clonal genebanks house wild relatives as well as improved genotypes for their assigned crops, and currently maintain 30,000 accessions representing 1,600 species (Table 2). For some temperate crops, seed collections are used to represent wild species populations in addition to the genotypes which must be preserved clonally. Many nut crops and tropical or sub-tropical species have recalcitrant seeds that do not retain viability when stored, so clonal living plant conservation is required. Maintenance and preservation are the primary objectives at the clonal Repositories followed by research and evaluation. NPGS fruit and nut repositories are described here in the order that they were established. Contact information and crop responsibilities for each site are provided in Table 1, and collections are summarized in Table 2.

Corvallis, Oregon. Established 1980.

NCGR-Corvallis is located on the grounds of Oregon State University. The Corvallis Repository maintains collections of more than 26 genera including *Actinidia*, *Corylus*, *Cydonia*, *Fragaria*, *Pyrus*, *Ribes*, *Rubus*, and *Vaccinium*. Clonal collections of *Fragaria*, *Rubus* and *Vaccinium* are maintained as potted plants in screenhouses for protection from virus vectors. Primary clonal collections for *Actinidia*, *Corylus*, *Cydonia*, *Pyrus*, and *Ribes* are maintained in field collections

Davis, California. Established 1981.

NCGR-Davis is located at the University of California, Davis. Important fruit and nut collections include *Actinidia*, *Diospyros*, *Ficus*, *Juglans*, *Olea*, *Pistacia*, *Prunus*, *Punica*, and *Vitis*. The Davis Repository holds over 5,400 plant accessions representing about 15 genera and 175 species with *Vitis* and *Prunus* accounting for about 75% of accessions. Accessions are maintained as two trees or vines each on a 30 hectare field site in Winters, California. *Vitis* and *Prunus* are also maintained as potted plants in screen houses for protection from disease vectors.

Brownwood, Texas. Established 1984.

The Brownwood Repository has been the home of the USDA ARS Pecan Research program since 1933. There are over 400 pecan cultivars in the collection represented by grafted trees, and 300 provenance collections maintained as self-rooted seedling trees.

Geneva, New York. Established 1984.

The Repository for apple, grape and tart cherry is on the campus of Cornell University in Geneva. The apple collection includes 4,000 accessions with 2,500 of these maintained as trees grafted to EMLA 7 semi-dwarfing rootstock. Nearly all apple accessions are backed up in cryogenic storage in Fort Collins, Colorado as dormant buds. The tart cherry collection includes approximately 100 accessions of *Prunus cerasus* and *P. fruticosa* maintained on MXM-2 rootstock. The grape collection consists of 1,200 accessions growing in the field as own-rooted plants. These accessions represent mostly North American native species and hybrids that are cold hardy and supplement the 2,800 cold-tender *Vitis* accessions maintained in Davis, California.

Tropical and Subtropical Collections at Mayaguez, Puerto Rico (established 1984); Miami, Florida (1984); Hilo, Hawaii (1986); and Riverside, California (1987).

Four NPGS genebanks are devoted to the preservation of tropical and subtropical crops with some accessions duplicated at more than one site for backup. The Mayaguez Repository maintains 450 clonal fruit and nut accessions in field plots and greenhouses. Collections include *Manilkara* (sapodilla), *Musa*, *Pouteria* (mamey or mammee sapote), *Theobroma*, several species of *Annona* and *Garcinia*. The Miami Repository is located at the USDA Subtropical Horticultural Research Station and maintains collections of sugar cane and subtropical woody ornamentals in addition to fruit and nut crops. Important fruit crops preserved at Miami include cacao, fig, lychee, and mango. The Hilo Repository has approximately 1,000 living plants of 14 important tropical fruit and nut crops including *Ananas*, *Artocarpus*, *Averrhoa*, *Bactris*, *Canarium*, *Carica*, *Dimocarpus*, *Litchi*, *Macadamia*, *Malpighia*, *Nephelium*, *Passiflora*, and *Psidium*. The Riverside Repository is located at the Riverside campus of the University of California, and preserves collections of *Citrus* and date palms.

Documentation of Collections - GRIN

The Germplasm Resources Information Network or GRIN is the national public database that provides both gene bank personnel and germplasm users access to passport, characterization, evaluation, inventory, and distribution data. In addition to plant germplasm, GRIN also supports the National Animal, Microbial, and Invertebrate Germplasm Programs. Each repository is responsible for entering and maintaining data for collections at their site. Several plant database query options are available to the public at **http://www.ars-grin.gov/npgs/searchgrin.html**.

Maintenance and Backup Strategies

Repositories must find a balance between maximizing diversity and minimizing the risk of loss. Some crops like apples, pears, pecans and walnuts are efficiently maintained in long-lived orchard collections. Crops such as citrus, stone fruits or strawberries are prone to insect-borne viruses and therefore must be protected in screenhouses to prevent plants from becoming infected. Maintaining multiple plants of each accession as in-house backup increases the security of the collection, but reduces the space available for additional accessions. This is particularly true for potted plants maintained in screenhouses or greenhouses. Some repositories use in vitro culture as a medium-term backup strategy, and others use cryogenic storage of either apical meristems or dormant buds for long-term backup.

Distribution Policies and Procedures

Distribution of clonal germplasm is more complicated than distribution of seeds. Clonal repositories do not generally distribute finished rooted plants, but rather distribute scions or cuttings that must be propagated by the recipient. Shipping of requested accessions is therefore dependent on the season when appropriate propagules are available. This might be early summer for strawberry runners, or mid-winter for grape cuttings or fruit tree scions. Propagation material of subtropical and tropical species is often available throughout the year. Germplasm is freely available from NPGS Repositories in small quantities for research purposes. Clonal repositories seek to distribute germplasm without disseminating germplasm-borne pathogens including viruses, viroids and phytoplasmas. Although not certified to be free of all known pathogens, much of the clonal germplasm in NPGS has been tested for the presence of common or important viruses and virus-like pathogens. Distributions to

foreign requestors must comply with quarantine regulations and restrictions of the United States and the recipient country.

Characterization

Stephen Witt (1985) in his "BriefBook" on genetic diversity compared germplasm collections to "pharmacies filled with miracle drugs without labels." We need to uncover the genes lurking in our germplasm that will permit us to develop cultivars able to overcome emerging diseases, adapt to changing climates, improve flavor, enhance nutritional value and expand production into new environments. We must not only preserve our vanishing agricultural heritage, but also discover new sources of essential human nutrients, satisfy consumer desires for novel fruits and nuts and implement reliable methods to identify and "fingerprint" genotypes. Identification and elimination of duplicates will help us make more efficient use of resources. DNA techniques have become useful tools not only for identifying varieties but also for locating genes associated with useful traits. Germplasm is only as useful as the information that accompanies it and GRIN provides a place to store that information. Geographic locality coordinates, for example, allow plant origin maps to be generated which associate accessions with climate and environment data. Each Repository, in consultation with a team of crop specialists, has developed a list of 'descriptors' or key traits that are of interest to plant breeders. Plant evaluation results are loaded to GRIN so that germplasm users can query for plants with traits that meet their specialized needs.

Future Challenges

A quarter century after their inception, the NPGS Clonal Germplasm Repositories have established valuable national collections representing world diversity of not only commercially important fruit and nut cultivars, but also their wild relatives which may have genetic traits of unanticipated importance. Cohen et al. (1991) identified four eras in ex situ crop germplasm conservation:

I. A period of exploration and acquisition from the early 1800s to about 1950

II. A period of establishing conservation facilities from the 1950s to the 1980s

III. A period focused on regeneration and research from 1980 to the second decade of the 21st century

IV. A future era of enhanced utilization.

Workers at NPGS clonal genebanks had a late start on this roadmap, but are now in the era where regeneration and evaluation of collections are priorities. Crop germplasm collections were originally conceived as a "hedge against starvation" (Loewer, 1991), but as collections become more complete they become valuable for more than just crop improvement. Some species in NPGS collections are rare or endangered in the wild, making these genebanks conservators of plants that may become extinct in nature. Plant explorers build upon the knowledge of plant distributions that were often established by NPGS collectors. Secondary and tertiary gene pools captured in our genebanks are being used for basic research on evolution and genetic relationships. Patent and trademark attorneys consult the GRIN database and NPGS curators as important references on cultivar names or traits. Artists and photographers visit our collections to document accessions in other ways. Future challenges include identifying gaps and acquiring plants to fill those gaps. Recent international agreements, such as the Convention on Biological Diversity (**http://www.biodiv.org/default.shtml**) and the International Treaty on Plant Genetic Resources for Food and Agriculture (**http://www.fao.org/AG/cgrfa/itpgr.htm**) have redefined the protocols for exchange of plant genetic resources between countries. National quarantine regulations that prevent the movement of insect and disease pests also impact international germplasm exchange. Genebank personnel will be challenged to maintain expanding collections with declining resources, and transition from the acquisition phase to the evaluation phase as collections mature. Eliminating unintended redundancy, filling genetic gaps, and expanding phenotype and genotype data in GRIN will continue to enhance the value of the NPGS fruit and nut collections. Cohen's era of enhanced utilization, when mature genebanks expand their partnerships with breeders, researchers and stakeholders, has arrived for the NPGS clonal repositories.

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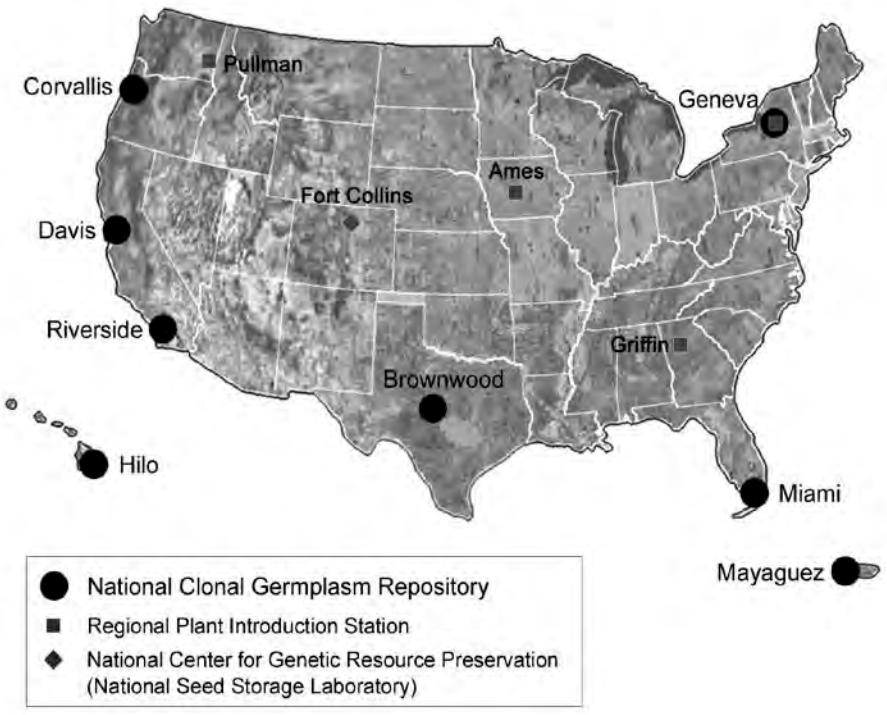
Witt, S.C. 1985. Biotechnology and Genetic Diversity. California Agricultural Lands Project, San Francisco, 145pp. Figure 1 - Locations of USDA National Plant Germplasm System clonal genebanks for fruit and nut crops.

