

The Bee Line

NEWSLETTER OF
WESTERN CASCADE FRUIT SOCIETY
 A NON-PROFIT EDUCATIONAL ORGANIZATION

SPRING 1995

Apples Pears Figs Grapes Kiwi Cherries Nectarines Peaches Nuts Blackberries Raspberries Strawberries Blueberries Currants Huckleberries Gooseberries Nuts

AN AUSPICIOUS YEAR FOR WCFS

I have often wondered, how did this Society organize?-- how did all these people from all over Western Washington get together?--what or who--was the magnet that attracted them to one another? Men such as Bob Sestrap, Walt Lyon, Tom Perkins, John Parker, Dal Leaf, Gerald Pate, Ed Lewis, Tom Thornton, James Anstis, Jim McCausland of Sunset Magazine, to name a few.

In 1980, Western Cascade Fruit Society became a reality. At that time it was known as Western Cascade Tree Fruit Association, but as the organization grew and attracted members interested in more than tree fruit, the name was changed. Max Meyers wrote in the Winter 1988 Newsletter on the subject of a name change to stimulate interest in members submitting names, "...Now let's look at what we have. Examples are: The Amateur Fruit Society; The Fruit Hobbyists Society; The Fruit and Nut Society; The Home Fruit and Nut Society; The Home Fruit and Nut Association; The Home Fruit and Nut Club. With a name such as above, we could include any group in the country, and with a little paper work we could set up chapters anywhere.....". (Ed. note: The complete article will be reprinted on request). The dues were \$10.00 annually then and still are, there is consistency and a bargain!

I had hoped to be able to present the entire story, from an idea in the mind of one man, to it's 15th Anniversary, this month, but it didn't work out. I did not contact the founding members for the details early enough, and

being the busy men they are, there was not time for everything. Pruning and grafting took precedence, memories and research a back seat!

Walt Lyon will be sending the historical data, John Parker on the formation of chapters, and the chapter presidents are sending information on how and when their chapter developed. Bob Sestrap has promised some information too. If any other founding member would care to share a memory or two, your contribution would be most welcome.

So this issue, as a start, has an article about one of the founding members, Tom Perkins, on page 6, compliments of Richard Yost, editor of Pacific Farmer. In the July issue I hope to have the story for you, and highlight another founding member or two or three, whatever space allows.

With the Annual Spring Meeting and Sale behind us, we look forward to the Fall Fruit Show scheduled for October 28/29. Now is the time to start thinking about how you can help, but a bit early, probably, to plan your entry! Your Board of Directors has started planning.

There have been some changes in the structure of the WCFS Board, detailed on page 3, which would give each board director the opportunity to share the obligations incumbent on carrying through WCFS's educational programs, thus improving the way the Society functions.

*to change what we can: to better what we can:
 Robert Couls Stevenson*

IN PURSUIT OF THE PERFECT FRUIT-ROOTS

They came from far and near, those we know of, those who registered; from Lynden to the north, Ellensburg to the east, Lyons, Oregon to the south and Aberdeen to the west. Starting at 8:40 a.m., 226 of them registered from 55 cities and towns; we know of 27 who didn't register and there were probably more. We heard that some one from Canada was there, but he didn't register. We're sorry we didn't get to meet you.

The WCFS 1995 Annual Spring Meeting and Rootstock/Scionwood sale was well attended. Steve Jackson, in charge of rootstock sales, was the man who did it. His enthusiasm and hard work were the reasons for its success. THANK YOU, STEVE. And, of course, thanks to all the volunteers who helped. Bill Davis and his crew in the scionwood sales did a great job too. Marlene Falkenbury kept the coffee pot full, Leonard Jessen kept on grafting, the volunteers who stepped in at the last moment to help at the membership/education and registration tables were wonderful, as were those who had volunteered early on. And so I am not going to name each of you individually, because I don't know who ALL of you are; so here's a BIG THANK YOU to each and every one of you.

Last, but not least, thanks to all of you who came to the Spring Meeting and Sale.

And many thanks to all of you who donated plant material for the sale. Thanks also to Safeway (the Thrashers Corner store) for their donation towards the baked goods we purchased. And thanks to you who contributed for the coffee and baked goods--you are all appreciated.

Seven new members joined WCFS and one rejoined after an absence of three years. Welcome to all of you.

At the Annual Meeting preceding the Spring Scionwood, Rootstock and Fruiting Plant Sale, Joe Zeppa, Nominating Committee Chairman presented the Directors for the 1995 to 1998 term; Chuck Holland, T. K. Panni and Steve Jackson. He also announced the formation of the Executive Committee, details on page 3. The Treasurer presented the financial statement for 1994:

January 1, 1994 Beginning Balance				\$ 8783.08
Income: Dues	2545.00	Expenses: Newsletter	959.40	
Contributions	267.00	Printing/educational material	262.93	
Bank Interest	166.93	Office/Postage	588.65	
1994 Spring Sale	2578.63	Miscellaneous	140.79	
1994 Fall Fruit Show	2417.49	1994 Spring Sale	1107.09	
Group Purchases	2516.00	1994 Fall Fruit Show	2182.84	
WSST Payable	<u>211.45</u>	Insurance	565.00	
Total Income	10702.50	Group Purchases	2514.39	
		Dept Revenue/1993 sales	<u>125.68</u>	
		Total Expenses	8546.07	
Income				<u>10702.50</u>
Expenses				19485.58
				<u>8546.07</u>
				10939.51
Contributions to WSU Research and Oregon State University Research				<u>2000.00</u>
Balance 12/31/94				\$ 8939.51

1995 SPRING SALE RESULTS

Of all the plant material Steve purchased for this sale there is rootstock and scionwood remaining. Several WCFS members have volunteered to take them, graft them, plant and nurture them so they can be sold as trees at the 1996 sale. There may be other plant material, but very little. The profits were not as great as anticipated, the hope was to make up for the low profits at the Fall Fruit Show in 1994.

Income: door contributions	\$233.25	Expenses: rental/honoraria	275.00	
coffee "	35.04	plants/rootstock	3365.46	
grafting	66.00	coffee/cups	23.76	
scionwood	557.30	advertising	118.51	
rootstock/plants	<u>361.98</u>	misc./supplies	<u>71.90</u>	
Total	6253.57	Total	3854.63	Profit \$2398.54

WCFS BOARD NEWS

Performing the variety of tasks associated with our society has traditionally fallen on a few dedicated volunteers. This puts the society at risk by putting too much responsibility on too few people. Fortunately, that's changing thanks to the recent efforts of a committee established last November by your board.

Called the WCFS Improvement Committee (Joe Zeppa/Chair, Evelyn Hoyme, Steve Jackson, Ernie Massei, T.K. Panni, Milt Piatok, Ron Schaevitz and Dick Tilbury), this group generated four proposals to improve the way we manage and operate our society. They were accepted at the March 4th board meeting.

At the Annual Meeting convening at 9:30 a.m. on March 4th, Joe Zeppa outlined to the membership the WCFS Improvement Committee's recommendations. He also announced the nominees for board positions for 1995 to 1998; Chuck Holland, T.K. Panni and Steve Jackson. Orel Vallen agreed to fill the vacancy in the 1994 to 1997 position due to Paul Hoyme's resignation. At the board meeting which convened at 3:00 p.m., the Executive Committee was formed to carry out the functions of the president and vice president, as the nominating committee had no candidates for these positions. The Executive Committee is comprised of Joe Zeppa, as chairman, Dick Tilbury, Ron Schaevitz, T.K. Panni, and Evelyn Hoyme.

Briefly, Proposal #1 deals with changes to our by-laws, Proposal #2 clarifies the roles and responsibilities of WCFS versus the chapters, Proposal #3 addresses how to redistribute the workload (i.e., the problem identified above), and Proposal #4 establishes and schedules standard agenda items for the board meeting. In addition, the board agreed to the creation of an Executive Committee to help plan and implement the activities of the society. This issue of the newsletter will focus on the Executive Committee and Proposal #3. The other three proposals will be described in more detail in future newsletters.

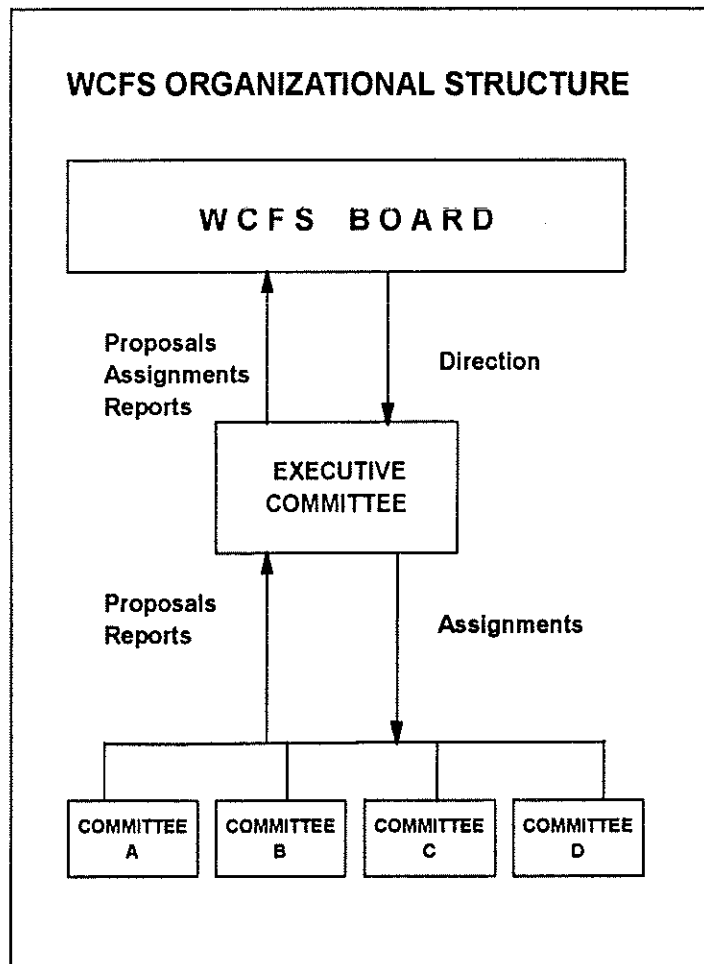


Figure 1

Figure 1 illustrates the relationships between the WCFS Board, the Executive Committee and the various standing and ad hoc committees. The board provides direction to the Executive Committee, which in turn makes appropriate

assignments, if necessary, to existing committees or establishes new committees to carry out the assignments. The standing and ad hoc committees will gather information and generate reports or proposals for review by the Executive Committee. The Executive Committee will then present these reports and proposals to the board for their approval. It can also make assignments to individual board members as necessary. One ad hoc committee (Chuck Parkman and Chuck Holland) has already been established to assess board risk and liability and recommend appropriate actions.

Proposal #3 spreads the workload by assigning specific responsibilities to board directors and officers. Education, publicity, Fall Fruit Show, membership, and commercial displays are just a few of the responsibilities. The board member either performs that responsibility or recruits volunteers to perform that responsibility. One board responsibility has been identified as Chapter Liaison, Ernie Mazzai has volunteered for that position.

Consequently, board members and the Executive Committee will be seeking volunteers to help them carry out their responsibilities. This and future newsletters will identify open positions.

The success of this approach depends on active participation from all the membership. By distributing the workload across a few more people we can maintain a vibrant society that meets the needs of our members. If you are interested, call me, Joe Zeppa, at (206) 524-8943.

HERE IS WHERE YOU CAN HELP

EDUCATION--Assembling, maintaining, coordinating and/or storing displays, pamphlets, video library, video taping our programs for the Fall Fruit Show (FFS) and Spring Sale, helping at the education table at these events.

PUBLICITY--Coordinate publicity for all events. Maintain list of contact people, news media, publications for their deadlines and format requirements for submission of event notices. (Much of this information is now available).

SPEAKERS BUREAU--Chuck Parkman will take on this position, one he has done so well as president. If you know of someone you think would be a good speaker at one of our events, let Chuck know.

COMMERCIAL DISPLAYS--Coordinate commercial displays for the Fall Fruit Show and Spring Sale, communicating exhibitor fees and ground rules to prospective Exhibitors, set by the Board. Coordinate food service for these events.

ROOTSTOCK & PLANT SALE--Steve Jackson has agreed to chair this division of the Spring Sale, but he needs **HELP**. Volunteers to label rootstock and plants prior to the sale, to help assemble pre-orders, to work at the sale.

SCIONWOOD SALE--Bill Davis will chair this division of the Spring Sale, but he needs **HELP**. Scionwood, and volunteers to work at the event, setting up and at the cash box.

FFS SETUP/TAKE DOWN--Orel Vallen is chairing this division, but your **HELP**, is needed to set up the evening before the show starts and the day in ends to dismantle.

FRUIT ID and TASTING--Orel Vallen has volunteered to chair this division of the Fall Fruit Show also, but your **HELP** is needed at the tasting table.

CIDER SQUEEZE--Ron Schaevitz chairs this division of the FFS, and he too needs help.

TICKET SALES--Coordinate admission and raffle tickets-designing, if you wish, and arranging printing. **HELP** is needed to man the admission table and the raffle sales table at the Fall Fruit Show.

NEWSLETTER--Submit articles to the Editor, if you have found it interesting, so will others. Please include source and date of publication so proper credit can be given. Write an article of your experiences; what worked for you, what didn't, what you would do differently next time. There are many new members just starting their fruit growing venture who would appreciate your expertise. **HELP** is needed folding, sealing and affixing labels prior to the mailing of the newsletter. (Many hands make light work, you get to know your fellow members better and have FUN).

