



The Bee Line

NEWSLETTER OF

WESTERN CASCADE FRUIT SOCIETY

A NON-PROFIT EDUCATIONAL ORGANIZATION

Volume 21 Number 3

Fall 2000

Apples Pears Figs Grapes Kiwi Cherries Nectarines Peaches Plums Blackberries Raspberries Strawberries Blueberries Currents Kuckleberries Gooseberries Nuts

2000 FALL FRUIT SHOW

SATURDAY OCTOBER 28

10:00 to 5:00

SUNDAY OCTOBER 29

10:00 to 4:00

TUKWILA COMMUNITY CENTER

12424 - 42nd Ave S

Tukwila, WA

SPEAKERS

Saturday

10:30 a.m. Sharon Collman

1:00 p.m. Dr. Robert Norton

2:30 p.m. Bob Glanzman

Sunday

10:30 a.m. Loretta Walker

1:00 p.m. Mary Robson

2:30 p.m. Gary Moulton

DETAILS PAGE THREE

RAFFLE DRAWINGS

Sunday October 29 3:30 p.m.

A Message from Our President

This year's Fall Fruit Show (FFS), set for 10/28 and 10/29, should provide much of interest to novice and experienced backyard orchardists, alike. The speakers and their topics have been designed to provide substantial information for our member backyard growers, and related general interest items as well.

Gary Moulton will give an overview of Mt. Vernon research, past and present, to indicate the best varieties for home orchardists.

Mary Robson will talk about the newest information on home orchard management, in useful summary format.

Sharon Collman will use slides to help us identify both pests and beneficial insects affecting fruit, correct identification being the most important step in dealing intelligently with them.

Dr. Bob Norton will bring samples of the most common strains of commercially grown apples in eastern Washington, and explain what is happening with Red Delicious. Most of us still eat mostly store-bought fruit.

Bob Glanzman will talk about kiwi and fig culture, in particular the latter, which he has been developing most recently.

Loretta Walker will talk about and demonstrate cooking with fruit.

I would like to urge members to plan to put aside fruit from their trees, bushes and vines, even if only a few samples of a few fruits, to display at the FFS, participation being the key to success.

We will also have a box where people can write in their questions, the answers for which will be available to all. HOPE TO SEE YOU AT THE SHOW.

T.K. Panni



DATES TO REMEMBER

- Oct 7 Mt Vernon Open House, Fall Field Day Late Apple Harvest
- Oct 14 Peninsula Fruit Club Fall Fruit Show
- Oct 28/29 WCFS Fall Fruit Show Tukwila Community Center**
- Nov 4 North Olympic Fall Fruit Festival - Sequim
- Nov 11 WCFS Board Meeting

2000 FALL FRUIT INFORMATION

NAME THAT APPLE

The apple identification experts from Oregon will be here to name yours. Their success rate is phenomenal.

To assist them, bring four to six specimen with stems and free of blemishes. If you don't have that many, bring what you can. You should select fruit that is typical in color, size and shape for the tree you are trying to identify.

DO NOT WASH OR POLISH

Refrigerate the fruit in a plastic bag if it has to be stored for more than one week.

You may be asked the following questions:

- When was the fruit picked?
- Is it from a single tree or a row of trees?
- Is it from an old orchard or a new planting?
- When is the fruit ripe?
- How long does it keep?
- Is the tree upright, spreading or willow?
- Does it bear on the shoot tips?
- Is it damaged by scab or mildew?
- Is it good fresh?
- Is it a good cooker?

Commercial Exhibitors Look for them They have lots of information

Frank and Susan Fitzpatrick with their interesting bee exhibit, natural raw honey, and beeswax candles.

Hartman's Fruit Tree Nursery displaying fruit, catalogs and literature.

Raintree Nursery with edible landscape plants, horticultural books and supplies.

Wilson Irrigation exhibiting an apple trellis.

WHAT TO DO AT FALL FRUIT SHOW

Enjoy displays of the many varieties of fruits and nuts grown in the various microclimates of Puget Sound

Taste varieties of apples and other fruit that you can grow in your yard.

Bring fruit from your "nameless" apple trees for identification.

Buy apples to take home

Browse through exhibits of fruit tree care, Orchard Mason Bees, publications, tools and equipment, cider presses and more

Enter the Corell Cider Press (and other great items) raffle - tickets \$2.00 each - available from your WCFS Chapters, and at the FRUIT SHOW

Attend the lectures and demonstrations to hear the latest developments in the world of fruit culture

Socialize with other members **Renew** your membership **Visit** the snack bar

Check out the latest bulletins-available for small donation for printing costs

VOLUNTEERS NEEDED

Once again we are in need of your help to make this a successful event. Volunteering is a good way to get to know WCFS members of other chapters. It gives you a feeling of ownership of this organization and event, and fulfillment with a project well done.

This year we have a Volunteer Chair who will know who needs help and where help is needed.

Help is needed to: set up (Saturday morning) and take down (Sunday afternoon); at the registration table; at the membership table; for raffle sales; refreshments; education table; tasting table. There may be other ways you can help.

Sharon Nowicki is the one to contact. Phone-(360) 927-2184 e-mail-swedhollow@aol.com

The Raffle

Don't have all the details at time of printing, but for sure there will be the **Correll Cider Press**-it has been on display at the Puyallup Fair. Did you get to the fair? Did you stop by the WCFS display? The Tahoma Chapter did a great job again this year.

And we will have the ever popular vacuum sealer. Last year's winner was a member of Peninsula Fruit Club chapter.

Two cooking classes-each a \$50 value and an apple peeler.

A \$15 gift certificate for a three year tree from Hartman's.

A plant from Raintree
Honey from Fitzpatrick's.

Chapter members, support WCFS and buy raffle tickets-you too could be a winner!

2000 FALL FRUIT SHOW

A Presentation for Home Fruit Growers by the
Western Cascade Fruit Society

at

TUKWILA COMMUNITY CENTER

12424 - 42ND Avenut South Tukwila

Saturday October 28 10:00 a.m. - 5:00 p.m.

Sunday October 29 10:00 a.m. - 4:00 p.m.

ADMISSION: Adults, \$3.00; Age 16 and under, free
INCLUDES: parking, apple tasting, and apple identification

PROGRAM

SATURDAY

10:30 a.m. **SHARON COLLMAN**, Entomologist - Former Extension Agent
Identification of common fruit pests and beneficial insects

1:00 p.m. **DR. ROBERT NORTON**, AppleCorps Consulting - former Director Mt Vernon
Common strains of commercial apples and apple industry update

2:30 p.m. **BOB GLANZMAN**, "Kiwi Bob"
Culture of kiwis and figs-heavy on the figs

SUNDAY

10:30 a.m. **LORETTA WALKER**, Cooking With Loretta
Gourmet and easy recipes for your fall harvest

1:00 p.m. **MARY ROBSON**, King County Extension Agent
Newest developments in backyard orchard management

2:30 p.m. **GARY MOULTON**, WSU Research Associate at Mt Vernon
Research overview of best home orchard varieties, past and present

Directions to Tukwila CommunityCenter

I-5 Northbound: exit 156 (Tukwila, W Marginal Way) **Stay in right lane** and take Tukwila exit. Turn left onto Interurban Ave and continue north for .4 mile, turn right onto green bridge at signal. Take first right into Community Center parking lot.

I-5 Southbound: exit 156 (Tukwila, Interurban Ave) turn right onto Interurban Ave, continue north for .6 mile, turn right onto green bridge at signal, take first right into Community Center parking lot.

See you there 😊

NEWS FROM THE CHAPTERS

North Olympic Fruit Club President, Robert Chisick, sends word that the annual picnic was a great success. There were many old and new familiar faces. Plans were finalized for the November 4 Olympic Fruit Festival, at the Sequim Prairie Grange, sponsored by their chapter and the Olympic Peninsula Master Gardener Foundation. For \$1.00 per person or \$2.00 a family you can see the displays of locally grown fruits and nuts, taste some of them and buy hot apple pie by the slice. Fruit production videos will be shown.

N.O.F.C. is also making a list of locally grown fruit varieties that do well organically.

Ron Schaevitz, **Piper Orchard** president, comments that is has been a quiet summer. The Seattle Park Department mowed the orchard just after the last rain of the spring, and as a result the grass has remained short the entire summer and the orchard looks great. Apple set was very light so there are very few apples to harvest.

The September work party removed the apples that had fallen from the trees, hoping to minimize the "bad guys" infecting the 2001 crop.

With the cooperation of the Seattle Parks Department one third of the orchard will be stripped of grass and replanted with orchard grass. Over the next three years all of the orchard will be re-seeded with orchard grass.

The work parties scheduled for October 21 and November 18 will be devoted to moving new trees from the nursery to the orchard and doing minor pruning.

Peninsula Fruit Club president, Scott Thompson, says "we had a productive summer. Fruit set was very good in our part of the region, and if we can keep the deer away, we should have a nice crop this fall. Berries have been good as well, although some members lost this year's blueberry crop to an untimely frost."

He reports they had a chip budding workshop in August with many new members trying their hand, and more experienced members offering moral support.

Presentations on pear and blueberry culture are planned. Their fall Fruit Show is scheduled for October 14 at the Givens Community Center in Port Orchard.

Tim Shouse, **Tahoma Chapter** president, says that September is a very busy month for them-the Puyallup Fair runs from the 8th through the 24th. Nine people will be manning the booth every day.

"If you have ever been to the Fair you will know this is a great place to find new members and a chance to talk about that which we love, fruiting plants. There are literally thousands that pass our booth each day."

Tim announces that they have a new meeting location. On the first Thursday of each month (same day) they meet at the Parkland Christian Church located at 12305 Spanaway Loop Rd, Spanaway. You are invited.

Seattle Tree Fruit Society president Marlene Falkenbury reports that their June field trip was at Frances Sweeney's nut farm at Greenbank, Whidbey Island, suggested by Milton Piatok. Frances has 300 trees, mostly nut, on 10 acres.

In July they went to Duvall to tour the Lyden Blueberry Farm, an old farm still in production. (It is for sale if anyone is interested.) From there they went to Tony and Sadie Broer's farm in Monroe. The Broers farm, in a beautiful location where many movie scenes and TV commercials have been filmed, specializes in organically grown raspberries. The processing plant was toured, but was not in production. They harvest days and process nights. They also process for their neighbors.

In August they went to Mount Vernon. Gary Moulton conducted a bud grafting class and grafted for a couple of STFS members

Our members write

FIGS FIGS FIGS

Bob Glanzman sent out a request for WCFS members to participate in a Puget Sound Regional Fig Test last year. To start he will provide five varieties of fig trees for each participant to grow and compare the results in about ten locations where the microclimates are very different. The test will focus on growth speed of various cultivars, how early they start setting fruit, winter cold hardiness and die-back, how many crops the cultivar will ripen each year, and the ultimate question of fruit quality. All participants will grow the trees outside, not using pots to bring them inside, nor providing any sort of winter protection that would bias the study.

It is reasonable to expect that some varieties in some microclimates will die back or freeze out completely. Such results are expected and will better enable us to tell home gardeners which varieties are most likely to succeed here.