Table 1 - Curators, latitudes, contact information and crop responsibilities for the fruit and nut repositories in the USDA National



Plant Germplasm System. A website directory can be found at **http://www.ars-grin.gov/npgs/rephomepgs.html**

Site – Curator	Contact Info	Crop Responsibilities
Brownwood, Texas **31.71° N** L.J. Grauke	USDA-ARS-NCGR 10200 FM 50 Somerville, TX 77879 ph (979) 272.1402 email: brwlg@ars-grin.gov	*Carya* (pecan, hickory)
Corvallis, Oregon **44.55° N** Kim Hummer Joseph Postman	USDA-ARS-NCGR 33447 Peoria Road Corvallis, OR 97333-2521 ph (541) 738.4200 email: cor@ars-grin.gov	*Actinidia* (hardy kiwifruit) *Amelanchier* (service berry), *Asimina* (paw paw), *Corylus* (hazelnut), *Cydonia* (quince), *Fragaria* (strawberry), *Juglans cinerea* (butternut), *Mespilus* (medlar), *Pyrus* (pear), *Ribes* (currant, gooseberry) *Rubus* (blackberry, raspberry), *Sorbus* (mountain ash), *Vaccinium* (blueberry, cranberry)
Davis, California **38.55° N** Ed Stover	USDA-ARS-NCGR One Shield Ave, UCD Davis, CA 95616-8607 ph (530) 752.7009 email: dav@ars-grin.gov	*Actinidia* (kiwifruit), *Diospyros* (persimmon), *Eriobotrya* (loquat), *Ficus* (fig), *Juglans* (walnut), *Morus* (mulberry), *Olea* (olive), *Pistacia* (pistachio), *Prunus* (stone fruit, almond), *Punica* (pomegranate), *Vitis* (grape)

Geneva, New York **42.88° N** Phil Forsline	Plant Genetic Resource Unit Cornell University Exp. Station 630 W. North Street Geneva, NY 14456-0462 (315) 787.2390 email: Philip.Forsline@ars.usda.gov	*Malus* (apple), *Prunus cerasus* (tart cherries), *Vitis* (hardy grape)
Hilo, Hawaii **19.57° N** Francis Zee	USDA-ARS-NCGR PO Box 4487 928 Stainback Hwy Hilo, HI 96720 ph (808) 959.5833 email: fzee@pbarc.ars.usda.gov	*Ananas* (pineapple), *Artocarpus* (breadfruit) *Averrhoa* (star fruit), *Bactris* (peach palm), *Carica* (papaya), *Canarium* (pilinut), *Dimocarpus* (longan), *Litchi* (lychee), *Macadamia* (macadamia), *Malpighia* (acerola), *Nephelium* (rambutan, pulasan), *Passiflora* (passionfruit), *Psidium* (guava)
Miami, Florida **25.64° N** Tomas Ayala-Silva Raymond Schnell	USDA-ARS-NCGR 13601 Old Cutler Rd. Miami, FL 33158 ph (305) 254.3635 email: mia@ars.grin.gov	*Annona* (cherimoya), *Cocos nucifera* (coconut), *Dimocarpus* (longan), *Diospyros digyna* (black sapote), *Ficus* (fig), *Litchi* (lychee), *Mangifera* (mango), *Manilkara zapota* (sapodilla), *Musa* spp. (banana), *Persea* (avocado), *Pouteria sapota* (mamey sapote), *Saccarum* (sugarcane),

		Theobroma cacao (cocoa), *Zizyphus* (jujube).
Mayaguez, Puerto Rico 18.20° N Brian Irish Ricardo Goenaga	USDA-ARS-TARS 2200 Pedro Albizu Campos Ave., Suite 201 Mayaguez, PR 00680 ph (787) 831.3435 email: may@ars-grin.gov	*Annona* (cherimoya), *Garcinia*, *Manilkara zapota* (níspero), *Musa* spp. (plantain, banana), *Pouteria sapota* (mamey sapote), *Theobroma cacao* (cocoa).
Riverside, California 33.96° N Robert Krueger	USDA-ARS-NCGR 1060 Martin Luther King, Jr. Blvd. Riverside, CA 92507-5437 (951) 827.4399 email: rivrk@ars-grin.gov	*Citrus* and *Citrus* relatives, *Phoenix* (date)

Table 2 - Fruit and nut collections at the eight USDA NPGS Clonal Repositories (http://www.ars-grin.gov/npgs/stats).

Genus	Site[z]	Accessions	Species
Actinidia	CORD	198	27
Actinidia	AVRD	68	14
Amelanchier	CORD	226	15
Ampelopsis	AVRD	21	6
Ampelopsis	ENGR	5	3
Ananas	HI	160	10
Annamocarya	BRW	11	1
Annona	MI	16	6

	AY		
	M		
Annona	IA	70	10
	C		
Aronia	OR	7	1
	H		
Artocarpus	I	39	5
	M		
Artocarpus	AY	10	7
	C		
Asimina	OR	70	7
	H		
Averrhoa	I	25	1
	M		
Averrhoa	AY	19	2
	M		
Averrhoa	IA	38	1
	H		
Bactris	I	15	1
	M		
Bactris	IA	16	3
	H		
Canarium	I	16	8
	H		
Carica	I	143	2
	B		
Carya	RW	1340	23
Chaenomeles	C		
	OR	13	3
Citrofortunella	R		
	IV	8	1
	R		
Citroncirus	IV	43	1
	R		
Citropsis	IV	4	4
	R		
Citrus	IV	896	86

Clausena	IV	R	6	4
Corylus	OR	C	795	22
Crataegus	OR	C	18	8
Cydonia	OR	C	114	2
Dimocarpus	I	H	19	2
Diospyros	AV	D	103	4
Durio	I	H	3	3
Eriobotrya	AV	D	29	2
Ficus	AV	D	196	4
Ficus	IA	M	87	47
Fortunella	IV	R	11	7
Fragaria	OR	C	1734	37
Juglans	OR	C	70	3
Juglans	AV	D	425	23
Litchi	I	H	63	1
Litchi	IA	M	18	1
Lonicera	OR	C	53	7
Macadamia	I	H	26	5
Malpighia		M	14	3

	IA		
	G		
Malus	EN	3994	55
	M		
Mangifera	IA	166	1
	M		
Manilkara	AY	26	2
	M		
Manilkara	IA	12	3
	C		
Mespilus	OR	48	3
	R		
Microcitrus	IV	19	6
	D		
Morus	AV	58	8
	M		
Musa	AY	112	4
	M		
Musa	IA	73	3
	H		
Nephelium	I	38	6
	D		
Olea	AV	139	4
	H		
Passiflora	I	34	9
	M		
Persea	IA	252	3
	M		
Phoenix	IA	27	7
	R		
Phoenix	IV	69	2
	D		
Pistacia	AV	218	12
	R		
Poncirus	IV	54	1
	M		
Pouteria	AY	27	2

Pouteria	IA	M	40		5
Prunus	AV	D	1330		87
Prunus	EN	G	106		14
Pseudophoe nix	IA	M	3		2
Psidium	I	H	44		5
Psidium	AY	M	4		3
Pterocarya	AV	D	11		6
Punica	AV	D	149		1
Pyronia	OR	C	7		1
Pyrus	OR	C	2180		37
Ribes	OR	C	1324	9	10
Rubus	OR	C	2078	2	19
Sambucus	OR	C	183		21
Severinia	IV	R	11		2
Sorbopyrus	OR	C	9		2
Sorbus	OR	C	282		60
Theobroma	AY	M	156		1
Theobroma	IA	M	72		1
Vaccinium		C	1579		68

	OR			
		D		
Vitis	AV		2913	49
		G		
Vitis	EN		1203	26
		M		
Ziziphus	IA		4	1

z BRW = Brownwood, Texas
COR = Corvallis, Ore.
DAV = Davis, Calif.
GEN = Geneva, N.Y.
HI = Hilo, Hawaii
MAY = Mayaguez, Pureto Rico
MIA = Miami, Fla.
RIV = Riverside, Calif.

******MIXED FRUITS******

Growing Kumquats Along the Gulf Coast

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I grow several varieties of kumquats. Most are more cold hardy than more commonly known or mainstream citrus. Fruits are smaller but plants are more cold hardy than many other types of citrus. Also, trees leaf out ahd flower in the spring later than many other citrus. Kumquats are wonderful to grow for fruit and ornamental reasons.

The kumquat peels are sweet. Varieties with less juice within the fruit pulp seem to taste sweeter. One eats the fruit whole except for the seeds.

Changshou has the largest fruit of the kumquats. This one ripens starting in mid-November for me. Fruits can range up to golf-ball size for this one. The peel is soft. I consider this one to have the best taste of all my kumquats. Cold hardiness is less than the other kumquats but just a little less than Satsuma oranges. Fruits are intermediate in tartness in

comparison to **Meiwa** and **Nagami.** Other varieties of kumquat are more cold hardy than even **Satsuma** oranges.

Meiwa is known as the sweetest kumquat. **Meiwa** fruit have very little juice, thus the sweeter taste. **Nagami** is known as the sour kumquat. However, the peel is much softer than **Meiwa.** Fruit shape is more oval and elongated than **Meiwa.** Fruit ripen about the same time as **Meiwa,** starting in mid to late December.

There is a hybrid of **Meiwa** and **Nagami** bearing fruit that is between these two as to tartness and shape of fruit as well as softness of the peel. What is notable is that fruit so far have been seedless.

Kumquats can be very productive as plants get older. One way to use the fruit is to make kumquat marmalade. What makes this different from other marmalades made from sour oranges is the kumquat taste. This is wonderful to have, once fruits are not in season.

You can use any of these kumquat varieties to make marmalade. I feel that the best marmalades are made with those kumquats with a softer peel, such as **Changshou** or **Nagami.** You can also use a combination of more than one variety to make kumquat marmalade. Someone I know uses a mixture of half **Nagami** fruit with either **Changshou** or **Meiwa** fruit to complete this mixture.

In any case, kumquat marmalade is a marvelous way to use the extra fruit. The powdered form of pectin also seems to make the best texture of kumquat marmalade.

Kumquat Marmalade

1 ½ pounds kumquats, seeded and thinly sliced, about 4 cups
2-3 c. water
3 T. powdered pectin
2 t. lemon juice
4 ¾ c. sugar

Place kumquats in a large non-reactive saucepan. Add enough water to barely cover kumquats. Bring to a boil over medium heat. Reduce heat to low. Simmer 50 minutes or until peelings are soft, adding additional water as needed to keep kumquats barely covered and stirring occasionally.

Meanwhile, place 5-oz. canning jars and lids in a large pot. Boil 5 minutes. Let stand in hot water until ready to use.

Stir in pectin and lemon juice, mixing thoroughly. Bring to a boil over medium-high heat. Boil 1 minute, stir in sugar. Bring to a roiling boil. Boil 1 minute, remove heat, and skim off foam.

Ladle mixture into sterile jars, leaving ½" space at top. Wipe rims and seal tightly with lids. Let cool completely. Makes 8 jars.

Petite Jewel Grape

Ike Kerschner North Star Orchard 928 Stargazer Road Coatesville, PA 19320 NorthStarOrchard@aol.com

Petite Jewel is a seedless grape created by Elmer Swenson as a cross of MN 78 x **Canadice**. It is reportedly healthy and hardy to zone 4B. I can't vouch for either claim as my vines are heavily sprayed because of the block they are in and my farm is in zone 6B.

Compared to other eastern seedless grapes, **Petite Jewel** has a number of unique characteristics. It is a very early budder and so should be subject to late spring frost but has not missed a crop in eight years at my location. In eight years of cropping, it has never had objectionable seed remnants unlike many other eastern seedless grapes. **Petit Jewel** is relatively low in vigor and very manageable in the vineyard. It has better production when cane pruned but produces well from 4-5 bud spurs and more recently even 2-3 bud spurs.