Then feed on thoughts, that voluntary move

Harmonious numbers;

John Milton, "Paradise Lost"

1995 WCFS EXECUTIVE COMMITTEE AND BOARD MEMBERS

EXECUTIVE COMMITTEE

JOE ZEPPA, Chair	524-8943	7014 58th Ave NE	Seattle	98115
T. K. PANNI	747-4541	4541 130th Ave SE	Bellevue	98006
RON SCHAEVITZ	362-1227	1227 NW 117th St	Seattle	98177
DICK TILBURY	723-9009	4916 52nd Ave S	Seattle	98118
EVELYN HOYME, Treasurer	485-3835	18709 24th Ave SE	Bothell	98012

BOARD OF DIRECTORS

1996

LARRY BARELLO	683-8297	50 Willard Dr	Sequim	98382
BILL DAVIS	771-8978	21102 Summit Lane	Edmonds	98026
DICK TILBURY	723-9009	4916 52nd Ave S	Seattle	98118

1997

ERNIE MAZZIE	943-2504	4427 Boston Harbor Rd	Olympia	98506
GIL SCHIEBER	783-8262	7016 Jones Ave NW	Seattle	98117
OREL VALLEN	772-2119	P.O. Box 78358	Seattle	98178

1998

CHUCK HOLLAND	523-8350	6831 35th Ave NE	Seattle	98115
STEVE JACKSON	868-8344	2330 229th Ave NE	Redmond	98053
T.K. PANNI	747-4541	4541 130th Ave SE	Bellevue	98006

CHAPTER PRESIDENTS

BILL ROSENBERGER, N Olympic	683-8861	P.O. Box 1865	Sequim	98382
PAM BUCK, Peninsula	674-2604	6835 Old Clifton Rd SW	Port Orchard	98368
RON SCHAEVITZ, Piper Orchard	362-1227	1227 NW 117th St	Seattle	98177
MARLENE FALKENBURY, Seattle	522-2273	7547 32nd Ave NE	Seattle	98115
DAVID DANDURAND, S Puget Sound	288-2722	P.O. Box 23	Amanda Park	98526
LEONARD JESSEN, Tahoma	536-4590	6703 48th Ave E	Tacoma	98443

IMMEDIATE PAST PRESIDENT

Charles Parkman	452-6600	P.O. Box 128	Carlsborg	98324
NEWSLETTER EDITOR				
Evelyn Hoyme	485-3835	18709 24th Ave SE	Bothell	98012

FROM THE EDITOR-- We continue to mix things up this issue, and this page is in a different place. We'll get it right one of these times. Would it be more useful if you knew where to find it each issue? The last page, where the label is affixed, and the membership renewal form are back to back (the Treasurer thinks it would be handy that way). And when you cut off the renewal form to send to the Treasurer, you haven't lost any of the Board members in case you need to call someone for information (or to volunteer). When you are filling out the renewal, offer to give a hand somewhere-- many hands make light work and happy hearts. If your dues aren't payable, send it with an offer to help.

Hopefully, the table of contents will be of some use to you. It came in handy last issue for one member!

On page 31, you'll see what all those colors mean on the due date section of the label. If you don't have a color, nothing to worry about. If it is green, complete the renewal form and send it in a couple of weeks or so. If its yellow, in a few days. If its RED, do it NOW. (That red is more like a bright pink, but its the closest we could get.)

NEXT NEWSLETTER EARLY JULY

A (DIFFERENT) APPLE A DAY....KEEPS THE PERKINS FARM A BUSY PLACE

by Richard Yost as published in Pacific Farmer

Tom, Sue, and Jim Perkins' farm is, without question, an apple lover's paradise. Stop by the Perkins' orchard and have an apple ... say a Jonagold. go back the next day and try a Gravenstein. The next day you can have a Melrose or a Hawaii and the next perhaps a Mutsu or Spartan. If you were to stop by and try a different variety of apple each day it would take you nearly three and a half months.

"About three-fourths of our commercial crop is Jonagold and the other quarter divided between about a dozen other varieties," Jim Perkins said while touring the family's 45-acre orchard east of Sedro Wooley. "In all we have more than 100 varieties although quite a few are just one tree."

When the Perkins gave up raising cattle and switched to growing apples 16 years ago, they came to a quick decision. They could go the traditional route and concentrate on a couple of varieties or spread their marketing season out by specializing in a large number of varieties. "We sell to area retailers and to a packer in Wenatchee and thought it best to cover as large a span of the market as possible," Jim explained. "We figured why just grow a few varieties and have the season over in two or three weeks when we could extend the season to four or five months by planting more varieties."

The Perkins' harvest season begins in August when the Gravensteins and Chehalis first ripen. In September the Akanes and Jonamacs come into their own to be followed in the coming months by the Jonagolds, Melrose, Hawaii, Mutsu, Gala, and Spartans. According to Jim, the dozens of other varieties being tested at the family's orchard come from all across the U.S. and Canada. Generally, each is planted as a two-year-old tree. Then it is another five or six years before any start bearing commercial quantities of fruit.

"We may have 100-plus varieties but that doesn't mean all are going to make it into production," Jim said. "In fact it's a safe bet few of them will. A tree has to prove itself around here. If it can't bear decent quantities of quality fruit it's out of here." As Jim emphasizes, "It is not that hard to get a tree to produce a lot of fruit, but if the fruit looks crummy, you can't sell it."

Jim and his father, Tom, spend a good deal of their time making sure their trees produce the maximum amount of *quality* fruit as possible. An important key to their success are the trellising systems they have set up and have continued to develop over the years. "When we first started, we planted central leader, free-standing trees that have a heavy root system," Jim explained. "Then we started lowering our trees by using dwarfing root stock. These kinds of trees, however, need some kind of external support so we put in a five-wire palmate trellising system. Then over the years as we learned more about trellising we moved to four-and- three-wire systems. The idea behind this is to get more distance between the limbs which encourages more color and a better finish to the fruit."

The newest trellising system which the Perkins have adopted is the slender spindle, which Jim calls "the wave of the future" "The slender spindle is very popular in Europe (where it was developed) and has been in the U.S. for about six or seven years. We started using it about five years ago, and have about 12 acres in Jonagolds, Gala, and Ulster," he said. "What makes slender spindle training so desirable is that the tree actually becomes a low (7-8 feet) bush. It's pruned and tied to a single support stake and wire so that the trunk actually zig-zags back and forth. If you look down on it from above you will see that the branches radiate out like pieces of a pizza. the (fruit bearing) branches are spaced to give the fruit maximum sunlight. When it is mature, the fruit is right there, ready to pick."

At 45 acres, the Perkins' orchard is one of the largest in western Washington, and if they have their way it is going to get even larger. "We plan to keep expanding as we can afford it," Jim said. "Depending on the materials - the land, the support system, the trees - it can cost between \$7,000 and \$10,000 to put in an acre of trees. We have very few insect problems over here and only a few diseases such as scab to contend with, so we can grow a quality product and we have a good customer base so why not continue to grow?"

Editor's note: Tom Perkins was one of the founding members of Western Cascade Fruit Society, as well as serving as president. A Life Membership was presented to him in 1986. More about Tom and other founding members and the Society next issue.

MOLECULE OF THE YEAR: THE DNA REPAIR ENZYME

An Editorial by Daniel E. Koshland, Jr.

As published in the December 23, 1994 issue of Science

This year's Molecule of the Year is the DNA repair enzyme that serves in a system of like molecules that preserve our health, maintain our species, make evolution possible, and contribute to a sound scientific policy on environmental hazards.

The area of DNA repair has long been an important and respectable field in scientific exploration. Recently it has flourished, not only because of important breakthroughs in the field, but also because its importance in determining public policy is being increasingly understood.

The DNA in the human genome provides the blueprint for about 60,000 proteins that keep us alive and healthy. If the DNA were copied badly, we would have diseases such as cancer at a much higher frequency, and we would not get a faithful copy of our parental inheritance. Our species would not be preserved, and we would not live long. If the DNA were copied perfectly, there would be no room for evolution, and the basis for creation of new species with better environmental adaptation would have vanished long ago. The DNA repair system allows a happy medium.

The estimated error rate for a DNA replication in the human with a well functioning repair system is about 10⁻¹⁰ mutations per base pair per cell generation. This system copes with a human who has 10¹⁴ cells with 4 X 10⁹ bases per cell, who goes through 10¹⁰ division cycles in a normal life span. **The spontaneous errors resulting from intrinsic DNA chemistry in the human body are usually many times more dangerous than chance injuries from environmental causes**

There are great similarities and important differences in the DNA repair system as one goes from species to species. These differences explain why a chemical found to be carcinogenic for one species can have a smaller or greater effect on another species. Aspirin, for example, causes birth defects in rabbits, but is harmless in the human. A thorough understanding of the action of DNA repair and other enzymes will allow us to establish environmental policies that are more efficient and more accurate. For example, if we delineate the differences in the metabolism and repair systems of mouse, rat and human, we should be able to explain the discrepancies in tests for carcinogenic potency and perhaps construct a system that accurately mimics the human system. That would not only help environmental efficiency, but also avert catastrophes such as the experience with thalidomide, which is explained by different metabolic pathways in different species. **Moreover, the new understanding of repair systems may bring about a reexamination of the postulated linear extrapolation for pesticides and radiation and allow more realistic assessments of environmental risk.** Evaluation based on such knowledge would not depend on the opinions of partisan protagonists, but on good, solid scientific evidence.

The repair system in biology is like the fire department in a small town. Such a fire department has the equipment and facilities to be completely adequate for the frequency and extent of fires in a small town. To predict the fire danger in a city of 5 million, no one would suggest setting 1000 simultaneous fires in a town of 5000, measuring the damage, and extrapolating to the larger city. By exceeding the repair capacity of the small town the extrapolation is meaningless, but that is exactly what has to be done in carcinogenicity tests. To make up for their short life expectancy, rodents are subjected to doses of carcinogen that far exceed the repair system, and the results are extrapolated to a much larger and longer-lived species, humans. With new knowledge of biochemical repair and detoxification systems, money could be spent on effective measures instead of being wasted on fruitless ones, and the accuracy of past data could be more wisely evaluated.

The DNA repair system is fantastically interesting in itself. It allows the human copying system to make on the average only three base pair mistakes when copying the 3 billion base pairs in the human genome. Any highly efficient typist would be proud of a record like that. The human species can be proud that it is beginning to understand the system that delivers such a low error rate in the key biological code.

This article was submitted by Dr. Robert Bordeau, a long time and dedicated WCFS member, with this note: "As a gadfly member (WCFS) of sorts I submit the timely editorial by Dr. Koshland. It puts us all in a better position to judge the relative roles of heredity and environment in carcinogenesis. I believe it vindicates Dr. Bruce Ames' long standing position on pesticide risks. Dr. Ames has won many national and international awards of excellence in his field of study (biochemistry and molecular biology). He is truly an authority and has served on panels and commissions on the evaluation of the effects of biochemicals, especially agricultural ones, in laboratory animals and humans."

ORGANIC FRUIT GROWING with Cindy Stark

Immediate Past President of
B.C. Fruit Testers Association

As printed in The Cider Press, Winter 1995

Cindy says that primarily, organic growing means feeding the soil. She avoids the use of non-organic fertilizers to save the earthworms that aerate it and enrich it with their castings. For her own organic fertilizer, Cindy composts grass clippings, food wastes and horse manure, turning it once or twice during the year. In spring about ten shovelful are deposited around each vine and tree. For an extra boost she suggests foliar sprays of fish fertilizer, or the incorporation of a little blood meal. All fertilizers should be kept away from the trunk. Some soils may need dolomite every two to three years to add calcium and correct the pH.

Cindy never sprays with pesticides, for health reasons and for fear of poisoning beneficial species like the bees that pollinate her orchards and ensure fruit set. During the winter she sprays with an organic dormant oil to smother insect eggs. If tent caterpillars do show up in the spring, she clips off the infested branch tips, seals them in a bag and burns them. Home gardeners could use soapy water, Safer's Soap - or a solution of cayenne pepper in water!

Though she does see insect pests come and go, their cycle is short, because natural predators arrive to take care of them. It's also wise to avoid a monoculture which could attract a large infestation and result in the entire crop being lost. For this reason - and enjoyment - Cindy suggests growing a wide variety. Maintaining healthy plants also discourages insect attacks.

Keeping the orchard floor free of fallen leaves helps to control such maladies as scab. Diseased trees should be taken out. Cindy recommends the use of resistant varieties; she grows mainly the scab-resistant 'Prima', others are 'Liberty' and 'Priscilla'. They present clean skins without any spraying whatsoever.

Young trees should be mulched against grass and weeds which compete for moisture and nutrients. Instead of using Roundup, weeds can also be smothered with black plastic covered with clean wood shavings, sawdust or leaves.

To increase fruit size, Cindy hand-thins apples and pears to one fruit per spur. She does not coat her fruit to prolong shelf life.

The essence of organic growing is to establish a system that is in balance with nature. Cindy feels that anyone switching to this approach should be encouraged to know that it is well worth the wait till the garden or orchard adapts itself. In the end, organic growing is probably easier, because nature takes care of itself to a large degree. And Cindy finds a low level of damage acceptable.

In her own words: "Nothing makes more sense than being responsible for your own food. Almost anyone can find space for a dwarf fruit tree; several can be placed 2 to 4 feet apart."

Cindy thinks organic fruit tastes significantly better, having a clearer and more pronounced flavor.

Cindy Stark manages her own commercial orchard of apples, kiwis and Asian pears according to organic guidelines.



A LITTLE INFORMATION ABOUT THE B.C. FRUIT TASTERS EXCERPTS FROM CINDY STARK'S MESSAGE AS OUTGOING PRESIDENT

Through the past eight years of my association with this group, I have seen members eager to impart their knowledge and to learn from others about growing excellent tasting fruit. The very best.....When I joined the B.C. Fruit Testers there were 15 members who began by networking and sharing their experiences. There were field trips and meetings with experts (who later became speakers at our AGM) from which I gained the very information I had sought in books - which, however, weren't really up to date. Judging from the increase in our membership to over 300 persons, it appears that others are just as keen to tap into our resource pool of knowledge.....This association is a success because of the hard work the executive and volunteers have put in over the years. I have a huge thank you to everyone who has contributed

AMATEUR FRUIT ORGANISATIONS IN EUROPE
THE AMATEUR FRUIT ORGANISATIONS ON THE CONTINENT

by Howard Stringer

continued from Winter, 1995

Starting with our geographically nearest neighbor, FRANCE, we have the "Croquers de Pommes", or "Apple Crunchers". They were founded in 1978 by Jean Choisel and being such a large country with a great variation in climate, have evolved into 19 regional groups, the process being speeded up by associating with established pomological groups such as the Societe Pomologique du Berry. They have a particularly large task, for it has been estimated that there are at least 4000 local varieties of apple in France alone and that is almost twice the number of apples at Brogdale! The name "Apple Crunchers" was deliberately chosen to be humorous, but it does not mean that their interest is solely confined to that fruit. They now have several "conservation orchards" in various parts of the country, holding a collection ranging from apples and pears to figs, nuts and olives. Membership has grown from a handful in 1978 to over 2000 in 1993, distributed over the whole country. A quarterly newsletter, Le Bulletin, is published to keep members in touch.