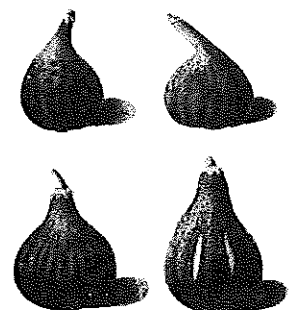
He is still in need of participation in Olympia, Carnation/Duvall, and Kitsap county areas.

Bob also is interested in getting more Desert King fig scionwood.

In April 2001 he will be in need of some greenhouse space for 5 propagating "benches" each 4.5' by 12', and with 220 volt electric for water tank hookup. Let him know if you can help or know of space available.

There are several ways to contact Bob.

E-mail kiwibob@umailme.com
 phone-(206) 523-6403
 write- Bob Glanzman 1220 NE 90th
 Seattle, WA 98115-3131



OUR MEMBERS WRITE

From Ed Jones, WCFS immediate past president, an ardent WCFS and Tahoma Chapter member.

The speakers (Tahoma-Ed note) for the last three meetings have been chapter members. Wendell Phillips, Leslie Fowler and Chester Hart spoke about honey bees. Bob Friese on Orchard Mason Bee. And Mike Hughes on rare fruits. Isn't it great to have our own share with us? Thanks to all of you.

Your garden is probably much like mine, vegetables, flowers, herbs and fruit trees. Early in spring the aphids appear and within a week they at least double. What should I do, reach for pesticides or Safer soap or what?

And among the things I want to grow, I also grow numerous weeds that I never seem to get control of. In these places dwell many beneficial insects, ready to emerge to eat or parasitize other insects that may be harmful to my plants. On a warm day parasitic wasps can be seen visiting the fennel flowers in search of nectar. The nectar sustains them while they look for aphids or caterpillars in which to deposit their eggs. So take heart there are many insects on your side.

There are two kinds of beetles that are helpful. The lady beetle (a.k.a. ladybug) and ground beetles, both predators. Lady beetles prey on soft-bodied insects. They eat about 50 aphids a day and will hang around to lay eggs. Each hatched larva will eat about 400 aphids before its pupal stage. There are several species of lady beetles.

Ground beetles don't fly much. They prefer to run away when disturbed. They like to hide under things like piles of old weeds. They are about 3/4 inch long, dark in color and have jointed legs. They hunt at night, looking for insect eggs and larva.

Lacewings are a light green and devour aphids, caterpillars, mealy bugs, leafhoppers, insect eggs and white flies. It even eats other lacewings. The larva looks like a tiny alligator and is about 1/2 inch long.

The Hover fly with their striped abdomen look much like small bees but move more like flies hovering

briefly several inches above a blossom before before landing, checking for danger before consuming the nectar.

There are bugs, then there are true bugs. True bugs like the minute pirate bug and the bigeyed bug belong to the insect order Hemiptera. Many are plant feeders but also many are predacious, with tubular mouth parts they insert like a straw to suck the juices out of their prey. The Pirate bug is about 1/2 inch long with a large and wide-ranging appetite. It eats aphids, thrips, mites, white flies, and insect eggs.

Helpers to look for in your orchard or garden are as follows;

Trichogramma wasps, look like tiny black flies and help you get rid of gypsy moth eggs; Syrphid flies (hover fly) are easy to spot; Lady beetles and their larva, the larva are scary looking, black and orange or red bodies; Gossamer winged green lacewings and their grey larvae.

If you are going to buy predators the lacewings are a good bet, far better than lady beetles which always seem to end up in your neighbors yard. Lady beetles over winter as adults, congregating on leaf undersides in mild climates. In cold areas you may find them camping out in your house.

Have you ever signed up for the Puyallup Fair? It really is a fun thing to do. You learn a great deal by the questions you are asked. You'd be surprised at how much you know. If you don't have the answer there is always a note book where you can write the question down. Remember this is a time to help, not to say let Joe do it. We gain new members not only for our chapters but also for all of WCFS at the fair.

It may too late for this year when you read this, but keep it in mind for the next one.

Harry Burton announces the **Second Annual Salt Spring Apple Festival** to be held Sunday October 22, 2000 from 9:00 a.m. to 5:00 p.m. on Salt Spring Island, B.C. Salt Spring Island

* Was among the first area in BC to grow apples (1855)

* Has an extensive history of commercial apple growing up until 1920

* Now grows over 350 varieties of apples organically

* Is home to the Salt Spring Island Organic Apple Coop

* Is called the Organic Gardening Capital of Canada

The Apple Festival will feature

* Over 15 orchards open to the public offering an assortment of taste testing, orchard tours and apple sales.

The majority are organic and at least 3 are certified organic

* 1 sheep and goats milk cheese operation and 1 certified organic cheese operation (Jersey milk) providing samples, a tour of the plant and cheese sales.

* apple juicing

* apple baking

* apple growing history of Salt Spring Island.

* apple variety identification services

* 150 labeled apple varieties on display

For a \$10 donation to the Salt Spring Island Organic Apple Coop, the public will receive a map of Salt Spring showing the locations of the host farm and a description of what each host has to offer. Like the house tours, each participant chooses the locations they wish to visit between 9AM and 5 PM. Two locations on the island will be selling tickets. These are the Fulford Hall (south) and just outside the Information Centre in Ganges (north). The Fulford Hall will be the command centre in the south housing all displays, including baking, apple displays and apple identification.

The Apple Festival is an incredibly popular event with both locals and visitors. What other location can offer over 350 varieties of apples, most being grown organically? Last year we produced a large number of very happy, satisfied participants. This year will be better.

Letter From London
June 2000

Spring this year was relatively kind to us and most local fruit growers have plenty to spray this year. Both Brogdale and the fruit fields at Wisley are well loaded, especially pears and plums, which were not so good last year.

Speaking of pears, most amateur growers here still favour the older varieties mostly bred in Fance and Belgium in the late 1800's. 'Doyenné du Comice' is arguably still the best tasting pear that we can grow in the UK, although not a heavy cropper. I was enjoying a particularly succulent large 'Cormice' last November when I realised that it was the 150th birthday of this pear, it having been first tasted in late 1849. I pictured the directors of the Comice Horticole at Angers, France gathering together to taste the new seedlings. The head gardener must have been so proud of the fruit of this particular seedling he had raised some five years before, and had probably had a taste before proudly presenting his protégé to the awaiting Board for their approval. I wonder if they realised just what a good pear they had in front of them that day! Some nine years later Sir Thomas Dyke Acland brought a few trees back to England. Since then this delectable fruit has been grown all around the world and probably been used more than any other at various breeding stations. Many of its offspring have also been exceptional however none has, in my opinion, managed to knock it off the top spot in 150 years.

We summer prune our pear and apple trees in July over here, still using a method developed by a Frenchman Louis Lorette, later modified for our particular climate by Miss Beryl Beekbane at the East Malling Research Station in Kent. We owe much to our pioneers for all their research.

I was reading recently from a 1926 catalogue of J. R. Pearson & Sons who were a family of nurserymen in Nottinghamshire. Some of these old catalogues contained a wealth of information, cultural notes etc. and take several hours to read and digest. Un-

der Comice (one year old trees of which were priced then at the equivalent of 6 for 1 dollar) it adds that Glou Morceau is the best pollinator and then states that in trials when they placed 2 or 3 grafts of Glou Morceau on the Comice trees they produced four times as much blossom than otherwise **even before the grafts produced any blossom**, saying this was effected by the 'transmutation of sap'. Perhaps our grandfathers knew more about fruit growing than we give

them credit!

And finally, I came across a wonderful illustration in a fruit book written by the master French fruit grower Monsieur du Breuil, written in 1864, showing what the well dressed English fruit grower was wearing at the time to spray his crops. It seems that I am decidedly underdressed when working in my fruit garden.

Jeremy Slane gardens in Middlesex, in northern London.

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BROGDALÉ IN JUNE

June 25th was a fine day to visit to Brogdale. The sky lightened as we got closer, it did not rain. The visit, arranged by my very thoughtful hostess, Catherine Olver, was a great experience.

You may remember that Catherine visited our part of the world last September. Chuck Parkman and Larry Barello were most generous with their time showing us around the Sequim area. Catherine wrote about her day for the Brogdale newsletter "Fruit News", which was printed in The Bee Line.

Catherine was very gracious, taking me to wonderful places - tours of the Benington Lordship Gardens and the Garden of the Rose, headquarters of the Royal National Rose Society at St Albion, prior to our appointed day at Brogdale.

Before my departure I visited their web site to get a little background and learned that it was 40 years ago that the National Fruit Collection was planted there. Now there are over 4,000 varieties of fruit trees and bushes set within the 150 acres of orchards. Apples with names like "Bloody Butcher", "Red Army", "Beauty of Bath", "Discover" (I've heard of that one). Now I was really anxious to see these collections.

Brogdale is the "home" of England's National Fruit Collection, located in Faversham, Kent, about 40 miles from the heart of London. It is managed by the Brogdale Horticultural Trust, set up in 1990 to provide a permanent home at Brogdale for the National Fruit Collection. Although the daily tasks are done by paid workers, volunteers - the Friends of Brogdale - serve at many activities. The Friends of Brogdale come from a wide area of the UK and Europe. Brogdale has suffered a cut in funding just as we have at Mt Veron Experimental Station, and volunteers are asked to help with many chores.

Our tour of Brogdale was guided by Joan Morgan, a founder Trustee and member of the original group who set up the Trust. Also in our

group of four was Jeremy Slane, a Friend of Brogdale (and also a WCFS member who often sends a Letter from London for The Bee Line).

Before commencing the tour we had a delicious lunch in the Pippins Tea Room. Paintings from the Canterbury College of Art & Design decorate the walls. Joan filled me in on the activities and event featured at Brogdale: the blossom walk the first Sunday in May, a summer fruit day on a Sunday in August featuring tasting and talk; an autumn fruit day on a Sunday, October 1 this year. Again tasting and talk of the new additions to the apple collection. There is a National Apple Day, October 21. Brogdale celebrates Apple Festival October 11 to 22 which includes apple ID and tasting, and many other activities. Proceeds from these events go to the Trust.

Our appetites sated, we started the tour. First we walked through the pear collection. The pears, on Quince A stock, include 500 varieties, two trees of each, one variety per tree. They are arranged in order of ripening, early, mid, late. The Perry pears are long lived, Joan said.

Next the plums, over 300 varieties here. There are also collections of apricots, quince, medlar, cherries.

I haven't mentioned peaches, surely there are peaches. Looking through my notes I find no mention of peaches, it must be an oversight on my part, I must have been dazed by so many fruit trees.

There are over 2000 varieties in the apple collection, with two trees of each variety, on M9 rootstock. I will not list them! But if there is an apple variety in the world that is not there, I would be surprised.

Every county in England is represented, as is every country (I did see varieties from the U.S.) Looking at an old index - 1985 - every letter of the alphabet is represented too, except X. (Is there a variety starting with the letter "X"?)

Cherries are on Gisela 5, Gisela

7 and Colt rootstock. The new cherry collection was netted to protect the fruit from birds. I couldn't help but wonder how that rabbit got in - he hadn't found his way out while we were in the area.