The berries range in size from only slightly larger than a garden pea to the size of **Canadice** berries and the clusters are small and loose. As my vines have aged the production has been acceptable, averaging 1-2 lbs per foot of row. Unlike **Canadice,** which **Petite Jewel** closely resembles, the clusters are always loose and never plagued with bunch rot. **Petit Jewel** ripens early to very early. The flavor is superior to **Canadice** and possibly the best flavored out of my collection of most of the available eastern seedless grapes. I might rate **Vanessa** higher but that is really because of **Vanessa's** crisp flesh as much as actual flavor superiority.

When selling **Petit Jewel** fruit there is always reluctance by buyers because of the small berry size. One taste convinces even the most skeptical customer. I was reluctant to embrace the cultivar because of the size issue but got over it when I began to think of them like blueberries in a cluster instead of California table grapes. When we had our first crop, a visitor to our farm suggested a unique use for **Petit Jewel**: it would make a unique dinner plate garnish. I have not been able to grow enough to know if restaurants would be interested in this use or not.

Overall, I consider **Petite Jewel** to be perfectly named. It is small and is unquestionably a jewel in the treasure chest of eastern seedless grapes.

Fedco Trees, PO Box 520, Waterville, ME, 04903-0520 will have plants available for Spring 2007. Please do not contact me for propagation wood.

Growing American Persimmons in South Louisiana

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I grow American and Oriental persimmons in south Louisiana along with several hybrids of these two species of persimmon. My home orchard is in USDA climate zone 8B, about 22 miles northwest of Baton Rouge, LA. I have another orchard south of Lafayette, LA, on family property.

The advantage some of us have in growing both species is that oriental persimmons have larger fruit with fewer seeds. But the American persimmons leaf out and flower later in the spring to escape damage from late freezes, but have a wonderful and different taste.

As to American persimmons, the northern 90-chromosome named varieties ripen fruit and go dormant earlier than the local 60-chromosome American persimmons.

My favorite variety of American persimmon is **Geneva Red.** This is a variety I originally obtained from John Gordon, Jr. of upstate New York. The fruist are at least as large or larger than **Early Golden** and **Killen.** Fruits ripen at about the same season as **Morris Burton.**

The **Geneva Red** has a very colorful red fruit, as implied by its name. Most local persimmon connoisseurs prefer fruits of this variety.

According to John Gordon, Jr., there were seedlings of **Morris Burton** named **MB-1, MB-2,** and **MB-3. MB-1** was later named **Evelyn; MB-2** became **Geneva Red,** and **MB-3** is still known as **MB-3. MB-3** fruits are the largest in size with **Geneva Red** fruit being larger than **Evelyn.** All have larger-sized fruit than **Morris Burton** and grow more rapidly as well. **Morris Burton** can be slow growing into a mature tree.

In my orchard, **Geneva Red** ripens just before **Evelyn** but after **Geneva Pumpkin.** I do not grow **MB-3** as a tree. Clifford England sent me several fruits from his orchard and nursery in Kentucky. Of the five fruit he sent me to sample, there were a total of only six seeds. Fruits were at least the size of **Juhl** or larger. Of all the American persimmon varieties I have

sampled, **MB-3** fruit tastes the most like an astringent oriental persimmon, and I would rate its taste as excellent.

Clifford England also sent me a few fruits of **Prok.** These fruits are somewhat larger than **Juhl** or any other named variety of American persimmons that I have ever seen. Seed of these fruit were also large in size.

Fall Coloration in a South Louisiana Orchard

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Jarreau, LA 70749-3119 (225) 627-5591

My orchard is located in USDA climate zone 8B. I grow several types of fruit, but mostly citrus and oriental persimmon. Some of my trees have ornamental value. The citrus are outstanding as to ornamental value, and oriental persimmons have value with their large leaves and colorful fruit. Few oriental persimmons have colorful leaves in the fall.

Several years ago I received a grafted tree mistakenly labeled as **Patapasco** persimmon. It seems likely to be a seedling of **Great Wall** from the University of Maryland breeding program.

Several decades ago, **Yamagaki** was used as a pollinator for **Great Wall** and **Giboshi** or **Smith's Best.** Several hundred seedlings were grown. Only several survived the Maryland winters. One was named as **Patapasco,** a seedling of **Giboshi** or **Smith's Best.**

Very few trees show fall coloration in the deep south. Some include selections of *pyrus calleryana*, sweet gum, and Chinese tallow. Most oriental persimmon show little if any fall coloration approaching dormancy. One that does is this unnamed seedling of oriental persimmon.

This seedling shows a bronzy-purple color of leaves in the fall. Fruits average about 3.0-3.5 ounces apiece. Fruit are firmer and have a thinner skin than **Great Wall** at ripening time. This seedling leafs and flowers much later than **Great Wall.** While **Great Wall** is very cold hardy, it has a tendency to leaf and flower rather early in the spring in comparison to other oriental persimmons. Growth habit of this seedling is less upright and more spreading than **Great Wall.**

The Eubank Cherry

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Menomonee Falls, WI 53051 paul@johnsonsnursery.com

About fifteen years ago I heard about a tart cherry found on an old home orchard near River Falls, Wisconsin, from my friend Mark Christopher. Mark took me over to a family orchard so I could see the cherry. The orchard was on the property of Bill Eubank and his family. Bill's father had a great passion for fruit and had started that orchard many years previous. The senior Mr. Eubank also had developed an apple that the family named **Chin Dripper**. When I viewed the orchard, the trees were quite old and dying out. The original **Chin Dripper** apple tree was in poor shape. Mark later collected scion wood on this apple to propagate some more trees for the Eubanks family so they would not lose this family variety.

We then proceeded on to the cherry I had heard so much about. The tree was old and most of it had died out, although it was still bearing fruit at that time. I was told that when the tree started declining from old age, numerous suckers arose around the base of the original tree. These suckers started producing a good quantity of cherries when only 3' tall! They are extremely precocious. The fruit is tart and very dark fleshed.

I heard that the fruit produced from these "suckers" was surprisingly superior to the fruit from the original tree! Since nobody knows what the original cherry variety is or where it came from, Mark surmises that perhaps the original tree was budded onto some type of seedling rootstock. If so, this may explain why it is possible for the rootstock to be producing fruit that is superior to the original variety budded onto it.

Mark and his wife Sue own and manage Maple Leaf Orchards near Spring Valley, Wisconsin. They grow numerous types of fruit for U-Pick, pre-picked, or to be processed. They have a large commercial kitchen and make jellies and pies to sell. Mark also sells at the farmers market in St. Paul, Minnesota.

For some time now Mark has been collecting these "suckers" and planting them in his garden. When they are large enough, he lines them out in his orchard. He grows many varieties of tart cherries **(Montmorency, Meteor, North Star, Balaton, Evans,** etc.).

When I visited this past July, I got to tour his cherry plantings just when harvest time was starting. While I was very impressed with the mildly tart flavor of **Balaton**, Mark insisted that his favorite is the **Eubank** cherry for many reasons. He finds it has the highest yield of any of the cherry varieties that he grows. It is hardy in zone 4, extremely precocious and easy to propagate. Mark has a loyal client base from the European community in St. Paul who seek out his black currant jelly. When they started buying his cherries, he found that after trial they preferred **Eubank**.

The only disadvantage of **Eubank** cherry is its propensity to continue suckering once lined out in the orchard. Mark doesn't mind as he digs out the suckers to plant in the garden for future trees. I wonder if **Eubank** would lose the suckering characteristic if budded onto a non-suckering rootstock? Currently this selection is being propagated only by digging up the root suckers and planting them back out.

High-Country Greenhouse

Melody Abbott 2135 Escalante Canyon Road Delta, CO 81416
High desert elevation 6800'; harsh and arid.

Hey! Howdy! And Hello!

Gosh! I am just bustin' with excitement, and you are the only folk that I can tell this stuff to: you know, plant people!

When my gardens start winterizing in September-October, I turn my growing dependence to the greenhouse. What I call the 'greenhouse' is a 12' x 60' glassed enclosure attached to the south wall of our stone house.

The enclosure is a passive-solar heated; it has air gaps, it is not high-quality glass and the growing beds are simply sandy alkaline soil, mixed with a little peat, shoveled from outdoors to indoors, to a depth of 2½" – 3"… And yet, I've been growing exotics and food that I'd never eaten before, nor had I seen such growth in plants. Wow!

The winter sun in the greenhouse runs around six hours, and only nine hours in the summer months. We sit within a bowl of canyon walls.

The winter daytime temperatures run between 70º and 80º. The winter night temperatures run around 55º, but when it is bitter cold outdoors, the temperature can drop to 45º, and yet I have never seen any harm to the Zone 10+ plants.

The greenhouse soon became an overstuffed jungle and I was forced to eliminate some plants, keeping the most useful and spectacular growers. Of the many figs, I kept the **Petite Negra,** which is now over 8' tall and starting to espalier across the ceiling. This fig is always in some stage of fruit production, and it doesn't burn from the heat of the ceiling glass.

The pomegranates are in fruit and flowers continuously; the commercial varieties like **Wonderful** never produced in the greenhouse, and the dwarf **Nana** pomegranates didn't produce very large fruits. So what I have ended up with is a **Granatum-nana-x;** their height is 6'-7', and the fruit is baseball sized thus far; it gets larger each season.

Two of my greatest victories this season (currently and ongoing) have been *passiflora incarnata*, maypop, and papaya. With the maypop, I read and tried everything to produce fruit; I allowed for a gazillion clones, both indoors and out; lots of flowers—no fruit! I was on the verge of eliminating the maypops inside; fat chance! Very aggressive; *passiflora herbertiana* resurrected itself, and while I didn't care for its fruit, I remembered that the *herbertiana* just showered pollen and it was self-fruiting.

So, by hand pollination and close proximity of the maypop and *herbertiana*, I now have *incarnata* passionfruit developing this cold winter. But, yee haw!

I have a *passiflora edulis* which is very productive and self-fruiting; I could not get the *edulis* to breed with the *incarnata*. The *edulis* does not release its pollen for spreading as do many other varieties of *passiflora*, and that is the same pollen scenario for my fruiting papaya.

So, is that a specific plant thing, where certain self-fruiters do not shed their pollen?

With the papayas, I grew ten varieties, including reds, and all of the plants grew wonderfully from seed. Some outgrew the greenhouse and were rejected, whereas others stayed nice and compact, under 8', and produced clouds of pollen, but never set any fruit.

From what I've read and didn't understand to the point of application, papayas are very specific for fruit production: male-female flowers, perfect flowers, bisexual flowers which differ from type to type.

Bisexual flowers seem to be the luck of the draw. The papaya I've kept is *Carica* **Solo,** and if one is lucky enough to get the right seed, it is one of the few papayas where only one unisex tree is needed to bear fruit.

At least, that is my basic understanding and experience of how such things work.

My **Solo** papaya is eighteen months from seed, now stands around 6', and is loaded with stages of maturing fruit and new flowers. This novice says, "Wow! Huh!"

Some other healthy and happy plants are olive trees, avocado, black peppercorns, and dwarf-super-dwarf **Cavendish** bananas. These plans have yet to produce fruit, but due to their health and growth, I encouraged to think they will reach their point of maturity and produce their fruit.