BELGIUM is the home of the Nationale Boomgaarden Stichting, or National Orchard Foundation. This is the culmination of efforts by its founder Ludo Royen to preserve Belgium's regional varieties. He started by forming a collection of 500 varieties from his own region. Giving the occasional lecture, he slowly gathered around him a group of like-minded people and after a successful exhibition at the University of Limburg in 1984, decided to give his group a formal shape and the Foundation was born. Its headquarters are the University of Limburg, Diepenbeek, at the centre of a fertile fruit growing area and there are regional branches at Mechelen (Malines) and the western part of the province of Brabant, which includes Brussels. The first edition of their newsletter, Pomologia, appeared in 1985, in the Flemish language. A French language edition was launched some years later, but unfortunately was not read by sufficient people to justify the cost of production. This trust works closely with other European countries and beside their own fruit show held every autumn, cooperates in staging a pan-European show, called Europom, every 4 years. This is held, where possible, in different countries and in October 1993 was held at a castle in Limburg province, when, with the participation of 5 other countries, including the UK, over 1500 varieties of fruit were staged! The trust has about 1100 members and is remarkable for its range and number of meetings, about 30 per year, comprising visits to orchards, theoretical lectures and practical demonstrations. They have established about 15 orchards in various parts of Belgium to house their collections and where they can hold demonstrations. A great bonus to members is the annual sale of fruit trees. In 1992, 175 varieties of apple were offered, 100 of pear, 67 of cherry, 72 of plum, and 15 of peach, together with lots of varieties of soft fruit. They have also developed a computer programme to speed up the identification of the masses of fruit that is always brought along at shows.

HOLLAND is the home of the Noordelijke Pomologische Vereniging, or Northern Pomological Association. This was formed in 1989 and is centred around the town of Assen in Drenthe province, with some meetings taking place in the neighbouring province of Groningen. They had about 350 members in 1993. They hold a show in the autumn of every other year in a school of horticulture, specialising in fruit, in the small town of Frederiksoord near Assen and the next one will be in 1996. This society is also working on the computerised determination of apples. Its greatest wish was to have a place where it could house its collection of about 750 apple cultivars, 130 pears and 130 plums, which were dispersed in the gardens of members and has recently been offered about 2 hectares (5 acres) of land in Frederiksoord to make a start, and there is the promise that further land will be made available at a later date. The society has a policy of reprinting facsimile versions of old pomological works in order to bring them within the reach of their members and perhaps its greatest triumph in this area has been the reissue of the great Dutch pomologist KNOOP's 'Pomologia' and 'Fructologia' (1750)

New on the scene is the Stichting Behoud en Befordering Fruitcultuur (Foundation for the Preservation and Advancement of Fruit Growing). Little is known of this at the moment, except that it held its first show in autumn 1994 and is centred on the town of Doesburg, near Arnhem.

Neighboring GERMANY was, to my knowledge, the last country to revive an organisation to preserve its heritage of fruit. In the later years of the last century there had existed a Society of German Pomologists, a rather highbrow association of learned professionals, which dissolved after the first world war. A male nurse named Gert Muller, a passionate amateur fruit lover, who already had gathered a collection of 350 apples, conceived the idea in the 80's of launching a modern successor to that organisation, after he realised that all over Germany there were enthusiasts like him who were doing their own little bit to keep local varieties of fruit alive, but needed the encouragement of overall fellowship to stimulate matters. He gathered a number of enthusiasts for a meeting in the village of Barnstorf south-west of Bremen in October 1990 to propose the founding of a formal organisation. At that meeting the "Association of Pomologists" was born and the founders were quick to point out that the word "German" had been deliberately dropped from the title because they intended their organisation to have links with neighbouring countries, because, after all, fruits of German origin did not stop growing at the frontier. Also, the word "Pomologist" should be taken to mean any lover of fruit. Since then, the

Association has been successfully regionalised and an annual yearbook is published. It had attracted about 80 members by early 1992 and has the preliminary aim to collect 1200 varieties of apple, to be planted in two areas, an 18 acre plot of rented land near Barnstorf and in the grounds of a school of horticulture at Triesdorf near Nuremberg. It is interesting to read of the difficulty the organisation had in renting land. There was plenty available, but the owner would ask for what purpose the land was wanted and when told that it was for planting fruit trees, would say no. Apparently the local farmer could not conceive of land being used for any other purpose than for an annual crop!

The society's AGM takes place towards the close of a weekend meeting of fellowship, discussions and book and plant exchanges held in a local hostelry in a different part of Germany every year.

SWITZERLAND is home to the organisation FRUCTUS, founded in 1985. By 1994 they had over 700 members. They held their first show in 1986. At a magnificent show in 1992, in conjunction with PRO SPECIE RARA, an organisation devoted to the preservation of threatened wildlife species, animals as well as plants, they exhibited 650 cultivars of apple. A quarterly newsletter is published, in both German and French language editions separately, and a limited number of copies are available for purchase by members of the public.

Thus progress has been swift in all cases to provide the necessary infrastructure to ensure that local varieties of fruit are kept alive and in the consciousness of the consumer, thanks to the hard work and dedication of many enthusiasts. May we wish them every success!

No doubt there are many organisations similarly devoted to fruit growing which have received no mention. I intend no slight, simply that I am not aware of their existence and I shall be happy to hear from any organisations not mentioned.

Summary of Organisations, from which detailed information can be obtained.

GREAT BRITAIN

The Fruit Group of the Royal Horticultural Society, 80 Vincent Square, London SW1P 2PE England
The Friends of Brogdale, Brogdale Farm, Brogdale Road, Faversham, Kent, ME 13 8XZ England

FRANCE

Association Nationale des Croquer de Pommes. President, Claude Scribe Sente des Brosses, F-77580 Voucangis

Belgium

Nationale Boomgaaren Stichting. Correspondence address: Postbus 49. B-3500 Hasselt

HOLLAND

Noordelijke Pomologische Vereniging. Correspondence address: Sluisstraat 16, NL-9406 AX Assen
Stichting Behoud en Bevordering Fruitcultuur. Chairman Bennie Giessen. Address: Postbus 83, NL-6980 AB Doesburg

GERMANY

Pomologen-Verein e.V. Chairman. Gert Muller. Address: Meierkamp 1, D-49406 Eydelstadt-Gothel

Switzerland

Fructus. Address: President, Dr. K. Stoll, Waisenhausstrasse 4, CH-8820 Waedenswil

Howard Stringer, 22A Send Barns Lane, Send, Woking, Surrey. England GU23 7BS

Howard Stringer, now retired, has been a long time member of the Royal Horticultural Society and is an authority on English apple varieties. Dr. Norton and the Apple Buff's tour group met Mr. Stringer at the Earl of Selbourn's Blackmoor Estate at his Apple Open Day. Mr. Stringer gave the above information to Dr. Norton, who submitted it to share with WCFS members. Our thanks to Bob.

A brief note for our new members. The Apple Buff's Tour to England and the Continent in October 1994 was led by Dr. Robert Norton and his wife, Carol. Many of WCFS members were with him, as well as members of the B.C. Fruit Testers Association and others. In the Winter, 1995 issue of *The Bee Line* Dick Tilbury wrote of their experiences. The Fruit Organisations of England were detailed in that newsletter also. This is a continuation of Mr. Stringer's article.

If you would like copies of the first page, please contact the Newsletter Editor.

THE BATTLE HAS BEGUN IN EUROPE

(TO KEEP OLD FRUIT VARIETIES ALIVE)

by Evelyn Hoyme

In the Fall issue we published articles about the outlook on "new wave of apple rootstocks". In the Winter issue, the opposite of new: "returning to the apple's birthplace", "buds frozen to conserve rare fruit" and Harvey Wederspahn's avocation, "growing antique apples", as it applies in the United States.

Now, let's explore the European's perspective.

Joanna Blythman, in her article "Sounding an Alarm to Save Old Strains" states, "All over Europe, our rich heritage of fruit is under threat - part of a process which environmentalists call genetic erosion. In other words, the fruits we are eating are becoming more and more similar genetically." She goes on to say that the process happened in several ways.

Many fruit species are in danger of disappearing entirely. In Britain, the sensuously perfumed quince, once as common as apples, has vanished from shops. It can be found in the wild---if you are lucky. Damson plums, that dark plum which beat even the best German and east European ones for intense flavor, they too are disappearing; only a few growers are still producing them. In southern France the *jujube*, that small, reddish brown date-like fruit children once sucked on, despite its sweetness, aroma and containing more vitamin C than an orange, no longer exists except in specialist gardens and collections. The pomegranate (*grenade*), once so common as to be in a traditional Christmas dish, *les treize desserts*, is no longer grown in Provence.

Another sign of diminishing diversity is the dramatic decline of different named varieties of fruits within a species. Ms. Blythman says that in Britain there used to be 6,000 distinct varieties of apples, now only 2,000 live on---in special collections. And of these, only a handful are still commercially produced. "Delightful varieties such as Ellison's Orange, with its slight taste of aniseed, or the pear-flavoured Ribston Pippin, have been squeezed out by modern varieties, mainly developed abroad".

In France, it is the same situation. "At one time French consumers could buy traditional varieties, regionally adapted to their particular soil and climate. Great apple varieties, such as the *Transparent blanche*, *Fleur d'Auge*, *Calville Saint-Saveur* and the *Pigeonnet de Rouen*, have been replaced by a handful of North American varieties. Of 4,000 varieties, only ten are still widely known to French shoppers. Three - the misnamed Golden Delicious and Red Delicious and the Granny Smith - account for more than 80% of sales", she continues. The Czech Republic and Slovakia have three apple varieties making two-thirds of their crop.

All species of fruit are affected. A sweet, slightly sharp fleshed apricot, *Precoce de Boulbon*, which used to be a specialty of the Bouches-du Rhone region, has been widely replaced by commercial modern varieties which have far less aroma. The sweet, red-fleshed peach, *Sanguine de Manosque*, with its fine grained flesh that was grown further inland, has disappeared too. Since 1940 only three quarters of French melon varieties have survived. The list goes on and on.

The cause of this "phenomenon"? The same motive as in the United States. The development of fruit bushes and trees which are heavy bearers, providing a constant supply of uniform fruits, geared to 'supermarket requirement'. Geneticists call it the "funnel effect", the genetic base of material used in plant breeding has been sharply narrowed; the old varieties, tried and true, developed by farmers and growers to be hardy, reliable and good to eat have been edged out by modern hybrids developed by scientists. We all know what 'supermarket requirements' are: uniform size, blemish free, long storage life; and that the old varieties do not fit this criteria.

While European Union once enforced regulations obsessed with appearance and uniformity of flavour, it now has launched a \$25 million Programme for the Conservation of Genetic Resources. Coordinators are employed in every member country to help safeguard the rich genetic inheritance of European fruits, vegetables and cereals. "Seed-savers" are working diligently to see that endangered fruits are collected, grown and their virtues promoted to a wider public. Growers are offered cash incentives to preserve declining species.

Ms. Blythman says, "It is a slow process, which rests on public awareness. If consumers demand more varied and flavoursome fruits, producers and retailers will supply them. But there are strong commercial pressures and big budgets backing the modern hybrids which represent an impoverishment of our fruit heritage."



LUSCIOUS SURPRISES IN THE GARDEN OF FORGOTTEN FRUIT

Lavina is ugly but agreeable, Angelica and Florenza are sweet and delicate. Tonina, on the other hand, is sharp but very beautiful. All are varieties of apple and pear - yet you cannot find them in any shop or market. They are old and, sadly, forgotten varieties of fruit, writes *Rosella Lorenzi*.

However, in the Italian village of Pennabilli, 40 km from Rimini, a "garden of forgotten fruits" has been created by Carlo Pagani, a "fruit archaeologist". It is a sort of botanical museum, where obsolete fruit species are flourishing once again. Inspired by an exhibition of 17th-century paintings of unfamiliar fruits, Pagani combed the countryside of Tuscany in search of stray survivors of old varieties of fruit trees and taking cuttings.

In his orchard 300 types of apple now grow, and more than 40 types of fig. "The trees are invaluable for modern fruit production," he says. "these old fruits tend to be much more resistant to disease and can be used genetically to toughen up modern varieties."

When buying fruit most people have long chosen the biggest and smoothest specimens, wrongly associating appearance with taste. So, in time, hundreds of varieties - small, pockmarked and often irregularly shaped - disappeared forever from the table. "People simply can't imagine what they are missing," says Pagani. "They have only the slightest idea of the range of flavours fruit can offer." The fruits (literally) of his labours went on display recently in an exhibition at Torba monastery, near Varese, with dozens of variations on the apple theme.

They include the *limoncella* from southern Italy, a small, yellow fruit with an acid, lemony flavour; the *calville blanche d'hiver*, strongly flavoured and sweet, making it particularly suitable for jams (it was a favourite of Russia's tsars); the *campanino*, crunchy, juicy, with a tangy bite; and the *pum sunaja*, with loose pips which make the apples sound like maracas just before they ripen. There are also varieties which boast ancient origins but are still in production. One is the *court pendu plat*, a richly flavoured little dessert apple known since Roman times; another is the *annurca*, from Campania, depicted in a fresco at Pompeii. Crunchy and strongly flavoured, it turns scarlet after it has lain buried for a couple of months.

In the 16th century the red *rossa* apple was eaten cooked with sugar and used to make cider; 17th century cooks preferred the *rosa* (red apple), best cooked with spices. In the 19th century *dorsc dur* apples, cooked with turnips, were the most common meal in rural Piedmont. Also in the exhibition are little known minor fruits such as the small *Actinidia arguta*, the Chinese kiwi; and *Crataegus azarolus*, the azarole, with fruit like cherries but with a strong apple flavour, popular on Renaissance tables. Pagani's outstanding discovery is the 18th century plumcot, also known as the violet apricot or Pope's apricot. Tasting of apricot and plum, it was a delicacy reserved for popes and kings.

"Different flavours mean more choice in the kitchen," says Pagani. "I should love to employ a team of chefs and work out the ideal uses for every variety of apple, pear and other fruit that we produce."

Old varieties of fruit tree can be bought from Carlo Pagani's nursery: Flora 200, Via Zenzalino Sud 19a, Budrio (Bologna)
Tel: +39 51 800406, fax: +39 51 808039

The above article was published in "elan 25 November - 1 December - The European"

Ed. note: Pennabilli is about 125 miles north of Rome. If you are planning a trip to Italy soon, you may want to drop in to see this wonderful sounding orchard.

What wond'rous life is this I lead!
 Ripe apples drop about my head;
 The luscious clusters of the vine
 Upon my mouth do crush their wine;
 The nectarine and curious peach,
 Into my hands themselves do reach;
 Stumbling on melons, as I pass,
 Insnar'd with flowers, I fall on grass.
from "The Garden"
 by Andrew Marvell 1621-1678

"ISSAI", THE (ALMOST) HARDY KIWI CULTIVAR
By Bob Glanzman, The Puget Sound Kiwi Co.
(As published in Pomona, Summer 1993, the journal of NAFEX).

In my nursery business, I continually get requests for self-fertile *Actinidia* plants. One of the most popular cultivars is the "Issai" variety of *Actinidia arguta*, the "Hardy Kiwi". Contrary to the popular demand and initial enthusiasm for this cultivar, it has some odd quirks that potential buyers should know about before purchasing the plant in order to obtain best performance.