I also saw currents, ornamental apples - fruit is used for jelly, artichokes.

Brogdale boasts a gift shop that has wonderful items for sale, including postcards to send back home, proceeds benefitting the Trust. There is something for everyone there, especially that person who "has everything" And plants for sale as well, ornamentals and fruiting. Wish I could have brought one home with me!

Joan mentioned she is writing a new apple book. I will keep in touch with her for publication date as we may be able to get a group discount as we did with her last book.

Catherine offered to give Joan a ride home and we were invited in for tea and biscuits and a tour of her grounds. What a lovely place, on a hill, terraced, with roses climbing up amongst the trees. Regretfully, we did not have time to look at Joan's orchard. I mentioned that Faversham was about 40 miles southwest from the heart of London, that is as the crow flies. Reading, Catherine's home, is 30 miles the other side of London and the road is not as the crow flies.

Of course I took pictures, which will be at the Fall Fruit Show for you to see. And you can ask me about the rest of my trip, which I shall be happy to tell you about: opera, ballet, museums, Henley on the Thames, Oxford, Gloucester, Cheltenham, the Cotswolds, it was all wonderful.

I have read since returning home that Joan has retired as a trustee, but plans to continue her role as coordinator of Friends of Brogdale and looking after the Friends' interests and activities. A loyal Friend, I'd say.

THE ORCHARDS OF SOUTHERN FRANCE IN JULY

At the end of a five hour train ride from Paris, I was met at the Cahors station by Jean-Luc Carrières, our WCFS member in France, waving a paper with a large WCFS logo printed on it to identify himself!

He whisked me off for the first stop in our three day schedule of tours and visits. It was a Saturday afternoon and the highways were crowded with folks headed off for the weekend — does this sound like home? But Jean-Luc knew his way around the traffic, and soon we were in the open and up to speed.

During the drive he outlined the schedule; today a tour of Le Conservatoire Régional d'Espèces Fruitières Anciennes et de Vignes du Patrimoine Biologique Régional de Midi-Pyrénées (The Biological Heritage Collection of Old Fruit Species and Vineyards of the Mid-Pyrenees Region), which Jean-Luc referred to as a repository, in the sense, I think, of a collection/museum. Tomorrow a morning visit to the Montcuq Sunday market where he has a stall and a six o'clock tour of an organic orchard, Monday a morning visit to a vineyard and winery, an afternoon visit to a repository of the district of Aquitaine and last but not least a tour of his orchard and collection.

Jean-Luc also gave some background on the history of the repositories. As I understand it, France is divided into geographical regions, each having a Conservatoire, each with the same goals, to preserve their heritage. The one we are on our way to visit states that because "The fruit species of old of the mid-Pyrénées, ousted by the more productive selected varieties, constitute a biological heritage and a genetic diversity able to improve the economic and cultural image of the area." This one was created in 1986 by the local public administration (the General Council of Tarn) in partnership with the l'Association Regionale de Sauvegarde de l'Enfant, de l'Adolescent et de l'Adulte an organization that provides training for people who have had problems, reintroducing them in society and is partially funded by the government.

Scion wood was collected from local growers and bench grafted or chip budded to rootstock.

Tours are open to the public, and school groups are brought in on field trips.

Turning off the main road and driving along the winding road to the Conservatoire is a breathtaking view of Puycelsi atop a hill, looking like a fortress of yore, now a village for vacationers.

We were a few minutes late, so unfortunately missed Isabelle Calviera, Conservatory Director, and Michel Garder who is in charge of the orchards. We were greeted by Joseph Gonthier, our very knowledgeable tour guide who directed a very interesting tour, with Jean-Luc translating. Jean-Luc's English is very good.

To quote the brochure, "Installed at the foot of the walled village of Puycelsi, at the edge of the national forest of Grésigne, are 550 apple trees, 140 pear trees, 50 plum trees, 20 cherry trees, 9 apricot trees."

There are 112 "cépages" - vines, adjacent to the orchard. I'm not sure if the vineyard is part of the 5 hectare plot, a small part of the 110 hectares (about 270 acres) comprising the Conservatory.

I learned that the apples are on Pasam #2, the French equivalent to M9; pears on quince of Provence; plums and apricots on myrobolan (*Prunus cerasifera*); cherries on santalucian (SL64); grapes on fercal, a new rootstock that tolerates the high level - 30% -of calcium in the soil.

In the nursery plot are apples and pears which are bench grafted.

About 80% of their rootstock, certified virus free, is sold to implement income for the Conservatory, the rest is planted. Scion wood is distributed to breeders and fruit hobbyists.

Some of the the varieties I saw on our walking tour: apple-Rouge du Regondon-it bore in its 4th leaf, Peron Muscade, Museau de lievre blanc, translates as face of white hare, (I have a picture of that one!), nino des clots, I can't translate that, Reinette de Saintonge, Reinette is a variety of apple similar to a pippin

(according to my dictionary) Saintonge may be an area.

In the pear collection is a Beurre Superfin, whose origin is the Loire Valley, and Clapps Favorite Red, to name just two.

After the orchard tour Joseph invited us to tour the visitors center which housed the cold storage area. And we had a refreshing drink of marvelous apple cider from the apples grown at there.

Joseph gave me some brochures to share with you-they will be at the Fall Fruit Show, as will the pictures.

Montcuq Sunday Market

In the morning, after a delicious breakfast of home made bread and jams (have you ever tasted rose jam? it tastes as good as the fragrance of a rose) Madeleine Bibard, my hostess at a "Chambres et Table D'Hôtes", what we call a bed and breakfast, took me to town where Jean-Luc operates a fruit stand at the weekly market from 9:00 a.m. to 1:00 p.m.

Jean-Luc led me on a tour of the market-a market much like our Pike Place Market- except the ambience of a village hundreds of years old lends a charm that we shall never have. I saw a small jar of Miel de Lavande-lavender honey-it was creamed, I just had to have it. I don't see creamed honey in our stores any more. Some of the vendors at the market spoke English, which was nice for me as the little French I know is unrecognizable to them!

After the market closed we drove to his parents home for dinner where I was graciously received and had a wonderful meal. Ask me about it! Monsieur et Madame Carrières are affable hosts and made me feel most welcome, even though they spoke no English.

Organic Orchard At Its Best

We had a six p.m. appointment to visit an organic orchard about half an hour drive from Jean-Luc's home. Daniel Ganella, who also sells at the Sunday Market, met us as we drove up. After introductions, and Jean-

Luc explaining to him that I was from Seattle and why I was interested in his orchard, we drove to the orchard, perhaps a mile or so down the hill from his house.

Daniel has 7 hectares in orchard with seven varieties of apples, the main one, Florina, a rust and mildew resistant red apple grafted on M106. It has a high sugar content, ripens in mid September (one week later than Golden Delicious). These ten year old trees have produced 100 kilogram per tree. His apples are beautiful.

There are 700 trees in his orchard, trained in vase shape. Daniel says poles and wires are not natural, he prefers free standing, "the hand of nature", and they live longer. He uses no fertilizer, as the soil has a natural high level of nitrogen. In one area he does use manure where the nitrogen level is lower. He does use coddling moth traps in the Florina apples, and he applies carpourusine three or four times. Other apple varieties are Harmonie which he says is susceptible to mildew; Julienne, a scab resistant cider apple; Grey Canada; Boujade (at this point I am frantically writing trying to record all he says, as Jean-Luc translates, and I am not sure that I am reading it correctly. It is like a Granny Smith and susceptible to aphids.

In late April 1999 a wind storm caused limb damaged to the limbs of the trees in his orchard, there were few leaves, less flower buds, and less fruit this year, caused by a lack of nutrition.

Daniel has Beurre Mardy pear; he also grows Conference which is less susceptible to scab and sells very well.

He also grows, organically of course, onions, zucchini, melon, potatoes, wheat, sun flowers, tomatoes, French beans and raises ducks organically-Barbarii, Mulard and Pekin.

He sells most of his fruit and produce wholesale. In 1997 he won first prize for his organically grown apples.

Daniel was the first organic grower in this area, harvesting 30 tons of fruit in 1997. There are now three more organic growers, an Englishman, an Australian and another

Frenchman.

In 2001 Daniel plans on grafting antique apples onto Reinette de Brive (Brive Pippin) rootstock.

As we parted I promised to send a copy of this The Bee Line to him. I wondered how he was going to be able to read it, no problem, Daniel has a daughter, one of his six children, who is fluent in English

A Visit to the Loygues Estate

Monday morning we visited the vineyard and winery of Mr Jean Loygues, wine maker extraordinaire, a delightful young man of 79. Mr Loygues and his wife are living in the original estate house, built in 1807, a beautiful building featured on his label.

In the 20 hectare vineyard are Malbec and Tannat. Annual wine production is 120,000 litres, mostly wholesale, although he bottles some for sale under his label Domaine De Bénégou.

In addition to the vineyard there are 7 hectares of d'Agen plums-grown for prunes. This area is known as the plum capital of the world.

We toured the winery, from the cellar to the top of the vats, and I learned how the grapes get from the vine to the bottle.

Most impressive was his enormous harvester, valued at \$90,000. He can harvest in 1 hour the equivalent of 50 pickers working 1 hour.

There are vats with a capacity for 3000 litres, 4700 litres, 6000 litres. Still visible are the old concrete vats, which are being phased out by these shiny new stainless steel vats.

Last stop was the tasting room and as we sampled his wine, vintages 1994 and 1995, we chatted about the WTO in Seattle, Americans, the French and youthfulness. Jean-Luc translating all the while. I must say that this Cahors wine is excellent. If you are ever in France, look for it. When I went back to Paris I found some Cahors wine in a wine shop where my brother buys his wine. And I found some in a specialty wine shop here. I urge you to try it, you won't be disappointed.

Mr Loygues' daughter in law, Marie, and two granddaughters, Julie and Marion accompanied us on the tour, and his son, Francois, joined us

for the tasting as did his sweet wife, Aima. I hope they had as good a time as I did. A parting gift of a bottle of this ever so good wine was enjoyed in Paris by my brother, his wife and me, with a toast to Domaine De Bénégou and the Loygues.

Conservatoire Végétal d'Aquitaine

This conservatory is quite different than the one we visited Saturday. Although it was established only three years earlier than the Midi-Pyrénées it is far more developed. Located ten miles west of Agen, in the Garonne valley, (south west of Montcuq, Jean-Luc's home), it is the showcase - the largest - of eleven orchards within the region.

Evelyne Leterme, director of the Conservatory, was unexpectedly called away so Sylvie Roques, a technician, gave us an excellent tour of this "orchard museum" and a most interesting description of its activities and purpose.

We met in the visitors center where Mrs Roques described the purpose and layout of the Conservatory. There is a library where one can buy books and pamphlets. I was presented with a poster of the apples of the region and several brochures.

The orchard museum is divided into three "parcelles" -parcels- of land, what we would call plots: a traditional planting (all high stem), vinyards in the older and newer planting methods-with fruit trees encircling them, and the third is rows of fruit trees trained in various styles: palmet, lattice, vertical axel, high stem, goblet, hedge.