As a side note, let me say that after experimenting with known fruit producers, I took some large tree varieties such as mango, cashew and Tasmanian blue gum eucalyptus, and I have been growing them in ten- to fifteen-gallon plastic pots with the bottoms cut out. The pots sit on the soil of the main growing beds, allowing feeder roots to crawl around. Every three months or so, I rotate the pots, breaking the roots outside the pot. The result is large trees kept to a height of 7'-8', which have matured to the stage of fruit production. Wow! It has even worked with papaya, which have a long taproot kind of thing. The fruit is smaller when grown in pots, but, hey! It's fruit!

The winter months, October through February, have been the only season when aphids and whiteflies are apparent in the greenhouse. I found that Pyola-type products are effective against greenhouse pests, but I had to spray continuously, and I found that a lot of the exotic plants resented the buildup of oils from the sprays.

During early spring, I begin gathering ladybugs from my field to bring into the greenhouse, completely cleaning any aphid infestation I have not been able to control. The other day I put a 'slave' ladybug on an infested limb, and the sunlight was just right to where I could see the aphids moving like a herd in flight before the advancing ladybug. The aphids were bailing off the plant leaf and sprinkling the ground like raindrops. I had no idea that aphids were so cognizant.

I watch the ratio of good bugs to bad bugs, thus keeping track of the food availability. Even though the ladybugs feed well, breed, and produce bountiful larvae, they eventually disappear. Where do they go? Is it the diminished light of winter? Do ladybugs in warm climates have a cycle of dormancy?

I also started adding female-friendly spiders. Cute and non-aggressive towards me, the common cellar-spider and Daddy Long Legs are some of my best cleaners of whitefly in all stages. But the most recent discovery has been a common biting barnyard fly that followed some chicken manure into the greenhouse. Unlike my other beneficials, these flies stay active through the warmth of winter day; in fact, they will bite the heck out of a person during the sun of the afternoons. These captive flies are hungry, and feed on what is available: the winter's infestation of aphids, whitefly, and some scale that was brought in through a nursery plant. Even the *brugmansia* is perfectly clean, and, my gosh! That family of plants is a magnet for aphids. To actually see that these flies are keeping the plants clean is a wonder among wonders.

Please note: because I think it makes a difference, all my plants and trees—with the exceptions of bananas and figs—have been grown from seed.

Spring Beauty or Fairy Spuds

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There are many who say that we should not eat spring beauty because it is such a beautiful spring wildflower. They are right about one thing: it is quite pretty. But I'm not yet convinced that there is any merit in limiting my diet to ugly things. If that were the case, I wouldn't be foraging at all, as there is not a single wild plant that I find unattractive. And while I must admit that subjectively some plants really do please the eye more than others, spring beauty (no disrespect intended) is not near the top of my list.

Would this hands-off attitude be so widely espoused if the plant happened to go by a less elegant sobriquet, like hepatica, ramp, baneberry, or hagar? Certainly not. So why should we let the same bygone consortium of incompetent name-manglers who gave us such gems as bastard toadflax and lesser broomrape decide what we can and cannot eat?

In virtually every wild food book that covers this plant you will find an advisory not to harvest it "except where abundant" or "in times of desperate need" because it is "a beautiful wildflower." Quite frankly, I'm

sick and tired of this thoughtless copy-catting. I wholeheartedly agree that we need to employ sensible restraint while foraging, never forgetting ecological considerations and never threatening the populations of the plants we harvest; what I object to is the special and irrational treatment lavished upon one plant for no reason other than its name or its physical appearance.

One does not find warnings about overharvesting ramps in the wild food literature, yet ramps are long-lived ephemerals like spring beauty with almost identical ecology. The two plants have exactly the same habitat requirements in the eastern U.S. and Canada; where one is found the other almost always accompanies it. And while spring beauty is collected very rarely and I have never heard of problems caused by overharvest, ramps are among the most popular wild vegetables on the continent and have been exterminated from many woodlands by collectors. Ramps are no more prolific than spring beauty, but apparently they are simply too ugly for wild food authors to be concerned about.

Spring beauty is an abundant plant in much of eastern North America. In the woods where I live, if you blindly tossed a hula hoop, it would land encircling a spring beauty plant nearly every time. The plant abounds over millions of acres in Wisconsin alone, and it is not unusually common here. So give the gathering of spring beauty the same careful consideration you give to any other plant that is killed when harvested, but don't feel guilty about eating it.

Spring beauties are in the same family as several other edibles: purslane, bitterroot, and miner's lettuce. (A few botanists even classify miner's lettuce in the same genus.) The family resemblance shows in the leaves of spring beauty, which are soft, thick, and succulent. Most species have a single pair of leaves clasping the stem. Spring beauty flowers have five petals; they are white or pale pink with darker pink veins. About ½" to ¾" wide, the flowers are borne in loose clusters. The blossoms open only in sunshine and usually turn to face the sun. All spring beauties are small perennials, less than ten inches tall.

There are about a dozen species of spring beauty in North America, with most of that diversity in the West. All but one of these species has one pair of leaves growing opposite each other partway up the flower stalk. The western spring beauty *Claytonia lanceolata* grows in moist woods and openings in much of the Rockies; it produces lanceolate leaves that clasp

the stem. Sierra spring beauty *C. nevadensis* has a more limited range confined to moist alpine slopes of the Sierra Nevada. This species has round leaves on short stalks. *C. acutifolia* grows in Alaska, as does the tundra species *C. tuberosa*. The most distinct spring beauty is the alpine spring beauty *C. megarhiza*, which inhabits alpine meadows of the Rocky Mountains. It is unusual in that the plant has a rosette of rounded basal leaves as well as leaves upon the flower stalks. The two common spring beauties of the East are *C. virginica*, with narrow, grass-like leaves, and *C. caroliniana*, with lanceolate leaves. They are quite similar in appearance and both are commonly just called spring beauty. Refer to regional identification manuals to find out which species grow in your area, and if they are rare or protected.

Because I only have experience eating the two eastern species, the following discussion will focus on those two. While all the spring beauties are considered edible, readers will have to refer to other sources or their own experience to determine how the various kinds compare.

The Fairy Spud

Both *C. caroliniana* and *C. virginica* are spring ephemerals. That is, they begin growing almost instantly in the spring to take advantage of the sunlight reaching the forest floor before the trees cast their shade. When the buds on hardwood trees are just beginning to open, spring beauty is at its peak. Even before the trees' leaves have fully formed, the ephemerals begin to discolor and die; by early summer, no trace of spring beauty remains above ground. Thus the growing season for this dainty herb is a mere five to nine weeks. (Perhaps the perception that spring beauty is rare stems partly from the brevity of the time period during which it can be observed.)

The rest of the year this beauty sleeps in the soil in the form of a "fairy spud," which is a roundish, slightly flattened tuber ranging from ½" to 1½" inches across. The tuber looks like a dark puffed pita bread, but older specimens become more irregular in shape. This tuber is really the essence of what spring-beautyhood is; the stems and blossoms are but short-lived effusions from it. Each tuber sends up one or more stalks. Year by year, the tuber gets larger and sends up more stalks: some produce over a dozen.

Spring beauty tubers are usually located 2-4 inches below the surface of the soil. They can be dug rather easily with a small trowel or a digging

stick. Shovels work, too, but they turn over so much soil that it just gets in the way, so I stick to the smaller implements.

The harvesting of fairy spuds poses a conundrum. The tubers will be a little stiffer and more packed with starch both before and after their growing season, which is exactly when you usually cannot find them. Therefore, if it is practical, I dig mine up in early spring as soon as I can tell the plants are there, while they are still very small: or in early summer after the stems have dried and turned yellow, sending nutrients back into the tuber. In real life, however, it rarely works out like that. I usually end up getting my spring beauty tubers when the plants are in flower, because at that time it is easiest to notice the large colonies.

When collecting, look at the pattern of stems on the ground. After some experience, the seemingly random arrangement takes on meaning. A roughly circular or semi-circular clump of many stems suggests that a large tuber is somewhere in the middle of the ring. (All of those stems probable emanate from a single tuber.) A small tuft of three or four stems indicates a tuber of average size; while a carpet of seemingly unclumped stems denotes a colony of many small tubers with only one or two stems. The stems might extend for three or four inches underground, confusing things a little, but you will get the hang of it.

Try to take large and medium sized tubers and leave the small ones to grow; the small ones are not worth your time anyways. As with any other wild food, only harvest where the plants are well established and do so in a sustainable fashion. Adopt the attitude of a caretaker, thinning the patch like a gardener and replanting small tubers rather than simply discarding them. Do not overestimate the fecundity of woodland perennials (wild ginseng, once a common forest plant, has been extirpated in almost all of its range in North America.) Just because the spring beauty plants are abundant does not mean they can reproduce quickly; some of the large tubers are probably decades old.

I will be the first to admit that gathering spring beauty tubers is not very labor-efficient. Tom Elpel of Pony, Montana, claims that he harvests about one cup of western spring beauty tubers per hour. That sounds comparable to my experience, and from his photos the tubers appear similar in size to those that I find around here. This would most certainly sustain a lost person, and it is fun to do it a few times a year whether you

are lost or not, but I would not plan on putting up a big larder of these little guys.

That's a shame, because there aren't many better foods out there. Fairy spuds are potato-like and very mildly sweet. Just boiled they are wonderful—far superior to potatoes in my opinion. There are innumerable culinary possibilities for this vegetable. Unlike potatoes, these tubers are soft and pleasant raw as well.

You don't have to peel spring beauty tubers, but is relatively easy to do so (especially with the large ones) when they are raw or cooked. In fact, I know of no other tuber that slips its skin so readily. With the skins on, they taste a little earthy, but are still pretty good. With the skins removed, they really impress people. I usually peel mine because I have too much of the chef in me: I like things to be the best that they can be.

There is some disagreement in the botanical literature as to whether the underground portion of spring beauty is a tuber or a corm, with corm seeming to be the slightly more popular term. This confusion can only result from a misunderstanding of the meanings of the two terms or from a failure to actually examine the subterranean part of the spring beauty plant. So to set the record straight: The spring beauty tuber is most certainly **not** a corm; it is a tuber. Were it a corm, it would be an enlarged part of the upright stem, as with jack-in-the-pulpit or crocus. The upper stem would not easily detach from the enlarged base while growing. There is always *one* corm per stalk, because the corm is simply a part of the stalk, and the corm is almost always more or less centered on the stalk. (This is in fact how spring beauty "corms" are erroneously drawn in the Peterson Field Guide to Edible Wild Plants, but the real ones don't look like that.) Spring beauty tubers actually bear multiple stems at nodes along their perimeter. Corms, unlike tubers, also have a *root crown* under them, which spring beauty tubers lack.

I point this out because, if you dug for fairy spuds, and you knew what a corm was, you could become quite confounded, since the stalks almost always detach from the tuber before you find it, and the forest soil in spring beauty's habitat is usually shared with numerous bulbs, tubers, rhizomes, and corms which can be unearthed side by side. It is good to know what you are looking for.

The Fairy Greens

While not as well known as the tubers, the greens of spring beauty are likewise an excellent food source. They are mild in flavor, thick, juicy, slightly crisp, and not stringy. There is hardly a better wild salad plant, and the greens are excellent cooked as well. When speaking of the greens I am referring to the entire portion of the plant that grows above ground: stems, leaves, and flowers. Spring beauty greens remind me of the closely related purslane, only the flavor of spring beauty is not so tangy.

You can easily gather the greens without destroying the plant; just don't pick all of those from one clump or in one area. And be careful not to get dirt in your collection, as the plants often lie limp directly on the soil.