Here in the Pacific Northwest (also called Pacific Northwest), we have not only a very moderate climate, but a considerable reputation for excessive gray days and continual precipitation. Again, despite popular perception, our summers are typically drought conditions. In Seattle, to the best of my knowledge, average annual precipitation is about 35" (varying within the city limits from a low of 30" to a high of 39"), most falling during the months of October through May. The recorded summer high temperature is 99°F, and the recorded winter low is between 0°F and 3°F. Normally we only fall below 15°F about once in every five years. As a result, we are able to grow most of the *Actinidia* species without much problem. Not so with the Issai cultivar of *Actinidia arguta*.

Issai was bred in Japan, and is reportedly a cross between *Actinidia arguta* and *kolomikta*. Those two species being cold-hardy to -25°F and -40°F respectively. Issai is apparently Japanese for one of first generation, and the cultivar was given this name because it is supposed to blossom and bear fruit somewhat reliably beginning the first year after planting. Regardless of all the other claims, this cultivar is definitely self-fertile in a Genus where the overwhelming rule is dioecious (separate male and female) vines. Issai may be capable of pollinating female *Actinidia* flowers. Last year a friend hand-pollinated three Hayward female *deliciosa* flowers with two Issai blossoms, got one fruit to set, and as of April 19 it appears some of the seeds from that fruit have germinated. By the end of summer, I should know if what is germinating is actually the result of Issai *arguta* pollen, or if *deliciosa* pollen reached the flower first.

I was suspicious of the great Issai claims from the beginning. First, Issai doesn't look like either *arguta* or *kolomikta*. *Arguta* is well known for its red petioles and a red blush on fruit exposed to direct sunlight. The *arguta* variant *purpurea* clearly has red pigmentation throughout the ripe fruit. *Kolomikta*, the crown jewel of the *Actinidia* genus is valued for its variegation starting with a stark white blush on a deep green leaf and proceeding to turn pink, then red depending on the amount of direct sunlight on the leaves. Issai didn't inherit the cold-hardiness of either parent. Via word-of-mouth, I am told that Professor Elwyn Meader lost his Issai plants to the ground in -10°F weather. I haven't heard, but expect the root system may have survived and generated new growth above ground. Here, in the late fall, before first frost, Issai vines often die-back several inches to over a foot at random for no apparent reason.

In the Puget Sound Region of Western Washington, I know of only one Issai vine planted in the ground that lives up to the claims. A few Issai vines are doing reasonably well, but not on a par with pure *arguta* vines. Most people who have questions about their poorly performing *Actinidia* vines have a single plant, Issai. Each year in talks I give and during my retail plant sales, people ask me what they can do to get their Issai vines to grow properly and produce the prolific amount of fruit they were led to expect. I routinely hear of at least two or three people each year who threaten to tear out their Issai plants.

What makes *Actinidia* vines thrive? Each species has its own specific requirements, there is wide variation in needs within species on a cultivar by cultivar basis, and each individual vine seems to have a mind of its own. The common needs appear to be warmth at the roots, nutrient laden soil, and adequate water, in that order. All *Actinidia* vines seem to like warm feet to the point that air temperatures are below 90°F. Above that level, the soil may get too warm and cause a significant increase in water demand by the plant. All *Actinidia* vines are heavy surface feeders and benefit from high nutrient levels in the soil. All *Actinidia* vines have a high water requirement, preferring moist soil, but none can tolerate "wet feet". As forest edge or understory plants, *Actinidia* vines are accustomed to partial shade. Although *Actinidia deliciosa* (the common kiwifruit) is routinely planted in full sun in an open field and can "tolerate" full sun in our climate, all *Actinidia* vines will benefit from partial shade, especially in the home garden.

I normally recommend 20-30% shade for *arguta*, *melanandra*, & *polygama* vines, and 75-100% shade for *kolomikta* in order to obtain its best vegetation. *Kolomikta* often gets sunburned leaves here when panted in less than 50% shade. A member of the Home Orchard Society of Oregon claims that of those *Actinidia* vines he has seen, the Issai is one of the least tolerant of direct sun.

So what about Issai? The one plant I know that thrives is planted on the west side of a house, by a patio in a strip of soil less than 18" wide, bordered on the south side by a two or three foot high concrete retaining wall. The soil has been amended with manure for about thirty years now, and since the owners do dishes the "old-fashioned" way by hand in a

dishpan, they dump the dish water on the plants in this strip of soil. Most of the poorly performing Issai vines I have seen are planted in full sun, often in an open field. My initial two specimen Issai vines, planted in 1989, in full sun in an open field, first blossomed in 1992 but didn't set fruit. They will blossom again this year, but of course the plants look sick and are subject to the infamous random die-back typical of Issai. Often, Issai plants available in local nurseries look lush and may even have fruit set on them when purchased. These plants were most likely raised in a greenhouse.

Some insight into the Issai riddle came to me last year when a fellow member of the Seattle Tree Fruit Society said he got tired of his Issai looking half-dead for four years, and dug it up. Having nothing better to do with it, he put the vine in a pot and set it to the side of his patio. 1992 was the first year of reasonable growth for that vine. From this information there appears a common thread that says Issai wants warmer feet, less direct sunlight, higher soil moisture and humidity, warmer winters and a more confined root system than other *argutas*. Some of these needs seem to contradict each other, but by careful micro-climate planning, they can be achieved in the home garden. It may even suggest that Issai would be a good candidate for container planting, possibly suitable for apartment dwellers with a deck or patio.

What value is a plant with the drawbacks of Issai? Clearly, it has some potential as a parent in plant breeding. The chance that fuzz on kiwis is dominant in the male genes may make this self-fertile cultivar a good "male parent". For those who aren't doing plant breeding and can't get Issai to perform properly, it may not be the right cultivar. If you like a strong pineapple flavor with a tart after-taste, and don't mind waiting 3-8 years for first bloom, try the self-fertile *arguta* cultivar "119-40". People who must have a uniform, very sweet kiwi flavor, may still want to plant Issai. Of course, I don't pretend that Issai will perform poorly for you in your climate, nor that it will meet its expectations if you treat it as suggested in the previous paragraph. I do think we all need to share more of our experiences with this particular cultivar. Please send a report of your experience with Issai to me, attention: Kiwifruit Enthusiasts Journal. If enough people respond, we may be able to answer the Issai riddle.

'ISSAI', THE (ALMOST) HARDY KIWI CULTIVAR, REVISITED

As published in the Spring, 1994 issue of Pomona, the journal of NAFEX

In the Summer 1993 issue of Pomona, I wrote on the "Issai" variety of "Hardy Kiwi". Since then, several unresolved questions about this cultivar have come closer to resolution.

As I suspected, the popular misconception that "Issai" is a cross between *arguta* and *kolomikta* is not true. NAFEX member Lon Rombough read to me a section of a Japanese nursery catalog which identified the plant as "Issai Mata Tabi". "Mata Tabi" is the Japanese name for the species *polygama*. They call *arguta* "Sarunashi". There is apparently no Japanese term for *kolomikta* as that species is not native to Japan. I must therefore conclude that what appears to be correct based on leaf structure is actually true, that "Issai" is indeed a cross between *arguta* and *polygama*.

The second question of most interest to me is "will the self-fertile "Issai" pollinate female *Actinidia* cultivars in bloom at the same time?" My answer in the previous article was that it may be capable of pollinating female *Actinidia* flowers. My answer now is NO. The experiment which produced a "Hayward" variety *deliciosa* fruit has shown no signs of *arguta* or *polygama* parentage in any of the resultant seedlings! *Deliciosa* is clearly the responsible pollen that set the "Hayward" fruit in question. A second experiment conducted this year with two "Issai" plants in full bloom in containers setting immediately adjacent to an "Anna" *arguta* vine in full bloom produced numerous "Issai" fruits, but not a single "Anna" fruit. It must therefore be concluded that "Issai" cannot pollinate a female *Actinidia* cultivar, even when in coincidental bloom.

As we reported in Kiwifruit Enthusiasts Journal Volume #6 (192 pages, available through me for \$17.20 postage paid) the self-fertile *arguta* cultivar "119-40" (B) is used successfully in Maine as a pollinator of female *arguta* flowers, and it may be possible that all self-fertile cultivars are capable of pollinating the female cultivars. Why won't "Issai" pollinate female *Actinidia* flowers? An excellent question indeed. As a fundamental believer in logic, I researched this question and have discovered a partial answer which makes no sense to me.

Genetics. I once thought this subject was completely logical, but now I have severe reservations. The particular part of genetics in question here that appears to be the culprit is "Ploidy". I hope that some other NAFEX member can shed some more light on this subject, but here is the explanation of "Ploidy" as far as I can answer it. *Actinidia* is a polyploid genus deriving its ploidy levels from the basic haploid chromosome count of $x=29$ and multiples thereof. A diploid *Actinidia* therefore has $2x=58$ chromosomes (*A. polygama*), a tetraploid has $4x=116$ (*A. arguta*), and a hexaploid has $6x=174$ (*A. deliciosa*). As Dr. Ross Ferguson pointed out in his article on the Genus in KEJ #6, page 142, crosses between *arguta* and *deliciosa* appear to be pentaploid ($5x$) and the males are known to be poor pollinators. If crosses between

species of different ploidy levels consistently produced offspring of the average ploidy level, I could understand this logic. My research however says that assumption may not be true, and that a complete doubling of chromosomes is possible.

In the book "Botany" by Ray, Steeves, and Fultz, © 1983 by CBS College Publishing, page 371, they say "When polyploidy occurs in a nonhybrid individual, it usually leads to partial or complete sterility, but in an already sterile hybrid between two species the results can be drastically opposite". They further state "if the two parental haploid chromosome sets in an interspecific hybrid are functionally too different for normal meiotic chromosome pairing, the chromosomes will separate erratically at meiosis resulting in sterile gametes. If chromosome doubling occurs in this hybrid (producing a tetraploid if both parents were diploids), each chromosome will be represented twice and will therefore have an identical mate to pair with during meiosis. The tetraploid will therefore have perfectly regular meiosis, and its gametes will be fertile. It will be unable to exchange genes readily with either of the parent species because such hybrids would have unpaired or mispaired chromosomes during meiosis and thus low fertility." If I understand this correctly, it explains why triploids and pentaploids are lousy pollinators. It also explains why "Issai" can't fertilize other *argutas* since it is a cross-species hybrid. Does this also mean that "Issai" doesn't benefit from pollen from a male *Actinidia*?

Enough of the technical stuff. As a Specialty Nursery Owner (trained in architecture of all things), I am having too much fun collecting and tinkering with *Actinidia* species. It is more important to me that my customers enjoy the experience of growing the plants and the benefits of their fruit than understand the mechanics behind it all. Although I don't recommend "Issai" as a suitable cultivar for this climate, I continue to recommend that if you want to grow "Issai", you do so in a container.

One other question was raised about the species *melanandra* in KEJ#6. Is the cultivar "1064-79" really self-fertile? Further evidence from growing trials suggests it is really a female, not self-fertile. One such trial here in Seattle produced two seedlings from one mature *melanandra* fruit. It was thought the *melanandra* had set its own fruit, but these two seedlings with *deliciosa* leaves and fuzz on the vine surely prove otherwise. I hope to report at a later date on the fate of these seedlings, one which has a magnificent black trunk.

WORKSHOP
"GROW YOUR OWN KIWIFRUIT"
SATURDAY APRIL 22, 1995 1:00 - 3:00 p.m.
THE GOOD SHEPHERD CENTER
4649 Sunnyside Avenue N. Seattle

This seminar will concentrate on growing kiwifruit and its relatives in the Puget Sound Region, for fruit production and as edible landscaping. Species/variety selection, cultural requirements, support structures, history and future will be discussed. Questions gladly answered.

Contact SEATTLE TILTH ASSOCIATION (206) 633-0451 for reservations. Fee is \$15.00 for general public.

DID YOU ATTEND THE ANNUAL WCFS MEETING ON MARCH 4, 1995?

Did you donate the Kiwi plants for the plant sale? Do you know who donated them? Did you purchase them? I would like to know what species and variety they were. Please call Bob Glanzman (206) 523-6403.

MOUNT VERNON OPEN HOUSE

WCFS was represented at the Mount Vernon Fruit Open House March 11, sponsored by the WWTFRF. Gene Lewis, T.K. Panni, Chuck Parkman, Leonard Jessen, Sieg Kiemle, Frank Lacey volunteered at the pruning and grafting demonstrations. If I have overlooked anyone else, please forgive me. Many of our members were there, and I'm not aware if it was as a partaker of information or volunteer. We had a membership table set up, five new members have joined us, (WELCOME) sold all but ONE of the remaining hats, and there are SEVEN Fruit-Berry-Nut Inventory books still available. After these books are sold, the next group purchase we make will cost more (about a dollar), as we are now being charged for freight.

CODLING MOTH TREATMENT FOR A WORM FREE APPLE

Codling moth treatment was addressed in the Fall 1994 issue, but it is of such importance, and we have 82 new members of WCFS since then (50 since the first of the year), who should be made aware that there is a means of control that it is being repeated. Orel Vallen submitted this information.

It will soon be the time of the year to start the program for codling moth.

Phase One:

Start with pheromone traps, which should be hung when your apple tree is through blooming. Probably three (3) to an M26, 14' to 16' tall.

The traps will be light plastic gallon jugs. Empty milk or water jugs are OK. Using a drill and 1/8" bit, drill a hole through the neck, just below the cap, so it will hang straight from the limb of the tree. Next, cut two (2) windows, one (1) on each side, 1 1/2" wide by 3" to 4" high. They should be 3" above the bottom of the jug.

Next use a clean gallon jug for mixing the solution to put in your traps. Keep a minimum of 1" of the solution in the traps at all times. You may have to skim the bugs off the traps as this mixture is to attract and does not kill them; they are poor swimmers and will drown. Solution recipe: One cup Brer Molasses (non-sulfur), two cups apple cider vinegar, one teaspoon dry yeast. (Ed. note: it is possible that this solution can trap beneficial insects also, says Dick Tilbury).

Next, fill the jug with warm water, cap and mix and let it ferment for one day. Mix again and fill the traps to the mark. Recap and store in a cool place.

Phase Two:

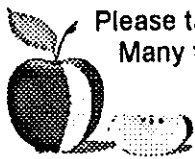
Buy natural burlap yardage (\$1.27/yard as of March 14, 1995) at Hancock Fabric. Whip cut ends. Wash in warm soapy water, dry. If using dryer, clean lint filter twice. Cut into lengths (it is 40" wide) so that a section will wrap around the tree trunk about 1 1/2 times at 24" to 36" from the ground. Fold the burlap in half (width wise) 3 times (ends up about 5"). Place around trunk with folds facing down and secure with one wooden clothes pin.

Once a week undo burlap and destroy codling moth larvae pupating in their silk cocoons. Inspect tree bark for cocoon too. Check your traps for the moth and put the burlap trunk wrap on about two weeks after first moth is detected in the traps.