As we toured the orchard we were invited to taste the various fruits that were ripe. Of course, we had to climb the ladder placed there for that purpose. I enjoyed some very tasty apricots.

On our return to the visitors center I spied a book written by Evelyne Leterme, "Les Fruits Retrouvés" The Recovered Fruit, the "history and diversity of the ancient species of the south-west". I just had to have it if only for the pictures, as it would take me a lifetime to translate. It also

(Continued on page 10)

(Continued from page 9)

includes data for the area we visited on Saturday-the mid-Pyrenees.

Jean-Luc's orchard and collection

Finally, a tour of Jean-Luc's orchard, the purpose for my visit to the south of France.

Jean-Luc grows apples and plums commercially, including some d'Agen plums planted by his grandfather in 1956.

I have a partial list of the fruit trees in his collection, just the apples. Too many to itemize here, I'll bring them to the FFS.

- 57 Hybrides Hybrids *Malus X*
- 29 *Malus* Crabapples *Malus spp*
- 14 RT Scab resistant
- 3 Cidre Cider
- 112 Apple *Malus domestica*

He has 12 varieties of Peento, 6 white flesh, 6 yellow; 5 varieties of Peentarine, 3 white flesh, 2 yellow.

Jean-Luc's interest is red fleshed fruits, the unusual. Everyone grows the typical fruit, he is going for the unusual to create an interest and from there hopefully, a demand. At the Sunday Market he displays red eggs. Yes, he raises hens that lay red eggs. Not a crimson red, but definitely a red shade. If I remember correctly, they are Marans, I didn't note it in my journal.

Jean-Luc showed me a Pink Lady seedling that has a red heart vein in white flesh when cut in half. He has a Hidden Rose, green skin with pink flesh; a red Astrakan from Crimea; an apricot apple, apricot flavor with yellow flesh; apples from all over the world.

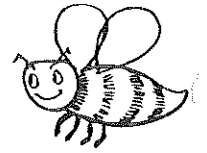
And there are pineapple guava-20 varieties; pears-of course some red skin-; peaches; apricots; grapes. I don't think there is any fruit he doesn't have. He has black truffles too.

Jean-Luc was a very thoughtful, considerate host and I hope to be able to return the favor in the near future. I had hoped he would be able to be here for our Fall Fruit Show, but just received an e-mail saying he couldn't make it this year.

I wish I had the space, and more important, the time to write more. I will add this, I recognized one plant we have here, Jean-Luc called it Prêlé. We call it horsetail!

New Blue Orchard Bee Nest Box Design

by Rex Welland



(allows for management of your bees)

- easy to build - easy to clean
- optimum length (for *Osmia lignaria propinqua* Cresson)

Fresh From the Cider Press Spring 2000

Nest Box

The nest box consists of plywood sides, back and roof. The main feature is the blocks. Instead of drilled holes, the nesting chambers are slots. By slotting long boards, the chamber making process is sped up and the blocks can be cut to the optimum length for BOB - 6 inches (152 mm). The slots must be in the top side of the blocks. Square bottomed slots seem to work just as well as rounded ones. The blocks are bolted together using a blank block at the top and a couple of hardwood stiffener cross pieces at the bottom to keep the slotted blocks from warping. The slot blocks must be flat and smooth so they will clamp together tightly without any gaps at the edges. They are fitted tightly against the back and held in place in the plywood structure with 4 screws, which allow for easy removal. With this bolted/slotted arrangement, the nest boxes can be easily disassembled for cleaning*. The extended plywood sides on the structure itself help to deter predatory wasps that like to sneak into the holes when the female bees leave. The sides also provide some wind protection for the bees.

* Nest boxes should be cleaned regularly, preferably every year. Besides fungus and mold concerns in old boxes, mites could become a problem on the bees.

Cleaning Your Bees

Osmia lignaria are subject to a common mite, *chaetodactylus krombeini* Baker. It is not as devastating as the *varroa* and *trecheal* mites that are now affecting honeybees. Nevertheless, wherever a collection of bees is maintained, hygiene is very important. In most cases the BOB seem to be able to scrape the mites off themselves. But as the bee popu-

lation builds, so do the mites. Fortunately the mites are always found on the outside of the BOB cocoons. This allows for a relatively simple cleaning procedure as follows. In the fall (when the bees are hibernating in their cocoons take down the nest boxes and separate the blocks. Carefully scrape out the cocoons into a half percent bleach (household) solution (5 ml. bleach/liter of water). Gently stir them around. This will remove most of the mites and debris. The cocoons are waterproof and will float. After a few minutes, scoop out the cocoons with a sieve device and rinse them in a container of fresh water. Again stir them gently. In a new mix of bleach and another container of fresh water, repeat the process once again. Remove the cocoons from the final rinse and allow them to dry on some paper toweling in a sheltered place. When dry, put some soft crumpled tissue paper (Kleenex) in a small shallow cardboard box. Lay the cocoons on the tissue, no more than one layer deep (you may need more than one cardboard box). Put some more crumpled tissue paper on top before putting the lid on the box. Poke a 1/4 - 5/16 inch (6 - 8 mm) diameter hole in one side of the cardboard box near the bottom. Store the boxes in a cool location out of the weather (make sure the location is not too dry -i.e. in a heated building). Make sure they are protected so rodents cannot get at them. In the spring, place your cardboard boxes full of BOB cocoons in a dry location near your refurbished nest boxes. The bees will chew through the tissue when they emerge and head for the light of the hole in the cardboard box. From there they will head for a sunny area and your nest boxes.

Cleaning Your Nestboxes

After you removed and cleaned your bees, its time to clean your slot blocks and re-assemble them ready for the next season. Cleaning can be accomplished using a bleach solution or by heating them in an oven at 65°C (150°) for an hour (put them in some tin foil first, unless you don't mind roasted mites on the bottom of your oven). At the same time, give the nest box itself a wipe with a clean bleach solution to freshen it up.

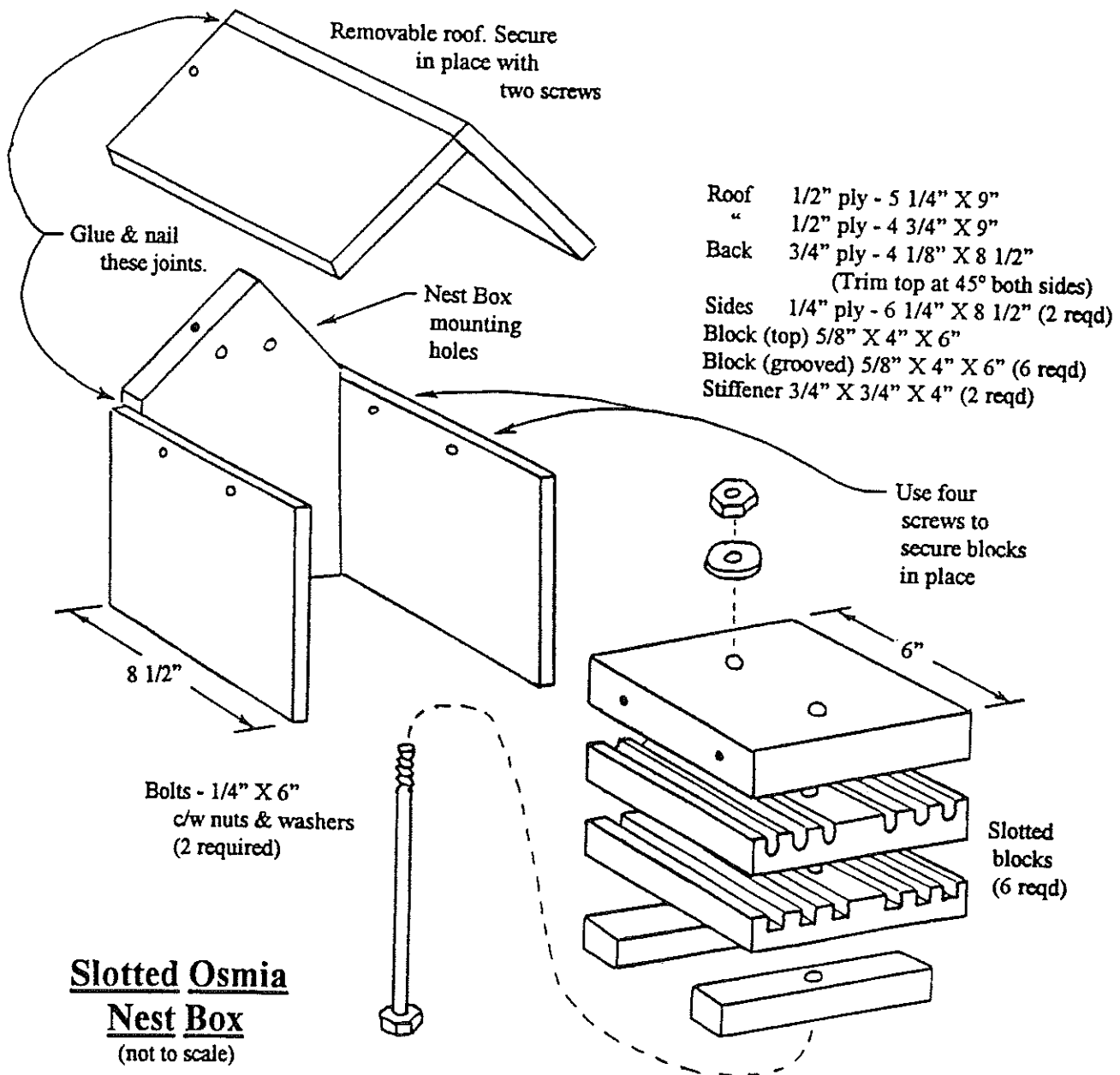
Managing Your Bees

As your population of *Osmia lig-*

naria increases, you should be giving some thought to controlling when and how fast your nest boxes are filled. If all the chambers are filled early, the bees will go elsewhere in search of additional nesting sites. If this happens, you may not have any BOB around to pollinate your later flowering apples, blueberries and other fruit. Instead of putting up all your boxes at once, hold some back and install them throughout the *Osmia* season (approx. mid March to mid May in Victoria). That way there will be a

continuous supply of vacant holes to attract the bees. This procedure will in turn ensure that there are bees around, working on your fruit trees, until the last ones have finished blooming.

If sufficient pollen is available BOB, unlike honeybees, will not travel far from their nesting holes. Consequently, to obtain even pollination across a large orchard, it may be necessary to spread the bees evenly over the area by providing several nesting stations (approximately 300 female BOB per acre seems to be adequate).



More options available to control powdery mildew

Several classes of fungicides can be used against powdery mildew

New materials are becoming available for control of powdery mildew and other stone fruit diseases, but DMI materials (demethylation-inhibiting) are still the grower's first line of defense, said a Washington State University (WSU) fruit disease specialist. Powdery mildew is an annual concern for stone fruit growers and can be difficult to control during certain years, said Dr. Gary Grove, WSU plant pathologist.

Strobilurins

The new class of fungicide materials called strobilurins offers new chemistries to alternate with DMI materials to avoid developing resistance.