Spring Beauty in the West

It is an inescapable reality that wild foods are sparser in most of the West than they are in the East, as the region has, on average, less rainfall, less buildup of soil, and less production of biomass per acre. Spring beauties, lovers of moist, rich soils, are therefore spottier in their distribution in the western states. Foragers in these areas will have to study their local species and decide how much they can sustainably harvest, and if they are truly rare they should be left alone.

The alpine spring beauty *C. megarrhiza* is unique in having a large taproot rather than a tuber. This taproot was reported by Euell Gibbons to be quite large: about an inch thick at the top and up to a foot long. He considered the roots and leaves to be delicious. Unfortunately, this plant is confined to alpine areas and is rather uncommon.

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Marsh Marigold or Cowslip: Nature's First Green is Gold

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In the Northern United States, winter holds stubbornly to its grasp over the land. Though the snow may melt after a few warm days in March or April, the frost in the ground cannot always be dispelled so lightly. It may take several more days, and often the aid of a shower, to set the soil free for the coming spring. As all who follow the cycle of the seasons in the wild know, that first melt and those first promising warm days are always cut short of releasing spring's splendor by a sudden return of frost. It is like the teasing peek of sunshine on an overcast afternoon. Another week or two or three of winter ensues, so that when the real thaw comes, we thank heavens and know that we deserve it.

Robins are untrustworthy harbingers of spring. A few even show up in the coldest months, plucking rose hips, chokeberries, black haws, frozen thornapples, and shriveled grapes as if these are the cause for their overpunctuality. Peepers are the true proclaimers of the word of the Sun; when they sing, even from ice-bottomed pools, winter is defeated – though he may still cast a frustrated blow in retreat.

But they are the loudest, not the bravest. At least one night in advance of the peepers' first broken chorus, an inconspicuous army of blue-spotted salamanders will have emerged from its winter lairs and crawled slowly through frigid darkness to the same ponds. Yet as much as I admire these frail amphibians for mounting snowbanks and belly-crawling over sheets of ice, I must concede that many plants still have them beat – with a little help, of course.

Around springs, where the groundwater keeps all but the top layer of mud from freezing, a whole guild of herbs will be doing their thing long before any animal dares the disappointment of thinking about spring. Even under a crust of snow, ever so slowly, skunk cabbage will begin to push its flower spathes up through the muck, generating heat from the starch stored in its large root. Stinging nettles, purple and rough, provide a tiny but much appreciated potherb. Dock and swamp saxifrage leaves, also purple, spread flat over the loose soil. And those of marsh marigold, paper-thin

and glossy, curl up and huddle together above their mother-root in anxious patience. To the forager, these first greens are more precious than gems.

Finding and Identifying Marsh Marigold

As its name implies, this plant is an inhabitant of wet ground. It is generally found in shade or partial shade, and only rarely in full sun. Across the northeastern U.S. and almost all the wooded regions of Canada and Alaska, marsh marigold *Caltha palustris* is available to foragers. Where I live, and through much of its range, it is remarkably abundant. I have seen ash and alder swamps of many acres that looked like wildflower gardens, just brimming with the plant. Closer to home, we have scattered cowslip plants along every rill and drainage through the woods, and fairly large colonies around every swamp, spring, and pond.

A closely related marsh marigold *Caltha leptosepala* is found in wet areas of mountain forests of the West. I have never eaten this species. H.D. Harrington often ate the flower buds and young leaves of this western species raw, in salads mixed with other greens, or cooked as a potherb. In appearance, this herb is very similar to its eastern relative. A third species with white flowers, *C. natans*, grows in boreal forests of the north; I have found no reports of its edibility. Consult a field guide for identification of these species.

Caltha palustris is a distinct plant, quite easy to learn to recognize. It consists of numerous leaves rising on long stalks from the base of the plant and one or a few short, branching flower stalks. The basal leaves, when mature, are ruffled and can grow quite large – up to the size of my hand. At the time when they are gathered and the plants are in bloom, however, most leaves are one to three inches wide. As one moves up the flower stalk, the leaf stems get progressively shorter and the leaves smaller; the topmost leaf clasps the stalk with no stem at all. Cowslip leaves are very lightly toothed and kidney-shaped or round with a deep "cut out" where the stem attaches. They are very delicate and glossy when young.

The flower of this plant is well known and much appreciated as one of the first showy wildflowers of spring. Bright yellow and an inch or more across, cowslip blossoms look like giant, full-figured buttercups (to which they are related). They have 5-9 sepals that look like petals. The flowers are displayed in loose clusters.

Once you've identified marsh marigold in flower, you'll probably be able to spot it at any time of the growing season. This is good, for it is best

when harvested before it blooms. This plant really has no look-alikes, although some violets have a similar leaf shape.

Cowslip does often grow side by side with the common and potently toxic water hemlock. Other than being green, the two plants look nothing alike, but a careless forager who haphazardly mixed some of the latter herb with her cowslip greens could end up with very sad relatives. But hey, we're not careless, so don't sweat it.

Collecting and Cooking

Cowslip, as previously mentioned, is an early spring plant. While at certain sites one finds small leaves as soon as the snow melts, or even under it, more often the greens are unavailable until the ground thaws and spring is truly under way. Around here, that is generally early to mid April.

I prefer to gather marsh marigold when the plants are three to seven inches high, before any flowers have opened. I gather basal leaves as well as the stalks; the latter have small leaves and flower buds near the top, which are my favorite part. The cowslip greens are simply pinched off with my thumbnail. At this time both the main stalks and the petioles (leaf stalks) are tender and easily broken. The stalks often have a dirty, papery sheath that I remove. Marsh marigold leaves shring considerably when they are cooked, so keep this in mind as you gather them.

Later in the season, when the marsh marigold is in bloom, I am much more selective in my harvest, taking only the smaller, softer leaves. (Of course, under no circumstances should you strip all of the leaves or stems from a single plant.) By the time the cowslips are done flowering, I am done harvesting them for the year.

Cowslip greens probably should not be eaten raw. Numerous texts claim that the plant contains a poisonous constituent that is dispelled by boiling – yet none that I know of actually identify this chemical. I believe the claim largely because the raw greens taste terribly acrid; on account of flavor alone I would not eat them. However, I know of people who have consumed small quantities of both *C. palustris* and *C. leptosepala* raw and suffered no apparent ill effect, so the purported toxin is apparently rather mild.

The tried and true method for preparing cowslip as a potherb is to boil it, discard the cooking water, and eat the greens. Many people change the water one or more times, as each change gives the greens a milder flavor. I

use three waters, letting the final one boil for twenty to thirty minutes before draining and serving. When prepared this way, they are mild in flavor and very soft in texture, forming a dark green mass after the water is drained. I jokingly called this stuff "green pudding" once when serving the dish, and the name has stuck. I eat my green pudding with a little salt and sometimes butter; many people like it with cream or gravy. I prefer the flavor of flower buds mixed with leaves to that of leaves alone.

Several authors tell of pickling the flower buds like capers, after twice boiling and discarding the water. I've never tried this, so I can't really comment on it, but it sounds like a worthwhile preparation.

With cowslip being so abundant and easy to recognize, and offering itself as a potherb a month or more before the earliest of garden produce, it is no surprise that this plant has been such a popular wild green. This spring, why not let the marsh marigold serve you with more than just its golden beauty?

******PESTS******

Chestnut Pests Bugging Some NAFEX Members!

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Since becoming the NAFEX chestnut chairperson, I have received enough delightful, informative correspondence from fellow NAFEXers to make my head spin. There are several recurring themes in these communications, one of which is insect pest problems. The most common pest question, and I quote, is a variation on "how to get the little devils when they are most vulnerable."

From what I gather, public chestnut enemy number one, as far as NAFEXers are concerned, is the chestnut weevil. Weevils, as many of us have come to know, are pests that lay their eggs in the developing chestnut kernels while they are still on the tree. These weevils cause two main types of damage:

1. adults can cause the nuts to drop from the tree prematurely
2. their larvae (grubs) feed on the mature nut kernels, usually before we have a chance to.

According to the University of Kentucky Entomology Department, there are two main types of chestnut weevils: the lesser chestnut weevil and the larger chestnut weevil. Both of have similar life cycles: they hatch inside a chestnut kernel, feed on it for a few weeks and, if all goes well, they grow strong enough to chew their way out of the kernel. Then, they burrow into the ground surrounding the chestnut tree, where they will remain for one to three years while they pupate and turn into adults. Finally, they start the cycle over again by laying their eggs inside a young chestnut kernel.

Some NAFEXers have gotten so discouraged and disgusted by the weevils that they are on the verge of giving up the fight against them. One Virginia NAFEXer laments "if the trees aren't sprayed, [the weevils] bring all their friends along by the thousands." As this statement implies, we do have effective management strategies, both chemical (i.e., sprays) and cultural (i.e., picking fallen nuts up promptly) that we can use to reduce our weevil woes.

As far as spraying the trees goes, only one insecticide, Sevin (carbaryl), is labeled for use against chestnut weevils on chestnut trees and it should be sprayed only during the time period in which the shells are hardening around the kernels, which is also the time the larvae are feeding on the nuts. However, unless you have a very severe infestation—this is determined by monitoring the trees for adult weevils and weevil damage during the late summer months—you can get excellent results from non-chemical methods of weevil and weevil damage control.

According to the U. of Kentucky, one sprayless means to combat adult weevils is to put a sheet under your tree and, using a pole to jar the limbs, shake them out of the tree. They will fall onto the sheet and be stunned for a moment, during which you can, presumably, stomp them. The slower-footed among us may prefer to use some of the other suggested control methods: collecting fallen nuts promptly so that larvae don't have a chance to make it into the ground and heating (140ºF for 30 minutes) or freezing the nuts as soon as they are gathered in order to stop the larvae from damaging them. One NAFEXer cautions that heating the nuts causes them to spoil very quickly after their heat treatment—so, after heating them, make sure to get them into the refrigerator and eat them up pronto!

My chestnut trees are still too young to bear nuts, so I don't have any weevil problems. However, I still have plenty of gripes about insect

damage to my chestnut seedlings. A year and a half ago, I planted 60 American chestnut seedlings that had been sprouted from blight-resistant chestnuts gathered by the American Chestnut Cooperator's Foundation in Virginia. About 28 of those seedlings are still alive. What killed the others? Well, it wasn't chestnut blight or any of the many, many deer that roam our property (our seedlings are fenced with electric fence that is powered by a really good charger). The culprits were grasshoppers, zillions of them, feeding on my tree's leaves and bark!

If you have any chestnut chat to share with me, please write to me at the above address. You can also read all about me and my farm and e-mail me at my website, www.bluehorizonfarm.com

To learn more about weevils and their management:

This University of Kentucky Entomology Department article has lots of detailed information about weevils and their lifecycle:

http://www.uky.edu/Ag/Entomology/entfacts/fruit/ef206.htm

This North Carolina State University site has information about the control of various chestnut pests:

http://www.ces.ncsu.edu/depts/ent/notes/Fruits/fruitc1.html

Controlling Cane Borer in Bramble

Jim Fruth jfruth@uslink.net

A major portion of my income revolves around growing bramble, *rubus* species. My biggest enemy has been the raspberry cane borer and I finally learned how to control it. Cane borers have the dastardly habit of maintaining a low profile. It never seemed as though I had a problem with them until just before the berries started ripening. Then several at a time would shrivel and dry up; within a week the whole cane withered. The literature says there are two species of cane borers, the raspberry cane borer and the red-necked cane borer, and both are known to attack roses as well as bramble.

I first noticed cane borer problems while I neared the end of developing the **Pequot Black Raspberry,** a variety I developed to thrive in USDA zone 3. After a few years I learned that the borers were infecting red raspberry canes too but that problem was insignificant enough

to go unnoticed. I noticed the problem in my black raspberries first because I worked with them nearly every day.