The codling moth, if left unchecked, will infest from 20% to 90% of the apples in any orchard. Apples attacked have holes eaten into the side, or from the blossom end to the core. The seeds and core are tunneled and eaten by pinkish-white, brown headed worms about 3/4" long when full grown. They crawl rather quickly when out of the apple.

The moths in the traps are about 1/2" long, about 1/4" wide. They are sort of brownish with whitish stripes across their wings, and a dark brown fringe on the rear of the wing when folded. It is not uncommon for 2 or 3 hatches per year.

Keep your little feathered friends, such as chickadees, nuthatches, flickers and some woodpeckers, to name a few, around to help.



Please talk to your neighbors about keeping their apples picked up and destroyed.
Many thanks to Marilyn Tilbury for portions of her article, WCFS-Fall 1994, page 14.

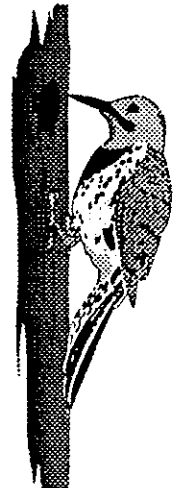
If I can help you with your questions, feel free to call.
Orel Vallen, 772-2119



actual size



replicas of actual codling moth



APPLE MAGGOT AGENDA FOR 1995
as proposed by Orel Vallen

A belated thanks to all you people who helped and cooperated with the program in the summer of 1994.

I was hoping there would be a summary in the newsletters from Susan Miller, WSU Integrated Pest Management Specialist for King County, with the laboratory findings on the different insects caught last summer, but I know she is snowed under with different jobs and studying.

All the sticky bags were taken to the WSU lab at the Center for Urban Horticulture (CUH) for classroom study. I sent in 40 specimen of apple maggot for sexing; the count was 40 females. Figuring 200 to 500 stings per fly, someone must have come out ahead of the game.

To benefit the ones who forgot?? about the Fall Fruit Show, I had an area map from Puget Sound east to Benson Highway; on the south from Federal Way north into SW Snohomish County, using red-headed pins for districts and area designations of orchards with fly catches. Caught 1810 in King County and 6 in SW Snohomish County. This area covered 38 back yard orchardists.

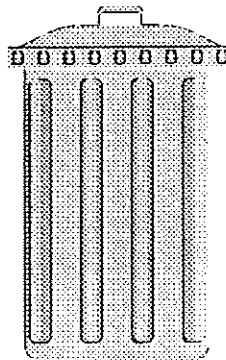
The 1995 program will start the last week in June, continuing possibly to October 6th. I will help you get started by bringing all the material required, selling at cost, the bags, scent and insect brush-on Tangle Trap. It would help me if you have pieces of plywood - 3/8" through 5/8" thick, and can cut it into 5 1/2 x 9" (cut 3/4" plywood 5 1/2" x 8 3/4" so they will fit into the bag easier), fill the edges with putty, etc. and apply one coat of white exterior primer paint. I will pick them up and apply the lemon yellow fluorescent paint, when I leave the finished boards.

We will need to make arrangements for people wishing to participate who live too far for me and the old car to deliver free. Possible to meet someplace?

I intend to have the scent on hand by June 1, and deliver an eight (8) week supply. You will need a small jar with a screw on airtight cap for the scent (crystal form which evaporates rapidly). Examples: horseradish, baby food, tall spice jars. If I furnish the TANGLE-TRAP (1 pound per 34 traps) you will need a larger mouth jar with no shoulders such as marshmallow creme, peanut butter, etc. You will need a small jar for mixing the scent and TANGLE-TRAP together. More than a day's supply should not be mixed as it evaporates and loses its strength. New mixture should be made every two weeks, old bags discarded and new ones put on. This mixing container should accommodate a 1 1/2" brush, it should have an air tight lid for any left over mixture, and stored in the refrigerator. After using the brush, store it in a dust free container.

As mentioned above, make sure that if you purchase the TANGLE-TRAP for insects it is the brush-on formula. The only place to my knowledge that it could be purchased (last year) was McLendon's Hardware. Five stores; Tacoma, Sumner, White Center, Renton, and Woodinville.

Remember, one of our best tools against Apple Maggot is "Clean Culture" practiced daily; pick up and contain---eliminate from the ground--destroy permanently.



BITS AND PIECES

A MEMBER WRITES

"Dear Editor:

The other week I received my winter 1995 edition of the WCFS newsletter, and I immediately noticed that only the last three full pages of the 27 page edition had survived its journey with the U.S. Postal Service. Normally, I would have let this issue go after some cursing and muttering. But in this instance, I noticed in the index on the back page a most interesting article on page 18: "Amateur Fruit Organizations in Europe". I guess I'm still waiting to read this article. Would it be possible to send a out a second mailing of the Winter Newsletter to me or a zerox copy of that page? I would really appreciate your cooperation in this matter.

Also, are you aware of any members ordering and receiving scions or budwood from Europe? First of all, I don't know if this is feasible, but I need to ask the questions. I have just received The Book of Apples by Morgan and Richards (1993) and I am intrigued by a number of apples that are listed in their book that are not available in the United States (as cross referenced by the Fruit, Berry and Nut Inventory, Second Edition). I am especially interested in Irish apples; grafts of Allan's Everlasting and Browns Crofton would be a major achievement for my orchard.

Keep up the good work on the newsletter. I have seen steady improvement in the quality of information provided to the readership since I started my subscription in the mid-1980's.

Best Regards,

Michael S. Mullen 23500 Ridge Road Willets, CA 95490"

Editor's note: Mr. Mullen's letter was presented to the U.S. Postal Service Customer Service representative. He apologized, stating he didn't know how it could have happened and offered to send another newsletter to Mr. Mullen first class mail, which I accepted, as I just happened to have another one with me. If any other members experience what Mr. Mullen has described happened to his newsletter, please contact me, or if you just don't receive yours, contact me. As to the other questions he asks -please write to him if you have any helpful information and share it with him.

USING PARAFILM FOR GRAFTING During the recent Spring Meeting at Puyallup attendees may have seen Leonard Jessen and Erik Simpson, the grafting volunteers, using Parafilm to wrap the graft joints and scionwood as they grafted. They have had good success using this material rather than the various commercial grafting seals on the market.

This material is available through Scientific Supply and Equipment, Inc., 926 Poplar Place S., Seattle, WA 98144-2830. Phone: (206) 324-8550. A 2" wide by 250' long roll sells for \$20.25, a 4" wide by 125' long roll sells for \$20.00.

Chuck Parkman

ROOTSTOCK NOTICE to those of you who took some of the rootstock and scionwood to make trees for next year's sale. Chuck Parkman spoke with Gary Moulton about our left over rootstock fruit trees that some of our members are grafting and growing for one year. Gary advises that light, frequent nitrogen fertilizer be applied to get maximum size on the trees, with the result of a better price at the next Spring Sale.

REGARDING "THE APPLE BOOK" BY ROSANNE SANDERS

This book, used by the "Apple Identifiers" at the Fall Fruit Show, is out of print as I was told by a bookstore in Portland which has used books as well as new. They will keep my name on file in case one shows up. In addition I have written to the Fruit Group of the Royal Horticultural Society in London asking for help in locating the book. Mrs. Joan White responded right away, stating first of all that in the U.K. the book is titled "The English Apple", then quoting the Publisher, Phaidon Press, that it is now 'reprint under consideration'. Mrs. White referred two second hand booksellers whom they recommend to their customers: Mike Park / 351 Sutton Common Road / Sutton, Surrey SM3 9HZ, and Daniel Lloyd / 9 Northlake Terrace / Kew, Richmond, / Surrey. More information as I get it!

WSU 1995 CROP PROTECTION GUIDE for TREE FRUITS in WASHINGTON

Publication EB0419 is now available for distribution at a cost of \$3.50 per copy. The 96-page guide offers information on the pesticides, plant nutrients and growth regulator materials that may be used on apples, pears, cherries, prunes, plums, peaches, and nectarines in Washington. Pesticide safety, restricted entry intervals, and regulatory information are included, as are sections on hazards to bees and plants. WSU has issued this bulletin annually since 1950. Last year we offered it at a group purchase, (orders of 34 or more would receive a 25% discount). There were not enough responses to warrant a group purchase offer again. The pamphlet is available at WSU Extension Offices. Three or more pamphlets may be ordered directly from: Bulletin Office / Cooperative Extension / Cooper Publications Building / Washington State University / Pullman, WA 99164-5912 Please provide street address for UPS delivery.

Ed. note-basically this is a guide for orchardists, (we have several members with large orchards), rather than the home orchardist. We try to serve all our members.

1994 RESEARCH RESULTS

Washington State University - Mount Vernon, WA 98273
G. A. Moulton, J. King, and B. Gunderson

Ed. note: This report does not include the variety evaluation due to space restrictions. The complete evaluation is available, for a modest fee, for all fruit research or each separate section on the different kinds of fruit. Contact Jacky King for details.

The 1994 weather pattern produced many cool, damp days at bloom time, followed by very warm and dry weather in late spring and summer. Pollination did not seem to be a problem and fruit set ranged from moderate to good. The weather at harvest was good to excellent, and the harvest was as much as two weeks early in most cases.

APPLES: Two McIntosh-type introductions that first fruited in 1992, **Redmax** and **Acey Mac** are both showing good productivity; **Redcort**, an earlier introduction, has consistently produced good quality, well colored fruit. **Ginger Gold**, an early Golden Delicious type, did better this year than in 1993, but needs to prove itself on a long-term basis. The same can be said of **Golden Supreme**, which had very good, sweet flavor and attractive appearance but may not adapt well in cooler seasons. Red sports of **Elstar**, **Daliter** and **Daliest** continued to perform well, though productivity was somewhat lower this year. A golden russet type first known in the early 1800s, **Reinette Grise du Canada (Canada Gris)**, was again very late ripening despite the unusually good conditions. Its high acidity is best suited to culinary uses. Though they were young trees with only a few fruit each, several new BC selections that resulted from the cross of **Gala X Splendor** looked very good, and we hope to see more fruit from them in 1995.

Addition of fertigation to some areas of the orchard produced encouraging results in terms of improved size and in some instances better quality. An example was **Empire**, which produced some of the best fruit we have seen from that variety. Some varieties with **Cox** parentage, **Alkmene** and **Karmijn de Sonnaville**, experienced more than usual sunburn and watercore, which reduced storage life especially in the latter variety. **Fiesta**, however, was exceptionally good; trees were uniformly productive and the fruit large, well colored, and high in flavor. **Fuji** performed very well for us this year, with sweet flavorful fruit and good keeping quality.

Ed. note: A total of 113 varieties of apples are included in the complete evaluation report.

DISEASE RESISTANT APPLES: The planting of disease resistant apples was begun in 1990 with cultivars and selections representing the work of apple breeders in the United States and elsewhere. This is the most comprehensive single-site planting of disease resistant apples in the state, and provides an opportunity to observe the performance of these varieties in the disease-prone environment of western Washington. We have been fortunate in receiving the support of the Western Cascade Fruit Society and the Western Washington Tree Fruit Research Foundation to maintain this planting, collect relevant data on the different varieties and selections, and make the results available to interested persons.

In the current trial the most promising varieties are **William's Pride**, an early ripening dark red apple with very good flavor and firmness, though not suited for long keeping, and **Enterprise (Coop 30)**, late ripening, also dark red, very firm and of excellent quality especially after about a month in storage. Selections from the Geneva, NY breeding program that also look promising are **NY 74828-12**, **NY 65707-19**, and **NY 75414-1**. We are in contact with the research station there to see if any or all of these may be a future introduction. **Liberty** is consistently flavorful, reliable, and productive.

The 1994 harvest produced sufficient fruit from most of the trees two years and older to conduct evaluations of fruit quality and harvest maturity. (Ed. note: 54 varieties are evaluated in the complete report).

APRICOTS: **Puget Gold** and **Harglow** were the only varieties to set fruit in any significant quantity. The aprium variety **Flavor Delight**, which produced a fair crop in 1993, had no fruit at all this year. Among the apricots, **Harglow** and **Puget Gold** were clearly the best. Trees of **Harglow** were transplanted to a new plot in the spring of 1994, so even though they bloomed and set some fruit, the productivity was not as high as last year.

In 1990 a test plot of **Puget Gold** was planted, consisting of 18 trees on 3 rootstocks: **Lovell**, **Mariana 4001**, and **St. Julien A**. These trees are now in mature production, and noticeable differences in productivity, tree vigor, and tree survival were observed. A preliminary evaluation in 1993 found that of the 6 trees on **Lovell**, 5 were healthy and fruiting; on **Mariana 4001**, 4 trees were healthy, 1 died and 1 was taken over by rootstock after the top became diseased. **St. Julien A** had the poorest record; only 2 trees were healthy, 2 died, and 2 more are diseased and unlikely to survive.

This year we were able to take yield records as well as a rating of tree vigor and survival. Both Lovell and Mariana 4001 were virtually identical in productivity, tree vigor, and survival. St. Julien A was much poorer both in the areas of tree survival and in overall productivity. Based on these results, St. Julien A is not considered a good rootstock for **Puget Gold** apricot. Citation rootstock, another popular stock for stone fruits, was not included in this trial but we would like to do a similar comparison with it sometime in the future. (Ed. note: Fifteen varieties are evaluated in the complete report)

ASIAN PEAR: Supplemental irrigation was provided as needed during August and September. **Hamese #1** was very early this year, and produced a heavy crop of fruit. **Ichiban Nashi** was well thinned, so fruits sized well and were of high quality. **Shinseiki** and **Chojuro** both produced good quantities of well sized, flavorful fruit to set the standards for overall performance. **Yoinashi** produced a good quantity of attractive tawny-skinned fruit with excellent flavor. After final evaluation and discard of a number of varieties that performed poorly in recent years, or that proved too susceptible to disease, the number of varieties in the Asian pear planting has been reduced approximately by half. We will be looking for any promising new varieties to add in 1995. (Ed. note: 12 varieties comprise the total evaluation).

PEAR: From May through September supplemental irrigation was provided as and where needed. In the very early season, **Harrow Delight** provided a full crop of very good quality fruit. Size was a bit better, but it is now clear that this is a highly productive variety, and needs limb support to keep loaded branches from cracking. **Orcas** and **Rescue** upheld their record both for productivity and good size. All trees of **Bosc** were very productive, and the fruit large, attractive, and fully russeted. **Red Comice** produced a full crop for the first time, though red color was streaky and poor (less than 20% on most fruit.) Among the other red-skinned pears, **Starkrimson** (Kalle strain of red Clapp Favorite) performed well as usual: colorful, uniform, reliable, and productive. **Cascade** cropped well, with medium sized, very well colored fruit, and a good flavor reminiscent of its parent **Comice**. (Ed. note: Thirty one pear varieties evaluated).