Abound (azoxystrobin) works against mildew and is registered for apricots, cherries, and peaches. But Grove cautioned that it is extremely phytotoxic to some apple varieties. The manufacturer warns that the same spray tank should not be used for apples if it previously contained Abound.

Another strobilurin showing promise for stone fruit is Flint (trifloxystrobin), which is expected to receive registration later this year. Data indicate that Flint is not as phytotoxic to apples as Abound, he noted.

Sovran (kresoxim-methyl) looks to be a good compound against mildew for stone fruit, though some cherry varieties have shown sensitivity to it.

Vanguard (cyprodinil) is primarily used against brown rot as it does not control mildew, but only suppresses it.

Petroleum oils can be a good control for mildew, but are not recom-

mended for brown rot control. Grove has evaluated about a dozen different oils in research trials and found that they can be good rotation materials for mildew or stand-alone materials. Shorter spray intervals are required with oils than with DMI materials.

"Oils are good when the disease is not severe," he said. For an oil-only control program, Grove recommends spraying every ten days--the halfway point between a seven-day sulfur schedule and 14-day DMI schedule.

He cautioned that growers need to know the inert ingredients or carriers used in oil products to avoid phytotoxic results on foliage and fruit. "Know the product you are buying."

Sulfur is a standard rotation in many mildew control programs. He believes that most growers can get by with sulfur. However, if disease pressures are high, it must be applied about every seven days.

Mildew management

Water management, orchard sanitation, and pruning to facilitate air movement and light penetration are all part of managing mildew. Fungicide spray programs must include effective materials, be applied in a timely manner, and cover the target. Grove advises orchardists to spray early--at petal fall--to suppress initial infection. Fruit is very susceptible to mildew from petal fall to the pit hardening stage.

Fungicides, both DMIs and strobilurins, must be rotated or alternated to avoid development of resistance. Don't use more than three applications per year of the strobilurin materials, he warned.

"If they're used too often, we'll

lose sensitivity to the compounds and the materials will gradually lose control over mildew," Grove emphasized. "Sublethal rates of fungicides will increase resistance. Use full label rates."

Research

Grove has spent several years trying to determine the source of mildew in stone fruit orchards. "We never see cleistothecia produced in the orchard. We've looked in bark fissures and washed 300 trees in the past three years, trying to find it."

Cleistothecia are the overwintering sexual stage of the pathogen. Asco-spores, which are released by cleistothecia, serve as the primary inoculum and initiate mildew in the spring.

Nothing has been recovered from tree bark or senesced leaves.

And while research from California reports overwintering survival of cleistothecia in buds, Grove said they have found no evidence of bud survival in Washington, probably because winters are much colder here.

Spore traps in orchards do catch spores from the air, though Grove doesn't know if spores are moving into the orchard or are already there. However, they are in the orchard by petal fall.

Spore trapping and weather station monitoring will be conducted in a Sunnyside, Washington, orchard this year to continue mildew research and refine timing of disease models.

The above article, by Melissa Hansen, appeared in the April 15, 2000 issue of Good Fruit Grower

Do you know that there is now an automatic tractor steering system? It uses global positioning system equipment to automatically control the steering of any leading brand tractor or farm vehicle. Are you going to run out and get one?

Prowler Owl is a bird-scare device from Bird-X, Inc. It is modeled after the great horned owl and has 44-inch flapping wings that lift and fall as the head and body move in the wind. Since it is always moving, birds don't adapt to it. The owl is mounted by placing its neck opening on a half-inch diameter pole. For more information check the web site at <www.bird-x.com>

French pruning method encourages fruiting

by Peter Mitham

Good Fruit Grower Voume 51 No. 8

Pem van Heek, a retired forester living in West Vancouver, British Columbia, Canada, maintains a small orchard featuring over a hundred varieties of apples. Most are the so-called heritage varieties--Pitmaston Pineapple, Van der Pool, Zabergau Renette, Liberty, Belle de Boskoop--but there are also the more common Spartan and Gala. In addition, there are a few varieties of pears, and a gnarled quince tree.

And they're all in his backyard, nestled behind a cedar hedge in a quiet residential neighborhood.

Clearly, it's not your typical orchard.

What makes it possible, said Van Heek is his method of pruning--the Lorette method, named for Louis Lorette (1846-1925), the French arborist who laid out its principles in the 1903 manual *Petit Guide sur l'Arboriculture*. The book went through two editions before Lorette's death in 1925, and another two revisions afterwards.

The Lorette pruning system became quite popular in Europe during the first half of the twentieth century, as growers sought to increase production using limited resources. The principle feature is that no pruning is done in the winter. Trees are only summer pruned.

The system involves severely cutting back new shoot growth in the summer in an attempt to induce dards and fruit spurs to form from secondary buds to bring the tree more quickly into a fruiting mode.

Van Heek, who began collecting his trees about 15 years ago, has a voracious appetite for literature about

apples and tree management. The experiences of growers in his native Holland, France, and England, as well as British Columbia (he's a member of the B.C. Fruit Testers' Association), have all contributed to his knowledge and expertise. He adopted the Lorette method because it suited his circumstances--not unlike those in early twentieth-century Europe--and proved itself in practice.

"His pruning option changes the sap flow in the trees," said van Heek, summarizing what he considers the defining element of the Lorette method. "You divert the growth pattern to dormant buds for future growth, and you get more steady bearing."

Van Heek said that the method is ideal for use in circumstances such as his, where space is limited. The method maximizes yield by disciplining the tree to grow in a limited space while channeling its growth in the way that best supports fruit production. It is applicable to dwarf, semidwarf, and full-size trees, and to pears as well as apples.

In van Heek's yard, dwarf and semi-dwarf trees are the rule. They stand four feet high in neat rows facing south, supported by bamboo posts or arranged against an outside wall in a variety of espalier forms.

Van Heek explained that he allows each tree to grow freely until the end of June, at which point new shoots are pruned back to their base, just when growth is at its height. This forces the nutrients that would otherwise have been diverted to the new growth into the buds. Further pruning of new shoots is conducted in late summer.

The Lorette method also advises growers to bend desirable new shoots into a semicircle, with their tips down, in order to foster the formation of flower buds as close to the base of the branch as possible. This is important, so that branches are better able to bear the weight of ripening fruit. And there is plenty of fruit.

Off one tree, an Ananas Renette, he might get up to 50 apples; at the other end of the yard, he shows a Liberty boasting six branches and a four-foot spread that yielded 100 apples.

Van Heek knows of no other grower who uses the Lorette method. While he can vouch for its effectiveness, he admits that others tend to find it odd.

"Most people think you prune in the winter. This is why they find the Lorette method strange," he said. He points out another, more practical barrier to its use: "It takes a fair amount of work if you've got a lot of trees."

Even so, some editions of Lorette's manual feature photos of orchards in early twentieth-century France the size of which rivaled those in British Columbia at the time. But the volume of production has increased dramatically since then, and the method is now best-suited for relatively small operations.

Van Heek and his wife, Mein, eat most of their apples themselves, either raw, in baking, or preserves. Some of the fruit, however, is sold at Capers, a Vancouver-based chain of organic food stores with a location a few minutes' walk from the van Heek orchard.

There is a new cherry virus detected in Washington you should be on the watch for—cherry leaf roll virus (CLRV) which causes tree decline. It is feared that symptoms of this virus could be mistaken for general tree decline and go unnoticed. Leaf symptoms can include light colored rings or "flaming" in which light-colored lines resemble the shape of a flame. However they are subtle and difficult to detect. Other symptoms include delayed bloom and leafing out, small fruit, pale rings on leaves, tip dieback, and blindwood. Also unhealthy blossoms can be found at bloom, with blossoms imbedded into leaves.

Particle films and softer IPM for pears

The effects of particle films on beneficials are not well understood

by Gary J. Puterka, D. Michael Glenn, U.S. Department of Agriculture, Kearneysville, W.V.
and Tom Unruh, USDA, Wapato

Particle film technology has gone through considerable transition since it was conceived at the U.S. Department of Agriculture's Appalachian Fruit Research Station at Kearneysville, West Virginia, in the early 1990s. Engelhard Corporation of Iselin, New Jersey, commercialized the technology in 1996, under a Cooperative Research and Development Agreement with the Agricultural Research Service.

Engelhard Corporation markets the particle film under the brand name Surround. In 1999, Surround was sold on a limited basis and was used by about 80 growers in Washington and Oregon. Excellent pear psylla control was achieved in the spring, and the product was heavily used in the Wenatchee, Washington, area in late June through August as a rescue treatment against psylla infestations that showed resistance to conventional insecticides. This spring, a large number of growers controlled overwintering adult psylla and early nymphal infestation with a new formulation of Surround.

Pests

Surround is labeled on pear to control pear psylla and suppress pear rust mite thrips, leafhoppers, codling moth, pandemis leafroller, obliquebanded leafroller and also the fungal disease, fabraea leaf spot. Significant pear pests that are not on the label are twospotted spider mites, European red mites, grape mealybug, and San Jose scale. In a particle film program, these pests would require supplemental control.

Particle films aim to control insects by creating an inert mineral barrier on the plant surface. The particles agitate and repel insects. Affected insects will not feed, lay eggs, or settle on treated surfaces. Some insects may fail to recognize the white trees as host. Insects may

die from starvation or desiccation. Based on these modes of action, particle films should be applied before insects infest orchards to keep pest problems from developing.

Spray programs

Two kinds of particle film spray programs have been used for pear psylla control:

—Early spring program, from delayed dormant up to bloom.

—Early to midseason program, from delayed dormant up to bloom, then after petal fall with continued applications for about two months.

The early spring program (2 to 3 applications) has gained popularity because Surround is one of the few materials available that repels psylla adults and prevents egg laying. This program can replace dormant oil and the one or two insecticidal treatments typically used before bloom for psylla control. The early spring program can also suppress overwintering larvae of the oblique-banded leafroller. After petal fall, some growers shift to conventional insecticides for codling moth, mite control, and pear psylla.

An early to midseason program can usually be accomplished with five to eight Surround applications up to the end of June, although there are variations in this program. The early to mid-season spray program starts with either two to three applications between delayed dormant and bloom, or a conventional spray program between delayed dormant and bloom using oil plus insecticide.

Unlike conventional pesticides, Surround could be used during bloom if psylla populations are heavy, as Washington State University studies show that the film is not toxic to bees and does not affect pollination. After petal fall, three to five particle film applications are usually applied at 10- to 14-day intervals. This program partially or fully replaces dormant oil, prebloom insecticides, and insecticides used after petal fall to control

pear psylla, leafhoppers, leafrollers, and first generation codling moth.

Codling moth damage to fruit that is caused by the later generations can be reduced by 70 to 90 percent if particle film applications are timed for egg laying and egg hatch. Mating disruption may be adequate so that particle film or insecticide applications are not needed for later generations of codling moth. In areas where mating disruption is not providing adequate codling moth control, particle film can be used as a supplement instead of a more disruptive organophosphate insecticide. In many instances, 70 to 90 percent reduction in fruit damage is all that is needed to supplement mating disruption. This type of an application may target a whole block or just hot spots like orchard edges.