A call to the Minnesota Extension Service produced zero results because it seems that too few black raspberries are grown in Minnesota so nothing is known about them. The internet revealed pertinent information about the pests but no solutions for controlling them. All I found was the recommendation to not be concerned if less than 10% of canes are infected—my canes were approaching 60% infection and I was close to panic! Internet articles also mentioned that no insecticide was recommended for the job. From out-of-state universities I did receive suggestions of techniques to try, but nothing worked. Then a fellow researcher suggested I try sanitation as a method.

Eggs are laid in growing primocanes and they hatch in just a few days. When a larvae hatches, the first thing it does is girdle the cane. The cane immediately wilts slightly. The reason I failed to notice this wilting as larva- connected is because primocanes wilt anyway when they are growing rapidly on a hot day. This wilting persists for a few days while the cane repairs itself. Thereafter, it grows normally, except at the point of infection where it swells. These swellings become obvious after the leaves drop and comparisons with uninfected canes can be made. These swellings can be no more obvious than the swelling at a node except that the cane borer's swelling usually circumvents the cane. Cane borers infect growing canes only during late spring and late summer. Cloned plants arising from tip-rooting are never affected.

Once I knew what I was looking for, I crawled hands and knees up and down each row once per week or oftener. Every time I encountered a drooping, wilted cane, I inspected its base. If the wilting was caused by a cane borer, there was usually a brown spot (the point of entry for egg laying) a few inches below the arch of the wilt. Sometimes there was no brown dot but there was always a faint brown line circumventing the cane. Whenever I see one, I prune the cane below the point of infection. The prunings get put in the garbage and the cane regrows from a node below the point of pruning.

I start pruning my black raspberries in mid-October. While I prune, I look for cane swellings near the base and I always find a few. Those canes get clipped and the infected part goes in the garbage—I shred uninfected canes for mulch around fruit trees.

I've been able to trace back to the source(s) of cane borer infection(s). The literature said I should inspect wild bramble growing nearby—I did, finding no infections—wild types seem resistant. I received my cane borer infections from two sources:

1. from red raspberry plants I received from a friend back in the days when I didn't know what a cane borer was.
2. I'm 80% sure I received an infection from new plants received from a mail-order nursery. I came to this conclusion only because this second infection was isolated from all others and the new planting was more infected than any plants around it.

Brambles that I grow include black raspberry, summer red raspberry, fall-bearing red raspberry, boysenberry, blackberry, ground cover raspberry *(rubus triflorus)* and wild roses. Cane borers have not infected *R. triflorus*, and have only slightly infected wild roses and most varieties of summer red raspberries. Where summer red raspberries were infected, cane swellings have rarely been noticed higher up than within the first 3" from the ground with occasional swellings found right at ground level. In black raspberries, sites of infection have all been within the first 12" from the ground and always above the ground (or mulch) line. In blackberry and boysenberry, two swellings on the same cane are common, with some as high above the ground as 24"

If a chemical were available for controlling cane borers, life would be simpler. Spraying would certainly take less time than crawling on hands and knees looking for infection sites. Realistically, though, I don't think a chemical will ever be recommended for the task because the best time to spray for the bugs is immediately before berries ripen and harvesting begins.

What to Do with All That Fruit!

I received a very kind letter from NAFEX member regarding a recipe I printed in the Fall 2006 *Pomona*. "The recipe for Applesauce-Oatmeal Muffins mystified me," Ralph Roseberg wrote. "Perhaps I am missing something, but I would have expected applesauce and oatmeal to be ingredients in the muffins."

Well I surely messed up the printing of that recipe. For any of the rest of you who may have been mystified by that oddly named set of ingredients, here is the correct recipe. They really are very good, when the recipe is done right!

Applesauce-Oatmeal Muffins

Soak together overnight 1 c. rolled oats and 1 c. applesauce, warmed.

Preheat oven to 400º. Add to oatmeal mixture 1/3 c. oil, ½ c. brown sugar, 1 egg, mix. Stir in 1 c. flour, 1 t. baking powder, ½ t. soda, 1 t. salt, ¾ t. cinnamon. Mix. Fill greased muffin tins 2/3 full, sprinkle tops with cinnamon/sugar. Bake for 20-25 minutes. (12 muffins)

Library News

NAFEX Library, John Hillbrand, PO Box 296, Fayetteville, AR 72702
jhillbrand@hotmail.com, phone 479-422-7322

You may obtain the following back issues of POMONA from the Library for $3.00 for one issue and $2.00 for each additional issue: 15-1, 21-2, 21-4, 22-1, 22-2, 22-3, 22-4, 23-3, 23-4, 24-1, 24-3, 25-1, 26-2, 26-3, 26-4, 27-1, 27-2, 27-3, 27-4, 28-1, 28-2, 28-4, 29-2, 30-3, 30-4, 31-2, 33-3, 33-4.. As a package deal, I will send 30 back issues for $40.00 (those just listed plus used copies to make up 30). For a list of other available used back issues (as well as surplus fruit books for sale), send a stamped envelope. In addition, we have POMONA IN REVIEW, volumes 1, and 2, available for $3.00 each; these reviews contain the articles from the first two years of POMONA. You can also purchase a POMONA index from 1967-82 or an index from 1983-89 for $2.50 each.

If you want to borrow from the library, send proof of NAFEX membership, such as a POMONA label showing membership expiration date, along with your name and address, the loan fee, and a list of the items you wish to borrow. Tell me what to do if other members have borrowed your choices—do you have alternate choices, or shall I wait? If you don't tell me, I wait. Send $3.00 to borrow three books, $2.50 to borrow two, $2.00 to borrow one, $4.00 to borrow a videotape, and $2.00 to borrow four back issues of POMONA. Canadian members should send $20.00 U.

S. funds; I will credit or refund money left over after shipping costs. Write if you have special library needs or have items to donate.

We have the following new item available for loan:

Gregory M Levin, **Pomegranate Roads: A Soviet Botanist's Exile From Eden**, 2006, 183 pages. Dr Levin has supplied propagating material now shared among members of the Southern Fruit Fellowship. The book contains information on his 40 years of collecting and preserving pomegranates from all over the world.

Pomegranates, Pomegranates!

Richard Ashton, Chairman NAFEX Pomegranate Group
Oak Creek Orchard
www.oakcreekorchard.com bwoodtx@verizon.net

We have two books coming out about pomegranates. One by Dr. Levin (a soviet scientist) called plainly *Pomegranate* and the other by myself and two other people called *The Incredible Pomegranate*. They both relate to the growing and culture of pomegranates, one being a scientific book and the other being for the average gardener.

QuickTime™ and a
TIFF (LZW) decompressor
are needed to see this picture.

NAFEX Fruit & Nut Interest Groups

Lon Rombough PO Box 365 Aurora, OR 97002-0365.
Phone (503) 678-1410. E-mail: lonrom@hevanet.com

Hi, Everyone:

This is the old coordinator of the NAFEX Interest groups with a couple of thoughts for all the groups. First, some of the lists have been rather quiet. In some cases, I suspect it's because many of you don't know who is on the list. It would be a good idea if each member of each list—at least those who are on the internet lists—would introduce himself/herself briefly and at least mention some of the varieties they are growing, along with any interesting items about the varieties and this (or any) growing year. If you know who is out there, you at least know who is reading your mail.

Secondly, you can help your group chairman out by sending something, by email or regular mail, to the list that he/she can put into a report for *Pomona*. In some cases, some of your groups haven't had a report in *Pomona* for a LOOOOONG time, if ever. Have pity on the non-computer users and let them know what you are up to by sending the stuff to be collected and published.

Finally, if you think there should be another group, for something not covered in the online groups (Rubus, Ribes, Pears, Northern Plums, Juglans, Eleagnus, Apricots, Apples, and Amelanchier), contact me and we can get a new group set up. Thanks for all your participation.

The Fruit and Nut Interest Groups have been around since the start of NAFEX. In one sense, they were the way NAFEX started. Essentially they are groups of people within NAFEX who have especially strong interests in certain fruits. In the past the groups were called Test Groups because their main activity was to grow and test varieties of the specific fruit. Now the concept has been expanded to allow members to do pretty much anything that adds to the knowledge of that fruit—testing varieties, breeding new ones, locating antique ones, literature search, etc.

There are e-Interest groups for only some of the fruits because not all groups are active enough or have computer-using members to make it feasible. The old way was to send out round-robin letters, so that each person added something and sent the letter on to the next person in the

group. When it got back to the chairman, it was usually edited and turned into a report for *Pomona*. The e-groups serve the same function, only faster, and the chairman can collect material from the group archives (hopefully) to report to *Pomona*.

To receive a regular mail reply, correspondence must include a self-addressed, stamped envelope. Interest groups allow members to participate directly in NAFEX through sharing experiences and interests with others of like mind. In turn, IGs share with NAFEX through *Pomona*. Share your experiences, reading and research. Groups work on variety exploration, cultural methods, collecting and testing varieties, breeding, variety history, or anything else connected with fruit and nut growing. You can make a single contribution to a group or be a long-term member. To ask a question, join a group, or just share something, contact the chairperson of a group. Join as many as you like.

People interested in chairing or starting new IGs should contact the Interest Groups Coordinator. It is an excellent way to learn about the fruit or nut involved, and it takes only enthusiasm and a bit of time.

Please send all additions or corrections to: Interest Groups Coordinator, Lon J. Rombough, PO Box 365, Aurora, OR 97002-0365. Phone (503) 678-1410. E-mail: <lonrom@hevanet.com>

APPLE: CHAIR—Richard Fahey, c/o The Catholic Homesteading Movement, 21 Delaware Square, Norwich, NY 13815-A. No phone. NORTHERN PLAINS CHAIR—Don Birkholz, Rt. 89, Broadus, MT 59317.

APRICOT: CHAIR—Bob Purvis, 7300 Iden Ave. South, Cottage Grove, MN 55016, (651)-769-8473, 5:30-10:30 p.m. CST weekdays, all day Sat. and Sun. rpurvis@nass.usda.gov

CHERRY: CHAIR: Robert A. "Bob" Norton, PO Box 13554, Burton, WA 98013, mauryapples@juno.com

CHESTNUT: Tammy Biondi, 430 Otis Johnson Rd., Pittsboro NC 27312: teefisch@yahoo.com.

CITRUS, HARDY: CHAIR—Dr. Alfred R. Loeblich III, Dept. of Biology, University of Houston, Houston, TX 77204-5513.

CONSULTANT—Donna Hudson, PO Box 1298, Cookeville, TN 38503. (931) 526-7344. Leave a message, we will call back; we are hard to catch. redherring@tnaccess.com

CRATAEGUS (Mayhaws, Hawthorns): SOUTH: John Harrington, 4794 Scales Lane, Orange, TX 77630. (409) 735-7355 jwhfaye@ih2000.net NORTH: OPEN

ELEAGNACEAE (Autumn Olive, Goumi, Sea Buckthorn): CHAIR—Hector Black, 170 Hidden Springs Lane, Cookeville, TN 38501. (931) 268-9889, 6 AM - 7 AM and after 6 PM central time. hblack1925@fastmail.fm

FIGS: CHAIR—Raymond U. Givan, 2412 Lowground Rd., Guyton, GA 31312. (912) 728-4028, 9 AM - 3 PM, M-Th and 1 - 4 PM Saturdays. No Sunday calls, please. thegivans@planters.net Website URL : http://web.infoave.net/~thegivans

CONSULTANT—Dr. A. J. Bullard, 307 W. Henderson St., Mt. Olive, NC 28365-1999. (919) 658-4424.