A new pear block testing the commercial possibilities of **Bosc** pear for commercial production using different rootstocks and training systems was planted, with the help of funding from NARF. Included were pollinizer varieties **Comice**, **Conference**, **Concorde** and **Starkrimson**. Some ornamental pear varieties may be added in 1995 to test as possible pollinizers as well as for landscape purposes.

CHERRY: Fruit damage and cracking were relatively low overall. Again the major destruction was by birds, with harvestable fruit remaining only on those varieties that were netted. Netting of individual trees, though the only option open at present, is both labor-intensive and impractical, especially for large mature trees.

In terms of both productivity and quality, **Angela** is the most reliable of our current varieties. Fruit size tends to be small, but the consistent high yield and low cracking rates make it one of the best for home gardens. **Viscount** performed well this year, very sweet and firm; it is less productive in some years but still acceptable. **Kristin** was very good in flavor and sweetness, quite productive, though some rot developed where fruits were closely clustered together. The young trees of **Tulare** produced large, sweet fruit of good quality, and very firm, but in a rainier summer might be more likely to crack on that account. (Ed. note: Twenty four varieties in complete report).

PEACH and NECTARINE: **Harrow Diamond**, the earliest ripening peach, was a transplant to a new block in spring 1994, and both fruit size and productivity were poor as a result. A new variety, **Sentry**, produced large, very flavorful fruit, with productivity to be evaluated in 1995. In the mid season, **Harken** and **Redhaven** were consistent in their performance, reliable and productive. **Newhaven** did well also, with a good set of high quality fruit. **Double Jewel** was a disappointment in its second year, with only a couple of small fruit despite its ornamental bloom. Among the leaf curl resistant clones, "**Tuma**" and "**Strahl**" were quite productive, and fruit quality reasonably good. Young trees of "**Proud**" peach were damaged by marauding goats, but the few fruit sampled were of very good flavor and quality. We look forward to seeing the 1995 crop. (Ed. note: 29 varieties of peaches are included in the complete evaluation).

Juneglo and **Nectared**, early season nectarines, were transplanted to a new block in 1994 and as a result did not produce a crop. In the mid season, **Summer Beaut** looked good again, though fruit production was modest. **Mericrest** had good flavor but color was on the dark side, with some skin cracking. (Ed. note: **Harko** is the 5th variety in the study).

PLUM: Of the Japanese types, **Shiro** and **Beauty** again proved their reliable production and fruit quality. **Seneca** is the best all-purpose plum of the European type, good for fresh eating, drying, and canning. **Valor**, another Italian type in the late season, produced a heavy crop of large, sweet fruits. **Redheart**, which had not produced well in 1992 or 1993, set a heavy crop of fruit, sweet and very juicy. However, conditions for the pluots **Flavor Queen** and **Flavor Supreme** were unfavorable and they did not set any fruit this year. (Ed. note: Two pluots and 21 plums in evaluation study).

CRABAPPLE: This year saw the beginning of Phase II of the National Crabapple Evaluation Program at Mount Vernon. Additional trees that we received from NCEP in 1993 that had been planted in temporary sites were consolidated into the crabapple block, the last discards from Phase I were completed, and trees that had to be moved were transplanted, with the valuable help of a loyal volunteer cooperator. Most of the trees transplanted were large, dating from the first planting in 1984, and it may take a season or two for them to recover from the move. Overall, however, the planting is in good condition and the new young trees bloomed profusely, giving some indication of their future performance.

We were very pleased to receive further grant support for this project, \$3,000.00 from the Washington State Department of Agriculture to cover the expenses of plot maintenance, data recording, and public information. In addition, CWNII provided a specific research grant of \$1,900.00 to conduct a pollination trial for suitable crabapples to use in commercial orchards. We also added to the Phase II planting some cultivars not part of the NCEP trial, including local seedlings that we considered worthy of propagation and trial. We hope in future to add several disease resistant crabapples from the PRI breeding program. Final discards were made from the current crabapple plot. (A complete list of discards is available in the complete report).

Trees planted in 1993 had sufficient bloom to form a first impression, and the 1990-91 plantings continue to show promise. (Ed. note: There are currently 39 varieties listed in the study; three new plantings include **Pink Cloud**, a seedling, source-our very own Ed Lewis! 1991-92 discards numbered 18, 1992-93 discards-15 and 1993-94 discards were 5. Evaluations on each variety - and reasons for those discarded - are included in the complete evaluation.

NEW SUPERINTENDENT AT WSU'S PUYALLUP RESEARCH CENTER

C. Alan Pettibone is the new superintendent of the Washington State University Puyallup Research and Extension Center, WSU Long Beach, and the Mt. Vernon and Vancouver Research Units. Dr. Pettibone was previously WSU extension specialist and interim assistant director of WSU Cooperative Extension for agriculture and natural resources. He previously served the college as chair of agricultural engineering, associate dean and director of resident instruction, and acting dean.

Pettibone was director of the Washington State Department of Agriculture from 1985 to 1993. A former member of the Governor's Executive Cabinet, he has more than two decades of experience in government and education.

The new director takes over for Arlen Davison, who will continue to work on special projects as an assistant dean of the WSU College of Agriculture and Home Economics until he retires May 31. Davison has been the center's superintendent since 1987.



APRICOT SEEDLING PROJECT

The tree fruit program at WSU Mt. Vernon has acquired 500 apricot seeds from 5 different apricot varieties and selections. These seeds are in the process of stratification, to produce seedling trees later in the year. This is a new project aimed at finding apricot varieties that are better adapted to our climate conditions, with later bloom, disease resistance and high quality fruit.

We would like to hear from anyone who is interested in helping us with the evaluation of these seedlings. Their commitment would be for a minimum of 7 years, since seedlings take longer to begin fruiting than grafted trees. Evaluators would receive from us 10 seedling trees to plant out (or more on request, if the area available to them is large enough), at a spacing of not less than 4 feet between trees, but preferably 8-12 feet. When trees begin fruiting, we will provide evaluation forms so that factors such as bloom time, harvest season, fruit size and quality, and disease problems can be recorded uniformly among all the evaluators.

After the trees are producing, if any of them turn out to be worth naming and introducing, we hope to cooperate with the evaluators in obtaining propagation rights, which could be used to support continued research in the tree fruit program.

Interested persons can send their name, address and telephone number to:

Fruit Horticulture
WSU-Mount Vernon
1468 Memorial Highway
Mount Vernon, WA 98273

Participants will be notified when the seedlings are ready to be distributed.

LOW COST COLD STORAGE FOR FRUIT

by Jeff Donaghue, as published in Pomona, Fall 1994

Here is a bit of information which will help the avid fruit explorer to create his or her own precision cold storage environment. It is something I have adapted from my other interest, which is brewing beer. I have taken an external remote bulb thermostat and installed it on an 18 cubic foot chest freezer. The thermostat is for cooling, i.e. close on rise. I turn the freezer's own thermostat all the way up. With the external thermostat I can control the temperature inside the freezer from -30°F to 90°F. Accuracy is within two degrees. The temperature differential can also be adjusted. This makes it possible for you to decide how often the unit will cycle on. The thermostat costs me about \$32.00. You can use any freezer or refrigerator. I chose the chest type because of capacity and cost. Mine was \$50.00 at a garage sale. One cubic foot is somewhat less than one and a quarter bushels, so my 18 cubic ft. freezer holds about 22* bushels. 1993 was the first year I used this setup for fruit storage and I was pleased with the results. Temperature is particularly important for the storage life and quality of pears, my "crop" of choice. I have also thought of using carbon dioxide, which I have for kegging and dispensing my homebrew, to purge oxygen from the freezer, but I'm not sure if that would help. I will be happy to send more detailed information for a SASE.

* An error in math, corrected in additional information, to 14 1/2 BUSHELS.

Larry Barello of North Olympic Fruit Club sent for the additional information (as did your editor) and he has submitted the following article. It consists of the original article, and the additional information, which he has revised and condensed (which your editor did not do) for The Bee Line. Many thanks, Larry.

Any freezer or refrigerator can be modified with a "close on rise" (cooling) thermostat. A chest type freezer is best suited because when the door is opened in an upright freezer or refrigerator the cold air will flow down and out the bottom of the door opening, whereas in a chest type the cold just settles in there.

Make an adapter power cord for use between the freezer power cord and the wall outlet. Use a short (approx. 5 - 6 ft.) 3 wire appliance cord with a male and female plugs. Cut the black (hot) wire and hook the two ends to the thermostat connections. The white (neutral) and green (ground) wires are not disturbed. The thermostat sensing bulb is placed inside the freezer (drape the thin copper tube over the edge of the freezer - the lid will hold it down). If installing the bulb through the sidewall, take care not to puncture a cooling line when drilling the hole.

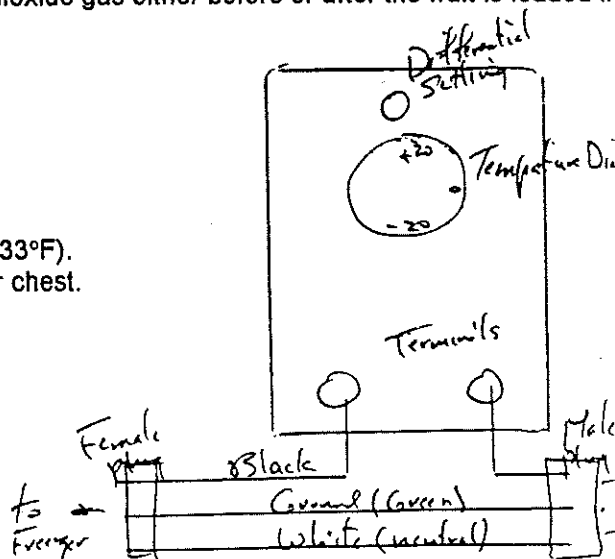
A Dayton SPST thermostat, number 2 E 740 (close on rise), approximately \$33.00, available through Grainger Electrical Supply. ("Close on rise" means that when the temperature rises to the pre-set point (desired temperature) the thermostat switch closes allowing the current to flow and the compressor operates. When the temperature drops below the pre-set point, the switch opens and the compressor shuts off.

No refrigerator or freezer stays the same temperature all the time, they cycle on and off to maintain the desired temperature. If the differential control is set for 1° F, the unit will be turning on and off quite frequently, with a possibility of burning out. To prevent this set the differential at 3° to 4° F and the unit will turn on at 36° to 37° and off at 33°F.

Its possible to purge the oxygen from the chest with carbon dioxide gas either before or after the fruit is loaded into the freezer.

Quick Review:

1. Turn freezer thermostat to maximum cold.
2. Plug freezer cord into adapter power cord.
3. Plug power cord into wall outlet.
4. Set thermostat dial to desired temperature (32° to 34°F).
5. Set differential setting to 3° to 4° F (turns on at 37°; off at 33°F).
- 6 Place thermostat temperature sensing bulb into the freezer chest.
7. Load fruit.



BUMBLE BEES (BOMBUS) NESTS FOR OUTSIDE USE

by R. Welland, The Cider Press - Winter, 1995

GENERAL INFORMATION

Bumblebees are very efficient pollinators. They work flowers that have no nectar unlike honeybees. They also grab the anthers of flowers and shake them, which is necessary to free pollen in some blossoms. Bumblebees will work on cool, overcast days while honeybees remain in their nest.

The accompanying drawings illustrate some of the basic needs of the Bumblebees for an outside nest (nests in greenhouses are slightly different as they are out of the weather and the bees are captive in the greenhouse), but are suggestions only. An "ultimate" Bumblebee nest will only come about as a result of trial and error and careful observations by interested individuals like members of B.C.F.T.A. (and W.C.F.S.-ed. note!). A supply of dry insulation* material in a dark undisturbed area is the bees basic requirement. Also desirable is limited access for defense purposes. Two chambers are also helpful. This provides them with a vestibule area where they can defecate, rather than contaminating their nest area. Other features that add to the attractiveness are a tunnel entrance, protection from the weather, ventilation and colour contrast at the entrance. Several studies seem to indicate that a "pattern or marker" of some type at the entrance helps the bees with orientation and location of the nest. A couple of colours they seem to like are pale yellow and mauve. But again, only time and experimentation will reveal the ultimate solutions. Last but not least is hygiene. Nest boxes must be sterilized and contaminated items disposed of each year. Consequently it is suggested that you **DO NOT USE PLYWOOD** unless you plan to replace it each year. It has been found that plywood cannot normally be properly sterilized.

*The drawings show upholsterer's cotton which is readily available at upholstery shops and is relatively inexpensive. Nevertheless, several people have observed that the Bumblebees seem to be quite happy with fiberglass insulation (in the walls of sheds). This is an area that needs more field trial and observation. It could be that different Bumblebees prefer different material.

NEST

Nests must be dry and well insulated because Bumblebee larvae are very sensitive to temperature extremes. If the temperature drops below 30° C (54° F ed. note) (bumblebees create their own heat), the young will be stunted.

As with any collection of bees, cleanliness is very important. This is particularly true with bumblebees as they will defecate in their nest area. Therefore, the nest should have two chambers; a vestibule chamber where the bees can defecate and a nesting chamber. Nest chambers should be about 6" x 6" (15 cm x 15 cm) or slightly larger. the vestibule can be slightly smaller. A landing surface at the entrance is an attraction, particularly for inexperienced foragers. The use of a tunnel entrance with no steps allows the colony to better protect itself. The ideal entrance diameter is 5/8 of an inch (16mm) but no larger than 3/4 of an inch (19 mm). The inside divider need to be rough so bees can get a grip when they climb over it. Make sure adequate weather protection is provided (e.g. overhanging roof). Paint around the entrance hole to provide a colour contrast; an "orientation pattern" seems to be even more attractive.

TIPS

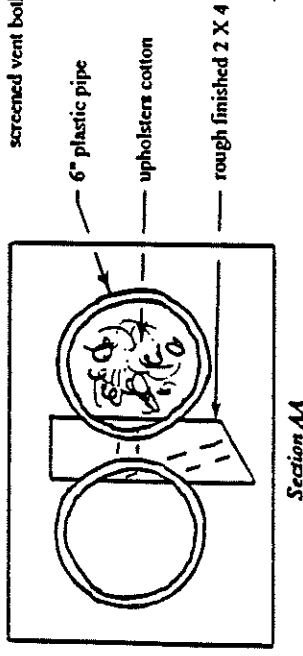
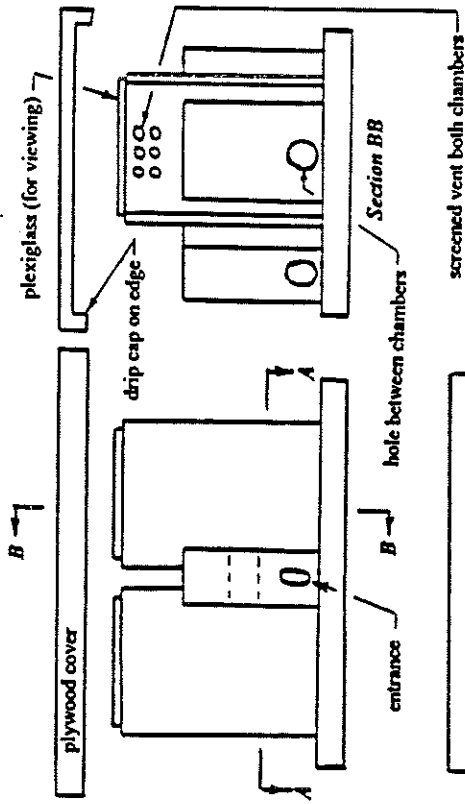
Let your nest box "weather" outside for awhile before you put it into use. this will allow any paint or caulking odours to dissipate. Set nest out in the early spring when the first flowers, such as Willow, are starting to bloom. Bumblebees may search all day long for up to two weeks to find an "ideal" nest site.