Pear rust mites have been controlled using the early to midseason particle film program. Twospotted spider mite and European red mite are not controlled by particle film, and, in a few cases, have been found in elevated numbers in particle film plots. Curiously, researchers have noted that particle film treated trees can apparently withstand higher mite numbers without the typical signs of damage that would normally occur on untreated trees. Further study is focusing on understanding why mite damage is lessened. It is hoped that outright mite control can be achieved with modified particle film products.

Particle films and IPM

Integrating particle film into a soft IPM (integrated pest management) program has two obvious benefits: reducing chemical insecticide inputs and conserving natural enemies. The prebloom program, combined with mating disruption, provides protection through mid-summer, but may require supplemental control of mites or other pests as needed. Additional reductions in conventional pesticide

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use can be made using the early to midseason spray program that continues until the end of June.

Natural enemies of psylla can be conserved by a particle film spray program in two ways:

—Eliminating early season chemical insecticides conserves natural enemies.

—The particle film does not kill natural enemies, but only repels them into other areas, such as nearby refugia, which may include ground covers, plants on orchard borders, or nearby riparian habitats. Natural enemies could also move into nearby orchards that are not using particle film.

Certain predators, such as lady beetles and lacewings, have been noticed actively feeding on insect prey (especially aphids) that remain in particle film treated orchards. Yet, for western tentiform leafminer, a pest that is not controlled by Surround, there is evidence that parasitism may be reduced. The effects of particle films on beneficials need further study.

Multifaceted tool

Particle film fits well with soft orchard IPM programs because it is effective on insects while safe for humans and the environment. Particle film is a multifaceted tool for pear that controls tough insect pests like pear psylla while improving fruit finish. It also has the potential for improving plant productivity. The challenge for researchers is to continue to fine-tune its use and integrate particle film into a soft IPM program.

Understanding how particle film suppresses specific pests, and how films interact with the natural enemies of pests that are, or are not, controlled, are key soft IPM research priorities.

This article appeared in Good Fruit Grower, July 2000

A sweet way to Control pests

Sugar esters could be registered as a pest control before the year end

Growers will soon have another environmentally friendly tool available to use against pests—sugar esters. The U.S. Environmental Protection Agency is expected to approve registration of sugar esters by the end of this year.

U.S. Department of Agriculture (LISDA) scientists and university researchers discovered that sugar esters are lethal to insects like mites, aphids, thrips, pear psylla, and whiteflies, almost immediately after contact. The sugar esters can kill up to 100 percent of the soft-bodied insects they contact.

Throughout four years of tests, the sugar esters have been as effective or better than conventional insecticides against mites and aphids in apple orchards; psylla in pear orchards; whiteflies, thrips, and mites on vegetables; and whiteflies on cotton, according to Dr. Gary Puterka, entomologist at the USDA's Agricultural Research Service (ARS) experimental station in Kearneysville, West Virginia.

Puterka coordinated the studies nationwide and is co-inventor on a patent that was applied for by ARS and AVA Chemical Ventures of

Portsmouth, New Hampshire. AVA Chemical Ventures has submitted a registration packet to the U.S. Environmental Protection Agency for the first of several sugar ester compounds.

Puterka doesn't expect insect resistance to develop from the sugar esters any time soon, because of the way they work. The compounds degrade into harmless sugars and fatty acids and do little harm to insect predators. They are completely non-toxic to animals and people. Some are even approved as food-grade safe.

The biggest drawbacks to using sugar esters is that they must come into contact with the insect to be effective, and they don't kill insect eggs. Sugar esters work similarly to insecticidal soaps, killing insects by either suffocating them or by dissolving the waxy coating that protects them from drying environments.

The concept of using sugar esters for insect control began about ten years ago when ARS scientists in Beltsville, Maryland, found that the leaf hairs of wild tobacco plants exuded a sugar ester in defense against insects and other arthropods.

NEW ROOTSTOCKS AVAILABLE

PYRODWARF New *Pyrus communis* precocious, dwarfing - Old Home x Bonne Luise cross - bearing in 2nd leaf - produces a tree about 35% smaller than OH x 333 - no significant reduction of fruit size - reaches full bearing in 5 years - no known incompatibilities, no root suckering, good soil adaption, very tolerant to mildew

PYRO 2 sister cross to Pyrodwarf, not dwarfing, great yield efficiency, precocity, growing traits, no root suckering

PRUNUS CADAMAN VC hybrid of *Prunus persica* x *P. davidiana*-peach, almond rootstock -less vigorous than Paramount, root-knot nematode resistant

PRUNUS TORINEL VC hybrid of

Prunus domestica Reine Claude x Reine Claude Bavay-apricot rootstock, less vigorous than other apricot rootstocks

PRUNUS ISHTARA VC Belsiana plum (*Prunus cerasifera* x *P. saliciana*) x (natural hybrid of *P. cerasifera* x *P. persica*) less vigorous than myrobolan of peach-plum, apricot, peach rootstock,

PRUNUS JASPI VC hybrid of *Prunus domestica* Manthley x *P. spinosa*-peach, plum rootstock, less vigorous than Mariana rootstocks

PRUNUS JULIOR VC hybrid of *Prunus intsia* St Julien D'Orleans x *P. domestica* Pershore peach, plum some apricot rootstock, possibly superior to St Julien A

Hard cherry cider latest contender in battle for beverage market

By Robin Millsap
MSU Project GREEN

When Patrick Oriel, a microbiologist at Michigan State University, goes hiking in the mountains of Scotland, he likes to end a trek with a glass of hard apple cider at the pub.

"I found it is a very refreshing beverage after a day outdoors" he says. With funding from Project GREEN (Generating Research and Extension to meet Economic and Environmental Needs), Oriel and his research assistant, Peggy Wolf, set about doing the scientific groundwork to create the basis for this unique cider.

"The market for hard cider in the United Kingdom is already large - 100 million gallons per year - and it is rapidly growing in the United States," Oriel says. "We are modeling this cherry cider on the British hard apple

cider, which is different from the sweet apple juice that people here think of as cider."

The hard cider comes from special apples grown in Britain, France and Spain that are more bitter and sharp tasting than those grown in the United States.

"Old hard apple cider was made on the farm, where the juice was thrown in a bucket and the microbes did the job of creating the cider," Oriel says. "Now hard cider is fermented by microbes under controlled conditions, just like wine and beer.

"We need the first fermentation to make the alcohol and the second fermentation to reduce the acidity and produce the carbonation," he goes on. "The resulting product has between 5-7% alcohol."

In Oriel's lab, now known as the "Cherry Pit," the first stage of hard cherry cider creation has been accomplished using wine-derived yeast

and malo-lactic bacteria. Michigan cherry growers and MSU horticulturists supply cherries for the project. Now, Oriel says, the trick is to divert the lactic acid to make less acid and more alcohol.

"I have a microbiology class that has taken this as a challenge," he says. "It is making mutants of the bacterium to make more alcohol and less acid."

The as yet unnamed beverage is beginning to attract the attention of others, including the viticulturists at the University of California-Davis, who have discussed the project with Oriel; British hard apple cider makers; and Cherry Republic, a cherry product marketer in northern Michigan. "I foresee this beverage being sold like a specialty beer-type beverage, possibly priced competitively with hard cider," Oriel says.

Random thoughts and memories of France

Driving through the beautiful French countryside - I don't remember which day it was, I did not take notes, just have the mental pictures to refer to - I saw field after field of lovely yellow sunflowers, grown for the seed.

I saw corn fields, their leaves looking as if fed through a paper shredder and leafless vines in vineyards. Jean-Luc told me there had been a storm about a week before my visit, with enormous hailstones. The direction of the storm was so capricious that there would be a field untouched between two ravished fields. It was heart-wrenching to see. Many farmers lost their entire crop. Jean-Luc's orchard was damaged by the hail and his fruit finish is not good (just heard from him via e-mail). He said the farmers were meeting on Tuesday evening to discuss applying for aid from the government.

The friendliness of the people I met was heart warming.

On Sunday evening after our visit with Daniel Ganiela we were invited to have dinner with Madeleine, my hostess at the Bed and Breakfast. There were two other guests dining with us, making us a group of six. I was probably the oldest and Jean-Luc the youngest.

Throughout the meal there was conversation and discussion, in French of course. One of the guests spoke some English and from time to time would tell me what the general conversation was about, as did Jean-Luc. Unable to understand the conversation, I watched the facial expressions of these people. One of the guests was speaking fervently. When I glanced at Jean-Luc his expression was one of sardonic disagreement. He did not make any comments during this discussion. The next morning I asked him what the man was speaking about so passionately, he had been discoursing about how the young people of today do not know

how to do a day's work!

Madeleine and I were able to converse with the dictionary close at hand! For dinner she had prepared a zucchini puree with hazelnuts that was wonderful. Next morning I asked her for the recipe and she wrote it out for me. I was expecting a cup of this, a teaspoon of that. Madeleine is a creative cook, the directions are in French-roughly translated 1 kg zucchini grated add salt, pepper...I guess the cook is in control here and adds the amount she wants!

I was impressed by the tenderness of Jean-Luc's father coaxing his elderly mother to eat.

I am forever grateful to Jean-Luc for his time, and the time spent planning these tours and visits for me. He is a busy young man, working on his breeding program, and managing the family business.

The Appealing Apple offered by Cornell

In the beginning, apples grew wild somewhere north of the Himalayan mountain range. Today apples have become pretty common in our lives. We eat them. We see apple trees along road-sides; we buy candles that "smell" like apples. We know about their nutritional value.

But do you know a mythological story about a golden apple? What do you know about the history of the culture of apples? Where is the star in an apple? You'll find out that, and more, in "The Appealing Apple," a new publication from Cornell Cooperative Extension.

This 28-page publication is designed for adults to use with youth ages nine to 12 but it's adaptable for other ages. Activities include making apple puppets, exploring apples in literature, and playing historic games using apples. Learn what makes an apple, an apple, and how apple trees grow, flower and produce their fruit.

Taste tests, cider-making and career information are included as well as several easy and unusual recipes using apples.

"The Appealing Apple" is the fifth in a series of horticulture/cultural diversity publications by Marcia Eames-Sheavly, senior Extension associate in the Fruit and Vegetable Department, College of Agriculture and Life Sciences at Cornell University.

The other titles are: "The Three sisters: Exploring an Iroquois Garden," "The Humble Potato: Underground Gold" co-authored by Tracy Farrell, "The Great American Peanut" and "Rice: Grains of the Ancients."

Copies of the book (142LM19) may be obtained from the Cornell University Resource Center, 7 Cornell Business & Technology Park, Ithaca, NY 14850 for \$9 which includes postage and handling. New York residents; add 8% sales tax.

Orders from outside the U.S. must be prepaid and add 3.5% for shipping. Copies of this publication may also be available at Cornell Cooperative Extension offices throughout New York

LAST MINUTE NEWS ABOUT PUYALLUP FAIR

The Tahoma Chapter, with the help of several Seattle Tree Fruit Society members, had a successful, albeit exhausting, time at the Fair.

The Correll Cider Press was there for display and over 300 raffle tickets were purchased by people who visited our booth.