GRAPES, MUSCADINE: CHAIR—Marvin Lewis III, Rt. 1, Box 1705, Converse, LA 71419. (318) 567-3240. atlantis0077@hotmail.com

HONEYLOCUST *(Gleditsia triacanthos):* CHAIR—Andy Wilson, Springtree Agroforestry Project, 268 Springtree Lane, Scottsville, VA 24590 (434) 286-3466 (evenings are best) awilson@pvcc.edu

JUJUBE: CHAIR—Roger Meyer, 16531 Mt. Shelly, Fountain Valley, CA 92708. (714) 839-0796 evenings. exoticfruit@95net.com

CONSULTANT—Paul Lyrene, Fruit Crops Department, 1143 HSPP, Gainesville, FL 32611. (904) 392-4711 pml@GNV.IFAS.UFL.EDU

KIWIFRUIT *(Actinidia* species): Bob Guthrie, 1810 Alameda Street, Roseville, MN 55113, bobguthrie@comcast.net (651) 488-7122 By telephone, 7 to 9 (central time) evenings are likely the best time to reach me, though with my schedule, e-mail is probably a more consistent means for communication.

PAWPAW: CHAIR—Dr. Kirk W. Pomper, Kentucky State University, 129 Atwood Research Facility, Frankfort, KY 40601. The best time for people to contact me with pawpaw questions is from 9-11 AM. Phone (502)227-5942 Fax (502) 227-6381. kpomper@gwmail.kysu.edu

PEAR: SOUTHERN CHAIR—Travis J. Callahan, 11403 Wesley Road Abbeville, LA 70510 teejcee@cox.net (337) 893-9134; http://www.geocities.com/ccduster/page3.htm

NORTHERN CHAIR—David Sliwa, 2682 Lannon Hill Rd., Decorah, IA 52101. (516) 382-3922. ddsliwa@gmail.com

PERSIMMON, AMERICAN: Jerry Lehman 7780 Persimmon St. Terre Haute, IN 47802-4994. (812) 298-TREE JWLehman@aol.com

PERSIMMON, KAKI or ASIAN: CHAIR—James Beimel, PO Box 202, Clinton, MS 39827-4754. JBeimel416@aol.com REGIONAL CO-CHAIR—R. Lamon Ready, 526 Ready Lane, Cairo, GA 39827-4754; lamonready@hotmail.com (229) 377-5111.

PLUM: NORTHERN CHAIR—John Bunker, 167 Turner Mill Pond Rd., Palermo, ME 04354. jbunker@gwi.net (207) 993-2837. Letters or email preferred. SOUTHERN CHAIR—David Ulmer, 7157 Camellia Lane, Sebastopol, CA 95472. (707) 824-1650; davidu9999@covad.net

POMEGRANATE: Chairman, Richard Ashton, 701 Home St., Brownwood, TX 76801 (325) 646-6857 (best time to call 6:30-9:00 pm) bwoodtx@verizon.net

RIBES (Currants and gooseberries): CHAIR—Ed Mashburn, 707 Front St., Northumberland, PA 17857. (570) 473-9910. Ribes60@aol.com Web: www.currants.com

RUBUS (Raspberries and blackberries): CHAIR—Peter H. Tallman, 5690 Steeplechase Dr., Longmont, CO 80503. (303) 684-9404 pete_tallman@hotmail.com SOUTHERN CHAIR—Roy Mercer, 1434 Somervell CR314, Cleburne, TX 76031.

WALNUT (Butternut, heartnut, English walnut, etc.): OPEN

SPECIAL CONSULTANTS

ACORN (Sweet or edible): Ken Asmus, PO Box 19425, Kalamazoo, MI 49019-0425. (616) 624-6233, 7 PM - 9 PM. oak24@aol.com

AMELANCHIER: Wayne Fuhr, 12826 126 St., Edmonton, AB T5L 0Y1 Canada. (403) 452-8054. fuhrwe@telus.net

GRAPES: Lon J. Rombough, PO Box 365, Aurora, OR 97002-0365. (503) 678-1410. lonrom@hevanet.com

HONEYBEES: Ray Lackey, 1260 Walnut Ave., Bohemia NY 11716-2176. (631) 567-1936 between 8 - 10:30 PM; lackeyray@tianca.com http://www.tianca.com/tianca2.html

MULBERRY: SOUTHERN—A. J. Bullard, 307 W. Henderson St., Mt. Olive, NC 28365. (919) 658-4424. NORTHERN—Lewis E. Ward, 246 Smith Rd., Newfield, NY 14867-9707. (607) 564-7506, weekdays 9 AM - 8:30 PM eastern time.

PEACH AND NECTARINE: Don Birkholz, Rt. 89, Broadus, MT 59317. SOUTHERN—Lloyd Williams, 8197 Hwy. 155, Montevallo, AL 35115.

QUINCE: Lester H. Davis, 1644 Lokey Dr., Columbus, GA 31904 (706) 323-0857. Best after 9:30 PM eastern time. Lhdavis8@cs.com

STRAWBERRIES: Brian Smith, Dept. of Plant and Earth Sciences, UW-River Falls, River Falls, WI 54022. Office: (715) 425-3851; home: (715) 425-2131. <brian.r.smith@uwrf.edu>

WALNUT, BLACK *(Juglans nigra):* A. W. Heiman, Jr., 717 Ernie-Lu Ave., Anderson, IN 46013. (765) 643-4582 billheiman@skyenet.net

BEES FOR POLLINATION: David Kuchta, RD 1, Tippets Rd., Rt. 54, Nesquehoning, PA 18240. (570) 645-3652; humblebe@intergrafix.net

CANADIAN SOURCES: Canadian Sources: Kim Maser, 9 Garnet Cr., Sherwood Park, AB, CANADA T8A-2R7. (780) 416-7662 evenings between 6 -9 pm MST kimk_maser@yahoo.ca

GRAFTING AND BUDDING: Steve Burt, 19316 Brandt, Roseville, MI 48066. oldhoneyman@sbcglobal.net

POTTED CULTURE: Lee Reich, 387 Springtown Rd., New Paltz, NY 12561. (914) 255-0417, early morning eastern time best. springtown@netstep.net

WINTER HARDINESS: William MacKently, 325 State Hwy 345, Potsdam, NY 13676. (315) 265-6739; trees@sln.potsdam.ny.us Phone calls preferred to letters.

CENTRAL ASIAN CONSULTANT: Dr. Chiranjit Parmar, 186/3 Jail Road, Mandi HP 175001 INDIA Phone: 01905-222810 Fax: 01905-221071, parmarch@sancharnet.in, www.lesserknownindianplants.com

PERMACULTURE: Dan Hemenway, Barking Frogs Permaculture Center, PO Box 52, Sparr, FL 32192. BarkingFrogsPC@aol.com

Exchange Page: Scions, Seeds, Supplies

One exchange page notice of approximately fifty words will be accepted per member per quarter. These ads are accepted as a service to our members without charge and NAFEX accepts no responsibility for the authenticity of information given. Please assume the responsibility of answering all inquiries when a SASE is included, even if you are out of the

material offered. Please try several sources for readily available material before submitting a "wanted" ad. When asking for seed of fruit trees, do not expect the seedling to be identical to its parent. Ads cannot be taken by telephone, but email is great. Do not ask for or offer scions of patented cultivars. A general fee of $1 per stick of scion wood, postpaid, has been set, unless otherwise stated. Send your offering or request to the Editor-in-Chief, jakuehn@verizon.net or Jackie Kuehn, PO Box 29, Lucernemines, PA 15754.

PAID ADS offering plant material, horticultural supplies, and publications that should be of interest to a large segment of the membership will be accepted. Paid ads are approximately one-half page (3 ½" x 5") for $50 or a full page (7" x 5") for $85. Send your copy along with a check made out to NAFEX to the Editor-in-Chief.

WANTED

Pomona Back Issue: We are missing a back issue of *Pomona*, and would like to have it for our library. The issue missing is Vol. 37 #3, Summer 2004. If you have the issue, and are willing to part with it, kindly contact Gillian Hayward at 610-388-1000 x544, or ghayward@longwoodgardens.org

Seed for fruiting trees/bushes/vines, etc.: We are setting up a permaculture educational research/ demonstration property in the Pacific northwest, zone 8. We are looking for seed of fruiting trees, bushes, vines, etc.; we will pay postage and small fee. Please contact James Henderson, PO Box 197, Joyce, WA 98343. jameshendo@yahoo.com.au

Fig question: Having spent time in Italy this summer during the heart of fig season, I am deeply interested in finding some cultivars that will survive my chilly Zone 4b/5a climate. Any ideas out there? I've got a wonderful wind-sheltered stone-surrounded microclimate that should help things a little... but I need help to choose the right fig! Ethan C. Roland, eroland@gmail.com AppleSeed Permaculture, PO Box 510 Nassau, NY 12123.

Mulberries: I'm developing a list of currently-available mulberries. If you are a nursery owner (small or large) or an active fruit enthusiast with

mulberries, please send me a list of your varieties. I'm particular interested in northern varieties, i.e., hardy in USDA Zone 7 and colder. Any information such as color, size, tartness, bearing period, species, etc., would be appreciated. Contact

Lew Ward, Mulberry Consultant-Northern
246 Smith Rd.,
Newfield, New York 14867-9610
(607) 564-7506
lew_ward@yahoo.com

Seeking August budwood of the apples **Hawkeye, Hewes** crab; also UK varieties **Hambly's Seedling** and **Hannan's Seedling**. Also looking to purchase a large supply of **Kingston Black** August budwood, preferably a Canadian sources. Please reply to Eric at mail@siloamorchards.com (Canada).

AVAILABLE:

Super hardy, Pequot Black Raspberry for zone 3. Bare root. $2.00 ea. + $5.00 or 20% (whichever is more) for shipping; I refund any overage. Jim Fruth, Brambleberry Farm, 4002 Davis Street, Pequot Lakes, MN 56472 jfruth@tds.net No shipments after April 30.

Dwarf Super Hardy English seednuts, 12 ea. for $10.00 (extra large). Extra strong semi-dwarf almonds (this tree survived -25º F.), 20 seeds $4.00. Pecans grown on same tree 20 seeds $4.00, **Osage** and **Pawnee** ¾* 1.5", **Gibson, Mullihay**. All orders postpaid in US. For more information, contact Garfield Shults, 1526 Hill Rd., Homedale, ID 83628 (208) 337-4121.

American persimmon: Will pay for scionwood of the older (possibly lost) American persimmon cultivars listed below. Contacts for individuals with information would also be welcome. Please contact John Raymond, 10390 Martin G. Ct., Webberville, MI 48892. (517) 223-7714. jwraymon@yahoo.com

Blagg: Introduced from Mt. Vernon, IL by Lee Dennis. 1961 winner of Mitchell Persimmon Festival. Ripens beginning in late August. Fruits have flattened shape, up to 2" in diameter with red blush.

Elder: Introduced from Lima, IL. Fruit is medium sized and early ripening.

Golden Gem: Introduced from Borden (Clark county), IN by Logan Martin in the 1860s. Fruit is medium to large, oblong in shape, dark orange to red. Ripens from late August to October.

Hicks (also called **Superior**): Introduced from Washington county, IN by E. Hicks Trueblood. Fruit is medium to large, roundish to oblate.

Josephine (also called **Honey**): Introduced from Bluffton, MO by S. Miller. Fruit is up to 2" in diameter and starts ripening in September.

Waterloo: Discovered in Waterloo State Forest near Athens, OH. Reported to be large and early.