If you are planning to introduce a Queen to your nest, rather than taking a chance that they will find it, it has been suggested that you get a bee without pollen in her "baskets". The theory is that Bumblebees with pollen in their "baskets" have already chosen a nest site and consequently will not stay in yours. This theory may be true, but still needs some more research.

Bumblebees are very fickle. They may use your nest one year but not the next. Also, if they find a better location before they are really settled in or if they are too badly disturbed, they will move. If you get one box in three occupied, consider yourself lucky. **DO NOT** take the cover off your nest (once the Bumblebees have started nesting) more than once a day or the bees will probably vacate.

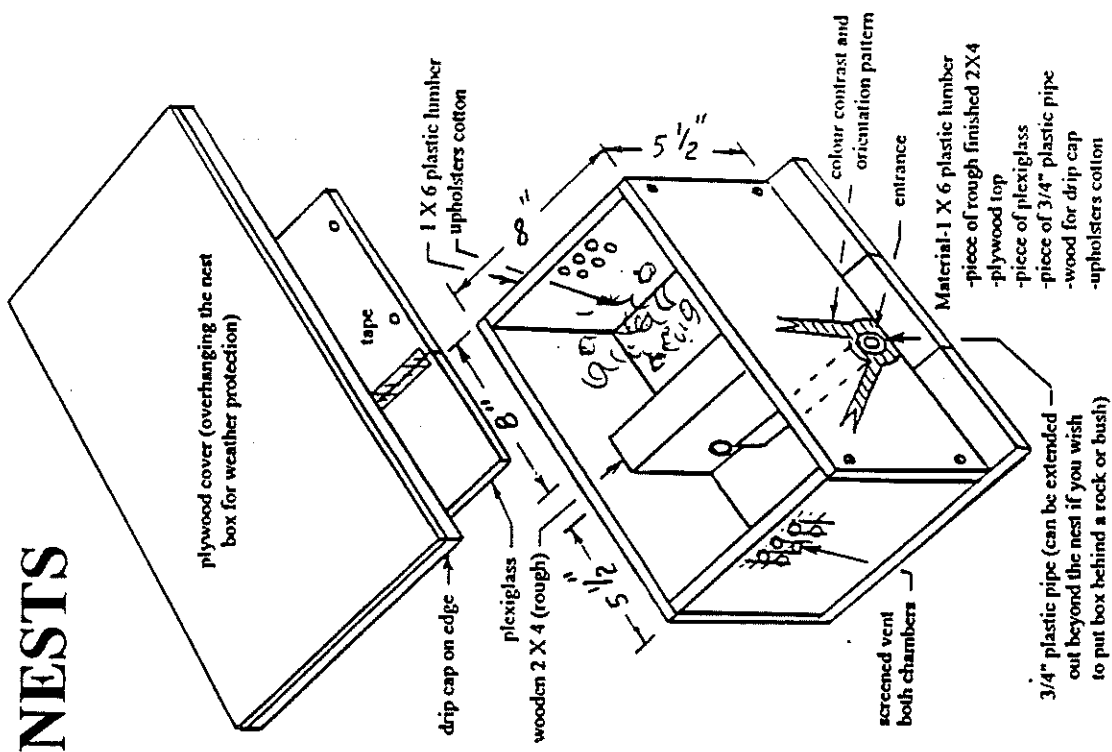
(Ed. note: The plastic lumber mentioned is distributed by Vanco in Edmonds, WA (206) 771-1412. They will let you know where it is available. The cost is \$1.60/foot for 1x6. We are trying a coating of varathane for wood protection for sterilizing the nest after use. Will let you know how it works.)

BUMBLEBEE NESTS



- Material-2 six inch dia. pieces of plastic pipe
 -plywood cover
 -piece of rough finished 2 X 4
 -2 pieces of plexiglass
 -mounting plate
 -wood for drip cap
 -upholsters cotton

Notch plastic pipe to accept the 2 X 4. Drill 5/8 inch hole from one end of the 2 X 4 at an angle to form the entrance. In the centre of the 2 X 4 near the top edge, drill a 1 inch hole to provide a connection between the chambers. Drill vent holes in the plastic pipe (so there will be ventilation at either end of the nest unit). Cover holes with fine screen. Assemble pipe sections and 2 X 4 on the base plate using a caulking compound such as silicone seal. Secure the plexiglass in place on the nesting chamber using silicone seal (plexiglass on vestibule should be left free so it can be removed for cleaning). Place a cut to fit piece of disposable corrugated cardboard on the vestibule floor (this will allow for easy clean up of this area). Place plywood cover on top. Weigh down the top with a brick or stone so it will not blow off in a wind.



Construct the lower box using 1 x 6 plastic lumber. Screw unit together (using a small amount of silicone seal in the joints). Cut a piece of rough finished 2 X 4 to length. Secure it in place using silicone seal. Drill hole to suit and insert piece of plastic pipe. Drill vent holes in either end and cover with fine screen. Put upholsters cotton in the nest compartment. Put a cut to fit piece of disposable corrugated cardboard on the vestibule floor (this will allow for easy cleaning of this area). Secure the plexiglass over the nest area with screws. Using tape as a hinge, position the plexiglass over the vestibule area (this will allow access to the vestibule without disturbing the nest area). Place plywood cover on top. Weigh the top down with a brick or stone so it does not blow off in a wind.

DWARFING CHERRY ROOTSTOCK MAKES ITS DEBUT

by Lee South as published in Fruit Grower June, 1993

Giesla, a series of dwarfing cherry rootstocks from Germany being warmly welcomed into this country, may do for the sweet and tart cherry industry what the Malling and other dwarfing apple rootstocks have done for the apple industry.

So says horticulturist Wally Heuser, who has been working to introduce Giesla into the U.S. since 1980. "The Giesla is an extremely exciting group of rootstocks which show great promise for the cherry industry," Heuser says. Two potential advantages account for his enthusiasm:

Dwarfing characteristics - The series produces trees in a dwarfing range from 20% to 100% of a standard Mazzard seedling, according to Ron Perry, associate professor of horticulture at Michigan State University. Heights may vary somewhat with scion varieties, climate, and soil conditions, but the Giesla rootstocks have been found to be highly successful overall in producing smaller trees in a range of sizes.

Early bearing characteristics - The semi-dwarf and full dwarf sweet cherry trees trialed in the NC-140 Research Program produced fruit in their third year, as opposed to the sixth and seventh years with standard cherry trees, says Robert Andersen, professor of pomology at Cornell University.

A BETTER, SMALLER CHERRY TREE Werner Gruppe, former professor of horticulture at the University of Giessen in Germany, began collecting and hybridizing prunus species more than 30 years ago, with the goal of developing new and better cherry rootstocks having dwarfing characteristics. His test scion, Hedelfingen, is one of three varieties being evaluated in a series of cherry rootstock trial locations called the NC-140 Rootstock Research Program, organized and coordinated by Perry. Bing sweet cherry and Montmorency tart cherry are being evaluated in 16 different sites in the U.S. and Canada, against such standards as Mazzard and Mahaleb.

A limited number of rootstocks were available for propagation and establishment in 1987: some sites have as many as 25 rootstocks, while others are testing 10 to 12 rootstocks. Those being tested include several Giesla clones, GM clones, and MxM clones (Mazzard x Mahaleb hybrids).

While cherry producing states in the Midwest, East, and Canadian provinces are using Hedelfingen grafted to the rootstocks for their experimental plantings, Bing is the variety being tested in California, Washington, and Oregon. (Bing on 148-1 in Washington is similar in size to trees propagated on Mazzard seedlings. Hedelfingen/148-1 in Ontario is also the same size as Mazzard seedlings.)

Thus far, the most promising rootstocks are from Giesla. The "favorites" among Giesla stocks vary with locale and variety grafted. In Michigan, Heuser feels that 148-1 and 148-8, both in the intermediate-size tree range, are the most available and the most promising. Andersen says that 148-1 looks good in New York, and likes the 148-8's he's seen in Michigan, California, Washington, and Oregon; availability precluded its planting in New York, but he is sure it will do well there also. Andersen is also impressed with 196-4. It's not as small a tree as 148-1 and 148-8; however, it would be an excellent alternative for growers interested in early-bearing rather than high-density orchards. Giesla 172-9 is the most dwarfing.

Perry has not noticed any major variation in normal bloom time of the scion with the dwarfing rootstocks. Reflecting on what weaknesses Giesla might be heir to, Perry has some concerns regarding the possible interaction between the rootstock and variety susceptibility to *Pseudomonas* canker. Fairly common in sweet cherries, the canker causes necrosis of terminal branch portions, and can spread to the bark, trunk, and the entire tree over a two-to-three year period.

Additionally, some flooding experiments were conducted (unpublished) for a Ph.D. dissertation at Michigan State University by T. G. Beckman, which indicated that many of the 148 series were highly sensitive to wet soil conditions. Cummins (1986) reported that 196-4 was highly susceptible to *Phytophthora cambivora* and *P. megasperma*. Some other Giesla series were found to be highly resistant (1986, *Compact Fruit Tree*, Vol. 19:90-97). Preliminary studies suggest that these rootstocks should be planted in well-drained soils.

CAUTION URGED BY RESEARCHERS Perry, preparing to publish the findings of researchers involved in the NC-140 program in *Fruit Varieties Journal* this summer, stresses that growers should take a conservative approach to the new rootstocks. "While the rootstocks look great, and are performing extremely well in all locations, the conclusions to be drawn from the NC-140 data are, of necessity, extremely preliminary. Our earliest U.S. plantings were made six years ago, and, especially where sweet cherries are involved, there's a period of at least seven years before any determination as to delayed incompatibility between scion and rootstock of the graft union can be made," Perry says.

Andersen agrees. "While the trees from these two scion varieties are much more precocious, it must be remembered that these two varieties are the only ones we've really tested. We need growers to go ahead and plant other varieties, but to do so in a way that recognizes that they shouldn't bet the farm on them. Even with the Bing and Hedelfingen plantings, we are not at the stage where we know how durable the grafts are going to be," he says. He adds that researchers are less concerned with Hedelfingen's compatibility, because of the years of testing it underwent in Germany.

Andersen says that Heuser's organization, Giesla, Inc., is a step in the right direction because "its primary role is to draw the grower community together with the extension and research community into a network whereby a feedback of information - what scion varieties work on what soils, for instance - can take place."

WHAT ABOUT TART CHERRIES? Although the Giesla series appears to have more potential for sweet cherries, Perry is not ruling out opportunities to use it for Montmorency or other tart cherry varieties. Because tart cherries, unlike their hand-picked sweet cherry siblings, are typically mechanically harvested for processing, tree size has never been a limiting factor, Perry says.

"But with the pressure from environmental advocates to control spray drift and prevent atmospheric pollution, future regulations may restrict the chemical spraying of large trees without some sort of drift control. From that viewpoint, introducing any of these dwarfing rootstocks with say, Montmorency, to produce a smaller canopy tree may become an attractive option," he says.

The NC-140 research group has a second planting scheduled to evaluate all the newer clones developed from the original NC-140 tests within the next two to three years.

NEWS FROM MT. VERNON ON GIESLA (also spelled Gisela)

Jacky King writes that they are testing five Giesla dwarfing rootstocks: 148-1, 148-2, 148-8, 148-9, and 154-7. The latter two are reported to be even smaller, less than 50% normal tree size. She adds that while they may not be practical for commercial growers, they might prove to be well suited for home garden trees. Many thanks to Jacky for taking the time to forward this information. Below is additional information, forwarded by Jacky, on the first three rootstocks listed, from the German company that holds propagation rights (Consortium Deutscher Baumschulen).

- Giesla 148-1**
- *produces a semi-dwarf tree approximately 60% of standard
 - *stimulates very early blooming and heavy blooming
 - *makes a spreading well anchored, hardy tree that seems to do well on a wide range of soils
 - *tolerates very heavy soil and waterlogging well
 - *moderately susceptible to collar rot (*Phytophthora cactorum*), but seems to have good resistance to crown gall (*Agrobacterium tumefaciens*)
 - *suckering is not a problem with this stock
 - *compatibility with all varieties grown to date shows no problem
 - *reports from all areas consistently indicate early precocity and very high bloom density
 - *yield efficiency is very good
 - *fruit size holds up well with the heavy cropping

This is currently one of the most promising stocks based on reports from New York, Michigan, Washington, Oregon and California.

- Giesla 148-2**
- *This stock has been introduced in Germany and named Gisela 5
 - *This stock produces a very precocious tree about 50% or slightly less in size
 - *Tree shape is open and spreading with wide angles and good side breaks of shoots
 - *German data shows very good hardiness and adaptability to heavy soils and tolerance of waterlogging
 - *Anchorage is not great and this stock may need to be supported
 - *Research done in Germany reports that this stock is quite tolerant to virus infection
 - *Some suckering may occur under certain conditions
 - *It has induced the highest bloom intensity and 2nd highest yield efficiency in California plots, and this pattern is quite similar in other areas
 - *Fruit shape has been good
 - *Fruit size is as good or better than normal
 - *Variety compatibility testing is limited, but no incompatibilities have been found to date

- Giesla 148-8**
- *This stock is the star performer in the plots in Washington State
 - *It produces a very precocious, heavy bearing, spreading tree that will be 1/2 size or less
 - *Anchorage is good
 - *Some suckering, but probably manageable
 - *Hardiness is excellent
 - *Stock seems adaptable to a wide range of soil types and moisture levels
 - *Resistance to high soil conditions is very good
 - *Yield efficiency and bloom density are very good based on reports from all parts of country

GRAFTING TO CHANGE VARIETIES

BOB STEBBINS on Growing Good Fruit
as published in Good Fruit Grower

Sometimes it pays to read the columns written by other horticulturists such as John Wilton, senior consultant for deciduous fruits, MAF New Zealand. In the August 1991 issue of *The Orchardist*, he discussed the results of some research on grafting done by R. J. Gardner and others at East Malling in the 1940s. The research exploded some well established myths about grafting, such as that it is best done in the spring when the sap is flowing. At least in England, but perhaps not in colder climates, winter time grafting, when the trees are fully dormant, led to the greatest amount of new growth the following summer. Grafting after February led to progressively less growth of the scion.