Estimating, by the number of Fall

Fruit Show flyers that were handed out, over 1400 people stopped and chatted with our volunteers during the 17 day run.

In addition to good weather, the 100th anniversary of the Fair contributed to the record number of attendees.

GOOD SHOW, TAHOMA

Legal Guide for Farm Market

For many farmers and other small food producers who spend the winter months preparing for the next planting and growing season, getting their products directly to the consumer has become part of that planning process. In fact, the explosion in the number of farmers' markets and food cooperatives in the last several years indicates that both producers and consumers are looking for ways to shorten the chain that brings food to the marketplace.

To help these entrepreneurs understand the legal aspects of such ventures, Nell Hamilton, a Drake University law professor and expert on agricultural issues, has published "The Legal Guide for Direct Farm Marketing." The book offers advice and answers to the most common questions associated with marketing products.

"By removing several layers of intermediaries such as wholesalers and processors, the parties can enjoy food that is usually fresher and better tasting," said Hamilton, who is also a farmer. He and his wife, Khanh, garden on their 10-acre Sunstead Farm and raise fresh vegetables to sell to local restaurants.

In breaking down the complexities of legal issues- advertising, contracts, organic certification, insurance and liability, getting paid for food stamps, to name just a few- the book is written to address the intimidation factor of government regulations. The book's narrative is laced with specific examples of court cases, state laws, local regulations and marketing tips.

Throughout the book, readers are

referred to contacts and resources across the nation, such as state and federal inspectors, organizations, cooperative Extension offices, farmers' market directors and small business programs.

"Remember, the people who work for the government work for you," Hamilton tells marketers in the book's introduction. "It is their job to help you understand how the laws and regulations they administer might affect your operation."

The book was funded by a grant from the USDA Sustainable Agriculture Research and Education (SARE) program and written as part of SARE's Professional Development Program. It is geared to farmers, ranchers, agricultural advisers and attorneys, but anyone interested in direct marketing may benefit from it.

Hamilton has taught agricultural law for 18 years and is director of Drake Law School's Agricultural Resource Center. He has conducted seminars throughout the United States and in 18 other countries. He serves on the boards of National Gardening Association, the Seed Savers Exchange and the Food Bank of Iowa. For the past three years, he has been a grant reviewer for USDA's Community Food program, and in 1998 he advised the USDA Agricultural Marketing Service on farmers' markets.

The 235-page Legal Guide costs \$20. To order, contact Drake University Agricultural Law Center, 2507 University Ave., Des Moines, Iowa, 50311; (515) 271-2065. Volume discounts are available on orders of 20 or more.

A word of caution on distribution of scion wood

Nick F. Lolonis

Fruit Gardener January/February 2000

Of all the organizations that I have joined in my life, I find CRFG (California Rare Fruit Growers) to be the most inspiring and rewarding, and thanks to Todd Kennedy, the scion-exchange meetings are the highlights of it all. However, as I pass by the tables covered with the numerous bundles of scion wood, I can't help feeling that some of this wood could be contaminated with one or more diseases-causing agents, especially viruses that cannot be controlled. Once a plant becomes infected with a virus, it will always contain the disease. There is no known chemical that will eliminate a virus without killing the plant host. A prolonged heat treatment can eliminate the virus without killing the tree; however, this is not practical.

Commercial growers are not likely to bring diseased scion wood to the exchange. A grower realizes he cannot compete and survive in business if many of his trees or vines are not healthy and productive. Also a commercial grower usually knows a diseased plant when he sees one and would certainly never think of taking contaminated scion wood for propagation purposes.

This subject of spreading virus diseases through asexual propagation is very important to me. As a commercial grape grower in Mendocino County of Northern California, I have spent nearly a lifetime combating these and other dread diseases.

It all began in the late '30s when the grape phylloxera, *Dactylasphera vitifoliae*, an aphid-like insect that feeds exclusively on roots of grape vines, invaded our family vineyard. The European varieties of *Vitis vinifera* have no resistance to this pest, but nearly all American vines do, and some are even immune to their attack.

Whence Phylloxera?

The grape phylloxera originated in the Mississippi Valley where it lived on the various species of wild grapes

growing in the area. Eventually the surviving species gained resistance to the pest. Up until recently, it was assumed that the pest existed only in the Midwest and in eastern U.S. and therefore the California natives, *Vitis californica* and *V. girdiana*, had no resistance to phylloxera. However, it was recently discovered that these California natives are indeed resistant to the pest. Does that mean that man didn't initially bring phylloxera to California, that it already existed here for many thousands of years prior to the planting of the European grape?

The first evidence of phylloxera in California was in 1873, while in France it was identified in 1860. The French unknowingly introduced phylloxera to their country when they brought in American vines for hybridizing purposes.

At any rate, phylloxera invaded our family's vineyard about the mid-'30s. Knowing that the only control was through the use of phylloxera-resistant rootstocks, we sought a reliable source. Unfortunately, however, instead of going to the local farm advisor or the University of California for advice, we did as nearly all other growers at the time in the area did: We decided to follow the footsteps of the more successful grape growers, feeling they must be more knowledgeable than the neatly dressed farm advisor or professor whose knowledge came from books and not from working in the vineyards.

And in doing so, we initially obtained the rootstock known as "double x" or XX from Bricarelli in Ukiah since he was one of the more successful and influential grape growers in the area. Bricarelli also had a small winery which is no longer in existence. From the sketchy information that we got, XX rootstock was developed in Italy. However, little did we, or anyone else in the industry at the time, know that Bricarelli's XX was loaded with

viruses. It wasn't until several years after I had completed Professor Albert Winkler's course in viticulture at U.C. Davis that I was able to identify two of the viruses, leafroll and fan leaf. To make matters worse, I was informed by Dr. Winkler that XX had little resistance to phylloxera and as such, was not recommended for planting!

The Professor Knew Best

When I reported this to my father, he did not take my information seriously; apparently he was confident that if XX was good for Bricarelli, it must be good for us! At any rate, we proceeded to plant and field bud over 10 acres of vineyard on this rootstock.

To our disappointment, none of the varieties budded on this rootstock ever produced a crop even half of normal volume, and the vines for the most part made subnormal growth. The leaves of black varieties prematurely turned red about the middle of July--an indication that there was a restriction in flow of sugars from the leaves to the other parts of the vine, especially the fruit. As a result, maturity of the fruit was delayed three or more weeks, often until the wineries had already shut down for the season. But our vines were not the only ones affected. Driving down the county road in midsummer you could spot the leafroll virus-infested vines of black varieties by their brilliant red leaves. White varieties were equally affected, but since they possessed xanthophyll instead of anthocyanin, their leaves turned yellow.

Recently it was found that the leafroll virus consists not of one strain but seven different ones, which explains why some vines will display severe symptoms year after year, while others will have only mild symptoms. Early on, we also noticed that the severity of the symptoms varied with the type of soil, which falsely led me to believe that it was a nutritional problem and not a disease. This took me on a 20-year research program to determine which out-of-balance element was causing the problem. It wasn't until the certification program at U.C. Davis got under way and certified rootstocks and scion wood

became available that we realized that the major grape-growing problems in vineyards on phylloxera-resistant rootstocks was due to virus. The leafroll virus is believed to have originated in the Middle East. The origin of the other viruses is obscure.

Switching Rootstocks

With the knowledge that XX was not a good rootstock to use, we switched to AXR#1 as did most other growers since it was recommended by U.C. Davis, easy to propagate, gave consistently good yields, and a supply of certified AXR#1 cuttings were now available. However, this new chapter had an embarrassing and disastrous ending. AXR#1 was developed in France back in 1879 and used for 20 years before it was realized that its resistance to phylloxera was very limited and as such it was no longer planted in France. However, in California we ignored the warnings from the French and continued to plant it until about 1982 when it was discovered that the phylloxera resistance in AXR#1 in a Napa Valley vineyard had broken down due to a new strain of phylloxera. It has now spread to all three North Coast counties.

As a note of interest, I should add that while I was studying at U.C. Davis in the early '50s, Dr. H.P. Almo of the viticulture department informed me that AXR#1 had actually failed at Davis and although it continued to be recommended by the department, he advised me to use other rootstocks, preferably *V. Rupestris* St. George. The department had based its recommendations on AXR#1's good performance in various test plots in commercial vineyards and ignored the poor results in their own backyard! The French are probably still laughing at us!

There's Still More to Learn

In 1955 I was hired by the superintendent of Italian Swiss Colony Winery at Asti. My job was primarily to gather statistical information on the cost of performing the various operations in the 600-acre vineyard. When the winery became interested in a replanting program, I became in-

involved in making available a supply of rootstocks, using material from our own vineyard.

There was an old Zinfandel vineyard on St. George rootstock growing near the Russian River. I was advised to take advantage of the proliferous growth of the St. George suckers arising at the base of the vines. On most of these vines, the upper portion, the scion, had died off or was considerably weakened, and now with this reduced or non-existent competition, the St. George rootstocks made tremendous growth, canes up to 12 ft. long! Suspicious as to why the Zinfandel scions had died or weakened, I consulted the local farm advisor who came with a viticulturist from U.C. Davis to inspect.

Almost instantly, their conclusion was that a virus was responsible for weakening and eventually killing the *vinifera* portion, but the St. George rootstock having resistance to this disease took advantage of the situation and made tremendous growth. Their advice, of course, was not to use any part of the stocks or suckers for propagation purposes or the *vinifera* scions budded on to them would eventually die or weaken considerably also.

It took a lot of convincing to get the management to accept the facts but when they eventually did, that led to starting a rootstock certification program of our own. Unfortunately, many acres had already been planted using these diseased rootstocks and results were very disappointing. The viruses involved here were primarily leafroll and corky bark.

Diseases on Other Fruit Trees

Now, getting closer to home, I have a deciduous fruit tree in my backyard that is loaded with diseases--fungal, bacterial, and viral. Originally, I planted this tree about 20 years ago as a 'Rio Oso Gem' peach and I believe it was on an apricot rootstock. However, since it's a late variety and the first crop never had a chance to mature, I grafted it to a 'Blenheim' apricot, using scion wood from my neighbor.

Interested in diversity, I then took scion wood from a nearly dead unknown apricot tree in my sister's

backyard in Alameda. I was confident that after grafting it on to my Blenheim tree and with proper care, it would grow out of whatever was ailing it. Wrong! Now my Blenheim apricot became a host to the dreaded gumming diseases of bacterial canker and blast (*Pseudomonas syringae*), brown rot (*Monilinia laxa*), eutypa (*Eutypa armen-aca*), and possibly cytospora canker (*Cytospora leucotoma*), but I did not stop here. I eventually grafted several branches of my Blenheim to 'Satsuma', 'Elephant Heart', four different 'Santa Rosas', two cherry plums, and one of the 'Gage' plums as well as the so-called 'Miner's Plum'. I even grafted three peach varieties and one nectarine on this same apricot tree because of lack of space. Talk about diversity!