Scionwood of 300 apples, also pears, plums, etc. Send a long SASE for a listing to The Catholic Homesteading Movement, Oxford, NY 13830A

Historic, disease resistant, and cider apples for Canada, excluding BC. Visit www.siloamorchards.com for listing and fruit tree grower information. Or contact Eric Hambly, Siloam Orchards, RR#1 Uxbridge Ontario Canada L9P-1R1. Email at mail@siloamorchards.com (905) 852-9418.

Apple bench grafts available at theapplebranch.com or email to applebranch@sbcglobal.net or send SASE to Apple Branch, P.O. Box 281, Portland, MI 48875 for a listing of available varieties.

Pawpaw, jujube: pawpaw seed from seedling trees of named pawpaws 20/$4.00. Jujube seed from seedling trees growing in zone 6b crossed with named trees 25/$4.00. Seeds stratified and sent early spring. Contact Frank Henny, 229 Reaville Rd., Flemington, NJ 08822.

AVAILABLE BOOKS & OTHER RESOURCE MATERIALS

Fruit Grafters Handbook by Tom Burford & Ed Fackler
Send check for $8 (payable to NAFEX) to:
NAFEX

1716 Apples Rd
Chapin IL 62628

The book *Persimmons For Everyone* by Eugene & Mary Griffith, (Copyright NAFEX 1982) is now available as an Adobe book file. To order the CD send a check for $14.00 to Jerry Lehman, 7780 Persimmon St., Terre Haute, IN 47802-4994. For each CD sold, NAFEX will receive $5.00. The book is 160 pp., including 76 pages of recipes.

Fruit Handbook for Western Washington: Varieties and Culture. Excellent new and free publication just put out by the University of Washington Extension office. Cost is six dollars for a hard copy, but it can be downloaded for free in PDF form. Go to http://ext.wsu.edu/ and search the title and download! It seems to be really well done and covers many different types of fruits. John Lott, j_lott@hotmail.com

"Spring is sprung, the grass is riz, I wonder where the flowers is?" my father used to quip. Well, there's snow on the ground here, but the robins are also around, so spring is right around the corner. Enjoy yours, and come to ***Penn's Acres Kitchen*** **cooking letter** to share what's happening in the kitchen.

To subscribe, send a check for $15 for a year's subscription (10 issues) or $12 for an emailed, PDF subscription (print your own.) Make check payable to Jacquelyn A. Kuehn and mail to:

Penn's Acres Kitchen
c/o Jacquelyn A. Kuehn
PO Box 29
Lucernemines, PA 15754

Questions? Check us out online at www.pennsacreskitchen.net, or email me at pennsacreskitchenmail@verizon.net. Looking forward to cooking with you!

2006 NAFEX Library Report

NAFEX Library John Hillbrand PO Box 296
Fayetteville, AR 72702 jhillbrand@hotmail.com

INCOME	
Loans	$189.50
Pomonas	234.00
Purchases	131.50
Indexes	2.50
Fines	35.00
Interest	1.81
Total	**$594.31**
OUTGO	
Postage	$215.17
Bank charges	162.00
Post office box	40.00
Copies 51.88	
Acquisitions 136.00	
Total $605.05	
RESUME	
Balance January 1, 2006	$1950.07
Income	594.31
Available funds	$2544.38
Outgo	605.05
Balance December 31, 2006	**$1939.33**

NAFEX Meeting Minutes

Martha Davis, NAFEX Secretary

Board Meeting Minutes August 30, 2006

Those present were Jerry Lehman President, Richard Moyer Vice President, Martha Davis Secretary, John de Reeder Treasurer Board members Anton Callaway 07, Felix Cooper 08, Ed Fackler 06, Oriana Kruszewski 07, Ethan Natelson 06 *(pro tem*, past president), Joseph

Postman 06, Pete Tallman 07, Lou Tams 06, in addition to other members of NAFEX.

1. John deReeder gave the treasurer's report (presented separately). There was some discussion. We are losing approximately $5,000 per year. It is hoped and expected that our increased dues will help us meet our per member expenses. The Paypal account set up is still in process. Anton Callaway moved to accept the treasurer's report. Pete Tallman seconded the motion. The motion carried.

2. Martha Davis presented the minutes of the online board meeting Jan. '06- August 24 '06. Felix moved to accept the minutes. Anton seconded the motion. The motion carried. It was requested that there be a statement in *Pomona* that people can renew at the old membership rate now [through December 2006], but if they wish to help the club they can renew at the new rate which will be effective Jan 2007

3. Nomination of new officers. Ethan and Ed are working on possible nominations. There was considerable discussion. There are 6 members whose terms expire after this meeting. Jerry is willing to continue as President. Richard is willing to continue as Vice President. John is willing to continue as treasurer. Treasurer's comment: John thinks we need more strategic planning done by the treasurer and a treasurer that has more time for this.

4. Ethan moved that specific designations, general expectations & current duties be written up for Board membership, President, Vice President, Treasurer, Secretary, Editor, Membership Chair, and Annual Meeting planner. Joseph seconded the motion. The motion passed. We request that everyone currently in one of these positions write it up. Felix will gather information on board membership.

5. Future meetings: 2007 Annual meeting will be August 22-24 at Clemson University, Clemson South Carolina. Our contact there is Greg Reighard, Director of the Department of Pomology. The plan is activities the evening of the first day, one day for talks, and one day for tours.

A tentative future meeting possibility is Elizabeth City N. Carolina. Tom Campbell is our contact; we think the last chance to do this before he retires will be in '08 but that will be checked. Another tentative meeting might be in Pennsylvania in the area of East Lancaster county in

conjunction with the Backyard Fruit Growers. Our contact there is Chris Mauchline. Florida was also mentioned as a possible meeting place, as was Oregon. Ideas for other areas and/or volunteers to organize a meeting at a location are welcome.

6. Anton Callaway reported on our application for IRS 501C3 status. If we had that status, individual donations to NAFEX would be tax deductible. Currently we are an IRS501C5 nonprofit organization. We applied. They received it. The 120-day limit has passed. On inquiry it turns out that to change status NAFEX must dissolve as a C5 organization and then reform as a C3. They way it should work is we fax the letter to dissolve and then call and get new official number as a C3. This will allow individuals to deduct donation. The letter needs

a) Signatures of board members and phone numbers.
b) Copies of the minutes

7. Ethan moved to give Anton authority to dissolve our current (501C5) organization when the application is ready, and to apply to reformulate as a 501C3 organization, keeping the same organizational name, bylaws officers and structure and transferring assets to the new organization. Felix seconded the motion. The motion passed.

8. EBSCO Status. This is an organization that publishes journals on line. They sent us a contract and we modified it so that the most recent two to three issues of *Pomona* would not be on line. We heard nothing further. Ethan will supply contact information and Jerry will follow up.

9. There was varied discussion of a variety of topics mostly aimed at attracting more members and backing up NAFEX information. Suggestions include contact with permaculture groups, demos and entry-level info at meetings as well as more advanced topics. Informational brochures could be developed that people could hand out if they have appropriate venues. This discussion will continue electronically.

10. Ed moved that the meeting adjourn. Nathan seconded. The motion passed.

NAFEX General Business Meeting Minutes August 31, 2006 7:45pm

1. Martha Davis read the minutes of the Board meeting of August 30 2006. John deReeder read the treasurer's report from that

meeting. Charlotte Shelton moved to accept the minutes. Adam Turtle seconded the motion. The motion carried.

2. The motion regarding our IRS nonprofit status from the board meeting was read as follows: to give Anton authority to dissolve our current (501C5) organization when the application is ready, and to apply to reformulate as a 501C3 organization, keeping the same organizational name, bylaws, officers and structure and transferring assets to the new organization. Adam Turtle so moved, John Kim seconded the motion. The motion carried.

3. Election of new board members. Pete Scott, Ethan Natelson, Robert Hamilton, Barry Nichols and Lester Davis were nominated. Ed Fackler moved to accept the slate as nominated. Felix Cooper seconded the motion. The motion carried.

4. Joe McCloud moved to nominate Jerry Lehman for president; Felix Cooper seconded the motion. The motion carried.

5. Joe McCloud moved to nominate Richard Moyer as Vice President. Felix Cooper seconded the motion. The motion carried.

6. There was a request for volunteers for treasurer. John de Reeder is willing to continue to serve. Joe McCloud moved to close nominations for treasurer. Chris Doll seconded the motion. The motion passed.

7. Joseph Postman nominated Martha Davis to continue as secretary. Felix Cooper seconded the motion. The motion carried.

8. Charlotte Shelton moved to accept the slate of officers as nominated. Chris Doll seconded the motion. The motion passed.

9. Lester Davis moved to adjourn the meeting. Felix Cooper seconded the motion. The motion carried.

Online Board Minutes: January-August 24, 2006

After some discussion we decided to try formal board meetings on line.

1) Doreen Howard moved that we pay $100 for a five-year domain name registration and instruct the treasurer to do so as soon as possible. Ed Fackler seconded the motion. There being 9 yes, 1 abstention and no votes against, the Domain Name motion carries.

2) Felix Cooper moved that the board approves using Paypal via the web site to collect membership dues and proceeds from the sale of various merchandise. Doreen Howard seconded the motion. The motion passed with 9 yeas and 2 abstentions. The treasurer was asked to establish the account as soon as possible.

3) Ed Fackler moved, and Felix Cooper seconded that on Jan. 1, 2007 the membership dues will be as follows.

US Residents:	
1 year base rate	$19
2 years	$36
3 years	$52
Canadian Residents:	
1 year base rate	$23
2 years	$44
3 years	$64
Other International:	
1 year base rate	$26
2 years	$49
3 years	$71

The motion passed with 12 yeas, 0 nays and 1 abstention. Jerry wishes to thank John, Ed, Felix, and others especially Jill for their input on this motion.

Respectfully Submitted,
Martha Davis Secretary

Submitting Material To *Pomona*

Pomona is a member-written publication. Without you, we have nothing to say. Tell us what fruits and nuts you are growing, how they are doing in your USDA or Canadian hardiness zone, what special techniques you may have used to enhance your fruit's success. You are writing a letter to your fruit-growing friends when you submit to *Pomona;* you do not need to write a scholarly article, though we welcome those, too.

Send your *Pomona* articles to the Gathering Editor listed inside the front cover.

Pomona Protocol: Your Submissions

From the beginning of NAFEX, when there was no *Pomona* and information was sent from one avid fruit grower to another in a series of round-robin letters, member submissions have been the lifeblood of the organization. That is just as true today as it was thirty years ago.

In the interests of clarity, let us state that material submitted to *Pomona* remains your property insofar as any future use is concerned, except for archiving back *Pomonas* with EBSCO Information Services, a provider of information access for research and educational purposes only (see www.ebsco.com) This is a beneficial endeavor for NAFEX.

Join the NAFEX List Serve

The NAFEX membership is eligible to join the list serve, where you can get answers to your questions from experienced fruit growers. Material is occasionally gleaned from the list serve for publication in *Pomona;* please let me know if you do not want your material used in print. Go to the following website and follow the instructions near the bottom of the page, then prepare to enjoy and benefit from the knowledge of many, and to contribute your own knowledge for the help of others.

http://lists.ibiblio.org/mailman/listinfo/nafex

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Deeper Wisdom
by Allen Cosnow

A guru sat on a mountain high
Above the city's rush
His hair had known no shampoo suds,
His teeth had felt no brush.

"Master!" I cried, "Enlighten me!"
And he spoke these words of truth:
"Son, nothing is all-purpose
And nothing is squirrel-proof."