The English research also showed that grafting where there is wood-to-wood contact, as in cleft or whip grafting, outperformed the types of grafting where there is only bark contact. However, since the bark will not slip in the dormant season, wood-to-wood grafts are the only feasible kind to be done then. The reason grafts made during dormancy perform better is that they become knit together by callus growth before the scion begins to grow.

According to Wilton, "The performance after grafting is directly related to the number of buds of the new variety inserted into the old variety". This statement seemed astounding to me! I have always used a three-bud graft, but no more!

Thickness of the scionwood is also important. The best scionwood was at least eight millimeters thick. Unfortunately, wood of Braeburn tends to be thin. This may be why some of my grafts didn't grow as much as others. I made 20 grafts in the January-February period of 1992, which was an unusually warm winter. All of them grew. The grafts were made from Braeburn scionwood which had been cut that same day. The grafts were unusually long and contained eight to ten buds each (see Figure 1). I decided to graft-over trees of Mutsu which had cropped only two times, since it was evident that this variety has too many drawbacks in our climate.

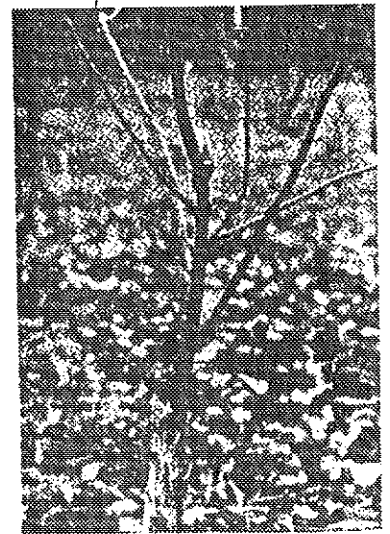
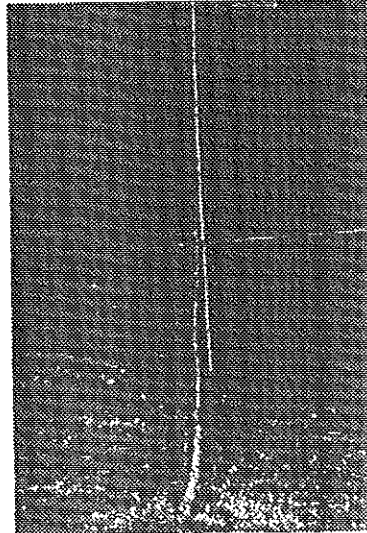
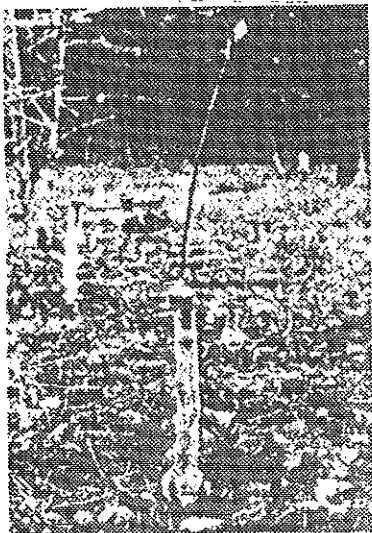
I cut off the four-year-old trees about 18 inches above the ground and installed a single cleft graft. All surfaces were sealed with GASHELL grafting wax, a product which is soft enough to be molded by hand over all cut surfaces, yet which does not crack. Repeated treatment to cover cracks is not required.

Ten of the 20 grafts grew taller than the highest trellis wire, which was at about eight feet (see Figure 2), and the others were not much short of the trellis wire by the end of the season. Only one graft refused to grow well. It made a height of about 18 inches. Because of the large number of buds, there were enough basal branches at season's end (see Figure 3) to form the first whorl of branches, at least in most cases. The grafts were supported by seven-foot bamboo poles attached to the trellis.

This past winter, I installed about 50 such grafts. As of May 6, 1993, all but one was growing. The grafts made in January 1993 had to survive some cold, snowy weather. It was so cold, in fact, that most of my trees of Royal Gala have bark splits. I am optimistic about their chances for survival. Meanwhile, I am doing some training and flower removal on the grafts set in 1992.

Incidentally, here are my reasons for not liking Mutsu. Maturity is toward the end of October when rains can be frequent, and wet fruits of Mutsu cannot be touched without leaving obvious bruises. They rain-crack badly where there is a spot of sunburn, and this variety is highly susceptible to sunburn. The trees are exceptionally subject to biennial bearing, even after early thinning. In addition, in some seasons, the fruit have very little flavor.

The work I have discussed in this article pertains mainly to the top grafting of very young, healthy trees. The article by Wilton discusses top-working older trees out on the limbs. Although I think that top-working of older trees is a questionable practice economically, there has been much interest in it recently. So, if you are interested in receiving a copy of the article by Wilton, send me a card at Dept. of Horticulture, Oregon State University, Corvallis, OR 97331-7304.



NAFEX 1995 MEETING
by Frank Kirby, 1995 Chairman

August 21 to 24 inclusive, are the dates for the 1995 NAFEX Convention in Penticton, B.C. The Penticton Trade and Convention Centre, which holds 3,600 is booked for the first two days, Monday and Tuesday, for speeches from leaders in the industry. Speakers from the Experimental Farm at Summerland, B.C. will talk, as well as other leaders in the industry.

At some of NAFEX's recent annual meetings, presentations were all done by the host institutions. At the 1995 meeting we are calling for full NAFEX participation. If members have a fruit or nut subject near and dear, they are asked to present it. Monday evening will be the time when NAFEX members who wish to speak will be allotted time and should contact Bob Purvis, chairman for this sector. Dr. Bob Norton has also come forward to speak on his favourite subject - Apples for the Year 2000. Brent Warner, B. C. Department of Agriculture and Fisheries will be talking on the Kiwi industry. Brent was one of the founders of the Kiwi industry in British Columbia.

The two days of bus tours will be centered on the industry, from the Canadian Experimental Farm at Summerland south. We will have a half day at the station, and visit leading orchards, wineries, etc. in the Okanogan Valley the remaining time. We will see commercial orchards with 1000 - 2000 trees to the acre. British Columbia has been and is still one of the leaders in fruit growing. We are sorry to say that no vehicles will be allowed to follow the buses on these tours. Safety regulations do not allow this practise. We have to book the buses a month in advance, so please get your registration in early.

Listed below are hotels, motels and R.V. sites where we have arranged special rates for 235 rooms. We worked hard to get these accommodations. Most places are booked for the summer as this area is a popular vacation spot with many activities going on. There is a hockey school at the same time as our convention. The second weekend in August is the Peach Festival, following our convention is the Ironman Canada Triathlon; plus Winefest, Ten Game Bowling Marathon, Summer Craft Show, Mountain Bike Championships, and so on. In other words, make your reservation early to be assured of a place to stay - this is up to you.

The Banquet on Tuesday evening, including entertainment, will be held at The Coast Lakeside Resort, a four star resort. It will be a served meal - no sitting out in the cold and rain as has happened in the past. All meals include appetizer, main course, dessert, tea or coffee, taxes and gratuities. To guarantee these prices we have to have confirmed, paid reservations by July 15. Please send cheques by this date. Thank you and enjoy.

For Monday Speaking Time: Bob Purvis 641 Hoffman Road Selah, WA 98942

For information about Penticton: Tourism Penticton 237 Power St. Penticton, B.C. V2A 7K9 Canada (604) 492-6893
FAX (604) 492-2722

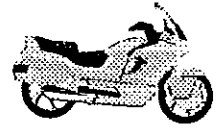
Hotels and Rates (Canadian Dollars):	Sandman Hotel	(2 double beds)	\$69.00
	1 (800) 726-3626	(1 double bed)	\$65.00
	Penticton Inn (Howard Johnson)	Standard Room	\$79.00
	1 (800) 665-2221	Superior Room	\$89.00
	Pilgrim House Motor Hotel	Single or Double	\$85.00
	1 (800) 665-4966	Located next to Golf Course	
	The Coast Lakeside Resort	Single or Double	\$120.00
	1 (800) 663-1144	15 Golf Courses!	
	Cherry RV Park	up to 2 people, full hookups, cable	\$20.00
	1 (604) 492-5811		

Rates quoted are for reservations made by July 15, 1995, after that prevailing rates apply.

Registration form for the Convention is on page 29

CARPOOLING TO THE CONVENTION

Chuck Parkman will coordinate transportation for those of you wishing to carpool, or who need a ride either to the convention or home. His phone number is (360) 452-6600, or write to him: P.O. Box 128 Carlsbord, WA 98324. There is a need.



RESERVATION FORM NAFEX CONVENTION 1995 AUGUST 21 - 24

PENTICTON, BRITISH COLUMBIA

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REGISTRATION:	Before July 15	\$20.00	Number _____	\$ _____
	After July 15	\$25.00	Number _____	\$ _____

BANQUET:	Breast of Chicken	\$22.50	Number _____	\$ _____
	Poached salmon	\$25.00	Number _____	\$ _____

FIELD TRIPS 2 Days @ \$10.00 per day Number _____ \$ _____

FIELD TRIP BOX LUNCHES \$ 8.00 per lunch Number _____ \$ _____

TOTAL \$ _____

Please note: Due to safety regulations no cars or trucks will be allowed to follow the buses.

Make cheques payable to: NAFEX Convention 1995
Mail registration and cheques to: NAFEX convention 1995
9181 Basswood Road
Sidney, B.C. V8L 3W8
Canada

After July 15, convention space or bus seats may be limited.

GROUP PURCHASE OFFER BACK BY SPECIAL REQUEST

THE BOOK OF APPLES

by Joan Morgan and Alison Richards Watercolors by Elizabeth Dowle

The apple is the most widely grown and used fruit in the world, taking an important role in the history of mankind for over 8,000 years. The authors present, in an interesting and readable style, a very complete history of the apple. This attractive book of 304 pages contains 32 beautiful, original watercolor plates of apple varieties - the blossom cluster, the fruit, fruits growing on the tree, and fruits at maturity. The text also is supported by numerous black and white pictures and drawings.

This is a "must" book for all lovers and students of the apple, and makes fascinating reading. It is a very complete and handy reference to the history and development of the apple, and the origin and description of ancient and modern varieties! The book is beautifully printed. The watercolor plates are outstanding!

The well researched treatise is organized into six chapters: The Fruit of Paradise, For Pleasure, Meate and Medicine, For God and Country, Apples of the Few, Apples for the Many, and The Cider Story. The second half of the book contains a Directory of Apple Varieties: an in-depth preface, explanation of keys used, and an alphabetical list of over 2,000 apples and a list of 100 cider apples grown in the orchards at the Brogdale Horticultural Trust in Kent, the largest such collection in the world. Provided for each variety are: name, synonyms, origin and history, fruit description, and growth characteristics. Both ancient and modern varieties are included. Although mainly about the apple in England and Europe, reference is made to Canada and the United States. Additional information includes cooking with apples, fruit growing, names of various apple collections, organizations and sources for nursery trees, and references to over 125 citations and to apple varieties. The index relates to the text and appendices.

Dr. Joan Morgan is an authority on the origin and eating quality of over 2,000 apple varieties in the collection at Brogdale. She also is the first woman to be invited to be a member of the Fruit and Vegetable Committee of The Royal Horticultural Society. Alison Richards is an award-winning radio producer and writer and has a special interest in the social aspects of gardening and cookery. Elisabeth Dowle is a botanical artist and winner of four Royal Horticultural Society Gold medals, including one for the paintings in this book.

The hardcover volume is published by Ebury Press Ltd., London. It is distributed in the U.S. by Trafalgar Square, North Pomfret, Vermont. The price in the U.S. is \$29.95 plus \$3.50 for shipping.

Reviewed by Dr. Loren D. Tukey, Professor Emeritus of Pomology, Department of Horticulture, The Pennsylvania State University; in Pomona Spring 1994 issue.

WCFS has arranged a group purchase. With a minimum of 5 orders total, our price is \$18.00 plus \$3.50 shipping (includes mailing to you). Please send order to: WCFS Treasurer / 18709 24th Ave S.E / Bothell, WA 98012. Orders should be received by **MAY 15, 1995** using the form below. Checks payable to WCFS.

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The Book of Apples \$18.00 Shipping \$3.50 Total enclosed \$_____

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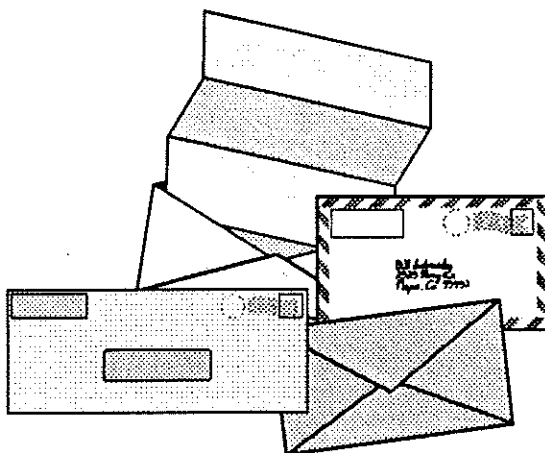
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If the DUE DATE on your mailing label is highlighted in **green**, your dues are payable before the next newsletter.
If it is highlighted in **yellow**, your membership dues are delinquent.
If it is highlighted in **RED**, this is your last newsletter. **DON'T LET IT HAPPEN TO YOU, WE'LL MISS YOU.**

INCREASED POSTAL RATES HAVE EFFECTED BULK MAILING ALSO. (AND WE PAID AN INCREASE JUST LAST OCTOBER.) IT IS VERY IMPORTANT THAT YOU LET US KNOW OF YOUR CHANGE OF ADDRESS AS THE POST OFFICE CHARGES 50 cents FOR EACH ADDRESS CORRECTION AND **TRASHES THE NEWSLETTER.** IT IS 78 cents TO SEND ANOTHER ONE TO YOUR NEW ADDRESS AND WE DON'T ALWAYS HAVE EXTRA COPIES. **SNOWBIRDS** YOUR NEWSLETTER IS TRASHED ALSO. LET US KNOW IF YOU ARE GOING TO BE AWAY "TEMPORARILY" SO WE CAN HOLD IT , OR GIVE US YOUR TEMPORARY ADDRESS AND WE'LL SEND IT THERE, IF YOU WISH.



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Apples Pears Peaches Plums Cherries Kiwis Nuts Berries Other: _____

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