The original Santa Rosa scion wood that I obtained from my neighbor apparently had a virus disease and as a result, my grafts hardly ever produced more than two or three plums each year and growth was quite limited. Eventually, this virus spread to all the grafted plum and apricot varieties on this same tree. Initially I thought it was a cultural or genetic problem. The symptoms in general are interveinal chlorosis and slight cupping of the leaves. On Satsuma the interveinal portion of the leaves turned brownish-yellow prematurely. The edges of the leaves on the Santa Rosa became necrotic by midseason, and in some varieties, especially the Santa Rosa, production was reduced considerably. A reduction of growth was also apparent on most varieties.

The Miners Plum and the cherry plums were least affected by the disease while the Santa Rosa and Elephant Heart were most severely affected. The plumcot 'Mirocais' didn't do well from the beginning, a sign of incompatibility. Today, this original Rio Oso Gem peach tree has been grafted over to seven plum varieties, three apricots, one nectarine, one plumcot, and four peaches. This tree is not expected to see another season.

Which Disease Is It?

In a desperate attempt to identify the

(Continued on page 20)

(Continued from page 19)

disease, I purchased the book *Diseases of Temperate Zone Tree Fruit and Nut Crops* by Ogawa and English of University of California. Of all of the diseases listed for plums, the one that best describes the symptoms is *Prunus stem-pitting virus*, a strain of the tomato ringspot virus, which is primarily spread by the nematode *Xiphinema americanum*; the main alternate host is the common dandelion. Of course, it can also be spread through contaminated propagation wood.

Some of the scion wood on these grafts was obtained at the annual CRFG scion exchange meetings, so I was unable to go back and check the sources to see if these carried the virus. However, in a few cases where the scion wood was obtained from neighbors and friends, I was able to check the source, and with the exception of the first Santa Rosa plum supply, no evidence of this virus was noted, thus leading me to the conclusion that all of the plum varieties grafted on this one tree must have acquired the virus from the initial Santa Rosa scion wood supplied by my friend. When I recently went back to check this mother tree, not to my surprise, I was told it had died and was removed.

These dread experiences prompted me to write this article. In summary, it is extremely important to bring only healthy scion wood to exchange meetings. Proper identification is also very important, but easier to correct than a virus infestation. Limiting the number of grafts on a tree will also help to reduce the chance of contaminating the tree with diseases.

Nick Lolonis, a horticulturist with a Master's degree in viticulture from U.C. Davis, is a partner with his two brothers in the 180-acre family vineyard north of Ukiah, Calif. He also owns Nick's Refrigeration Service.

In search of a pear that needs no ripening

Breeding program aims for a pear that can be eaten right off the tree
by George Ing
Good Fruit Grower, July 2000

Scientists in New Zealand working with pear breeding are closer than might be expected with a concept which all pear growers dream about—a product which can be eaten out of hand or after brief room temperature ripening.

In the modern society of instant gratification and impulse buying, pears could easily be left behind. The consumer must have an "impulse" to want to eat pears four to ten days from the impulse to purchase.

For true, dedicated pear eaters, that can be managed by purchasing more pears as earlier purchases are almost ready to eat. But it takes true planning and a penchant to eat pears! Meanwhile, purchasers of oranges or apples can eat them in the parking lot if they choose.

Crossing European and Oriental pears

New Zealand's Allan White, at the Havelock North Research Centre in the Hawke's Bay region on the North Island, is in charge of the program. Crossing began some years ago of European pears with proper flavor, aroma, and texture with Oriental pears, which can be readily eaten out of hand.

Much of the testing and evaluation takes place at the Nelson Research Centre at Motueka, about 20 miles west of Nelson on the northern tip of the South Island. About 70 percent of New Zealand's pears are grown in the Nelson area.

1 0,000 trees

The breeding program is looked after by Lester Brewer, who kindly showed me around on a damp, early February morning. Fortunately, Oriental and European pears cross. The progeny, and there are about 10,000 trees under evaluation at Motueka, are evaluated under various parameters. Efforts also continue to breed a better

European pear. There is an interest in strong color, red or yellow or green.

Fruit must be large enough to meet marketing criteria, which appears to be about size 90. A traditional pear shape, European pear shape that is, is the most desirable, not the characteristic round form of most Asian pears.

As Lester Brewer led me through the test plots at the Motueka, as well as another site nearby, it was evident these people have something good going. It was a little early, as just the very earliest Bartletts were being harvested. The program is looking at later pears with long storage life able to be exported long distances, since most export markets are far from New Zealand.

We saw some exciting pears. The most interesting one is number P-37-48-81. While P-37-48-81 had at least two weeks to go before harvest, I found it could almost be eaten, suggesting that in two weeks it might have been edible off the tree, or with minimum storage and ripening time.

Pear P-37-48-81 has a nice pear shape, a smooth, soft, light green color, white flesh, good size, and appears to be productive and hangs well in the tree. There are others, some with red color or green. The "advanced" selections are both fascinating and interesting.

While the adage that a person who plants pears plants for his or her heirs may be extended to developing new and interesting varieties, New Zealand's program is well along toward countering that axiom. It is intriguing and will be fascinating to follow.

And, it could be a salvation for those who like pears but do not want to wait. Surveys show that only about 20 percent of people ever purchase pears. Could a variety ready to eat, with flavor and aroma, or one ready in a day or two or three, increase the number of pear eaters?

Top six most common mistakes made when pruning fruit trees

By Caleb Torrice
Cornell Cooperative Extension

These are the most common mistakes made while winter pruning in the orchard.

1. Cutting branches back instead of totally removing them. If you have a large caliper branch in the top of the tree, it needs to be removed. If that large branch is not removed, often it will continue to grow taking nutrients from smaller, lower branches. If a branch is cut back and not removed, it can increase in diameter and stiffen the branch.
2. A little off the top. Remember that we are striving for a Christmas tree shape a narrow top with a wide bottom. This shape allows for maximum sunlight use. Branches on the top scaffold, if left unchecked, grow vigorously absorbing more sunlight than other lower branches. This leads to shadowing lower branches and over time it mushroom shaped tree or in severe cases, trees with an up-side down Christmas tree shape. To avoid this problem. remember to use whole limb replacement! on the top scaffold. Keep those top branches young, healthy and productive.
3. Allowing droopy branches to remain in the tree. This is more obvious on tip bearers such as Cortland but often commonplace on most varieties. We all know that a tree's main goal is to grow towards the sun with vertical branches. We also all know that the best fruit is bore on horizontal branches.

So what is the story on branches growing down? Remember that the tree's hormones and nutrients are flowing through

the tree. These are the factors that determine bud development, vigor and even fruit size. When a branch heads south, these necessary components are naturally not abundant in these areas. That is why droopy branches usually have small fruit and the wood doesn't show signs of vigor but is mostly spurs. Remove these droopy branches by cutting back to a horizontal branch. This will allow for larger fruit. I know in tip bearing varieties this is an ongoing battle, however, if droop branches are not removed, over years you can see the decline in productivity, tree health and vigor.

4. Not pruning every year. Let's be honest with ourselves, pruning every year is the best option for maximum tree health and productivity, but is it always feasible? No. Warren Stiles used to tell us that the trees don't always read the books. I interpreted this to mean that you can't always go by the books and often have to use your best judgment.

Helpful hint No. 1: Focus on dwarf trees. This is where our bread is buttered in today's marketplace. Maximizing output per acre. Try to prune every year and at least every other.

Helpful hint No. 2: Don't go chainsaw crazy every four years. If you go into a block that hasn't been pruned recently and go hog wild, you will have an explosion of growth. In my opinion, it's better to cut less more often. Instead of hacking six large branches in one year, take three one year and three in year two. This will help keep your explosive vigor down and allow you to spend half as much time per tree; hopefully, allowing you to move quicker through the block.

5. Leaving branches too low in the tree. This is one of the problems associated with pruning with your wallet. I will prune someone else's orchard better than my own. because I am not counting fruit buds outside of my orchard. Forget about fruit loss and focus on correct pruning principles. You will often makeup for less fruit with larger, cleaner fruit. it's the same principles with these low branches. Remove them now with shears or in August with the mower.

6. Creating walls in the trees. Part of the reason for pruning is to allow for spray penetration. If you have it branch that is creeping into the row and you decide to cut it back instead of totally removing it, don't cut it back to a branch going straight up. I know this sounds like common sense, but I see this on a daily basis. In the winter that branch doesn't look like a large threat for spray penetration, however, after a spring of growth and hundreds of leaves, you have a very dense wall to spray through. Instead, cut to a horizontal branch going left or right. If it has a slight upward direction, don't worry too much. Hopefully your huge apples will bring the branch down to horizontal.

One of the rules in life: For every expert there is an equal and opposite expert. This is very true in pruning. The more people in an orchard, the more theories on how to prune. Remember that there is no correct way to prune, but there are wrong ways. Use the principles you know, and use your best judgement in the case at hand.

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If your address label has the renewal date highlighted in **RED**, your dues are delinquent and this is your **last** newsletter
if it is highlighted in **YELLOW** your dues are payable before the next newsletter

The Bee Line is the newsletter of the Western Cascade Fruit Society.
It is published quarterly; January, April, July and October and is included with membership.

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SEND IN YOUR E-MAIL ADDRESS AND WE WILL START A FILE OF WCFS MEMBERS

NEXT NEWSLETTER SEPTEMBER 2000

WE WANT TO HEAR FROM YOU

JUST AS PROMISED, HERE IS A NEW SURVEY Please take the time to respond so the Board can plan speakers at the events so you will want to attend. We also want to know what you want to read about in The Bee Line.

What changes in the Spring Annual Meeting would induce you to attend? _____

How about the Fall Fruit Show? _____

What topic would you like addressed? _____

A specific speaker? _____

Do you like the 3 column look? yes _____ no _____

Is it easier to read? yes _____ no _____ More difficult to read? yes _____ no _____

What area do you have for planting? city lot _____ acreage _____ how many _____ acres

Any comments you care to make? _____

WESTERN CASCADE FRUIT SOCIETY MEMBERSHIP INFORMATION

Please indicate at large WCFS membership or affiliation with a chapter. Dues are as noted.

Name(s) _____ () New () Renewal

Street Address _____

City, State, Zip(9 digit, please) _____

Phone _____ E-MAIL ADDRESS _____

_____ Member at Large	\$15.00	_____ Seattle Tree Fruit	\$23.00
_____ North Olympic	\$15.00	_____ (includes monthly newsletter)	
_____ Peninsula-Kitsap	\$15.00	_____ Tahoma	\$15.00
_____ Piper Orchard	\$15.00		
_____ Donation for Western Washington fruit research at Mt. Vernon			

HOW CAN YOU HELP THIS YEAR? PLEASE CIRCLE AS MANY AS POSSIBLE

BOARD MEMBER FALL FRUIT SHOW COMMITTEE CHAIR FIELD TRIPS SPRING MEETING
ARRANGING FOR SPEAKERS NEWSLETTER MAILING OTHER _____

TELL US YOUR FRUIT INTEREST, SO WE CAN PUBLISH ARTICLES OF INTEREST FOR ALL

Apples Pears Peaches Plums Cherries Kiwis Nuts Berries Other: _____

Make checks payable to **WESTERN CASCADE FRUIT SOCIETY** and mail to:
WCFS Treasurer, 2625 13th Ave W - Unit 306, Seattle, WA 98119-2054

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