the BeeLine

Winter 2018

Newsletter of the Western Cascade Fruit Society

Inside:

Propagation and Grafting events

(Bill Horn featured at Peninsula Fruit Club Spring Grafting Show)

March 3—WWFRF Winter Field Day—8:30-3:30,
16650 State Rte. 536, Mt. Vernon.

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March 3—Peninsula Fruit Club's Spring Grafting Show 10:00-4:00
West Side Improvement Club, 4109 W. E. St., Bremerton.

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March 10—STFS Member Meeting and Spring Grafting Workshop—10:00-2:00
The Brig at Warren G. Magnuson Park, 7400 Sand Point Way, N.E., Seattle.

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March 18—Home Orchard Society "Fruit Propagation Fair" 10:00-4:00
Clackamas County Fairgrounds, Canby, OR. *www.homeorchardsociety.org*

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March 24—Olympic Orchard Society—Member Meeting and Grafting Workshop
9:30-1:00 Sequim Prairie Grange, 290 Macleay Road, Sequim.

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Remember the Puyallup Spring Fair April 19 - 22, 2018.

WCFS Tahoma Booth—Washington State Fair
Think ahead! August 31 - September 23, *2018*

Get on Tahoma's List to help out at the Fall 2018 Washington State Fair.

FREE admisson & parking are available which is worth about $30! Please let Bill Horn know if you can help. Bill Horn, Tahoma Chapter Treasurer, 253-770-0485

The BeeLine is a quarterly publication of Western Cascade Fruit Society, a non-profit 501(c)3 corporation in the State of Washington.

Quince as Pear Rootstock

U. C. Davis, Research Fruit and Nut

Quince is used as a dwarfing rootstock for pear, depending on the scion desired and characteristics of the production area. Regarding pear production in Europe, Wertheim, a plant breeder in the Netherlands, discusses the use of quince as a dwarfing rootstock in high-density European-pear (*Pyrus communis*) plantings where small trees are desired. He characterizes good dwarfing rootstocks as those which induces early, regular cropping, good fruit size and quality, are easily propagated, and sufficiently cold hardy (2002). In a discussion of canopy management in European pear orchards, Sansavini and Musacchi (1994) indicate that quince rootstocks are highly suited to high-density pear plantings of cv. Doyenne du Comice and 'Blanquilla', inducing the desired qualities of early cropping and reduced vigor.

In the US, quince susceptibility to fireblight, winter injury and low tolerance for alkaline soils have limited its use as a pear rootstock. However, as indicated above, quince is a good rootstock for the Comice pear, demonstrating high yield efficiency and vigor. In the UC Pear Production and Handling Manual (2007), Reil reports that Comice pear on Quince BA-29 rootstock produces a favorable short wide fruit with a large diameter, while scions of cv. Winter Nelis, Bartlett and the Old Home crosses produce a less desirable long narrow fruit. He characterizes rootstock Quince BA-29 as tolerant of heavy soils, wet soil, and root lesion nematode, with good resistance to crown gall and moderate tolerance to pear decline. Less desirable traits of the rootstock include low susceptibility to chlorosis and fire blight, and a fair anchorage rating, due to the quince shallow root system. (Reil et al. 2007).

A factor which limits the broad use of quince as a pear rootstock in the US is poor compatibility with the popular scions Bartlett and Bosc, necessitating an interstem graft with a compatible pear cultivar such as Comice or Hardy. (Elkins and DeJong 2002).

Quince Rootstock Cultivars & Breeding Programs

Early in the 1900s, researchers at East Malling in England collected quince rootstocks from a number of nurseries throughout Europe, including those from the Angers region of France where quince had been used as a pear rootstock for centuries. The East Malling group designated rootstock clones with letters of the alphabet: Quince A through G. Quince rootstock clones now available in the United States include 'EM Quince A' and 'EM Quince C' from East Malling (EM) and 'Provence Quince' (=Quince BA 29-C) from France (Postman 2009), typically paired with scion cv Comice.

Breeding programs continue in the research and development of quince rootstocks compatible with various pear scions and pear production areas. In the US, breeding programs are associated with Washington State U., Oregon State U., the USDA-ARS National Clonal Germplasm Repository, the University of California, and the USDA-ARS Appalachian Fruit Research Station, WV.

Pear Genomics is a new website associated with these breeding programs.

References:

Elkins, R.B. and DeJong, T.M. 2002. Effect of training system and rootstock on growth and productivity of Golden Russet®Bosc pear trees. Acta Hort. (ISHS) 596:603-607.

Postman, Joseph. 2009. *Cydonia oblonga*: The Unappreciated Quince. 2009 - Arnoldia 67(1):2-9.

Reil, W.O., Ireland, J., Elkins, R.B. 2007. Propagation and Rootstock Selection. Pages 33-44. Pear Production and Handling Manual. University of California Agriculture and Natural Resources Publication 3483..

Sansavini, S. and Musacchi, S. 1994. Canopy architecture, training, and pruning in the modern European pear orchards: An Overivew. Acta Hort. (ISHS) 367:152-172.

Wertheim. 2002. Rootstocks for European Pear: a Review. Proc.8th Internat'l Symposium on Pear
Eds. L. Corelli-Grappadelli et al. Acta Hort 596, ISHS 2002: 299-309.

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Please mark your calendars for the WCFS Board and General Membership Meeting on April 7th, hosted by the Vashon Island Chapter. There will be more info about this gathering forthcoming, but for now please reserve a spot for it on your calendar. We're hoping to get wide attendance from each of our chapters' Board members.

Ron Weston,
WCFS President

Attention WCFS Members

Want to know instantly what's happening in the organization? Subscribe to the WCFS Forum. It's a benefit of membership. The Forum is private and closed to the public. It keeps us together and on top of what's happening in our chapters. Click on this link and follow the prompts:
http://lists.ibiblio.org/mailman/listinfo/wcfs
Judi Stewart, Forum Administrator

The big push for a dwarfing rootstock

Dave Weinstock, Good Fruit Grower,
September 16, 2016

Amelanchier rootstock continues to exceed expectations, while cold-hardy quince candidates have been narrowed to 14 accessions.

European growers and southern U.S. growers get all the dwarfing they need from quince rootstock. Unfortunately, quince lacks the cold-hardiness necessary to withstand Pacific Northwest winters, to say nothing of those of the Northeast.

There are two rootstock prospects undergoing late-stage testing that continue to outperform the rootstocks colder-climate growers are forced to use. Developed in Germany, Amelanchier continues to do well in field trials in Oregon, and a quince rootstock research project is poised to enter a North American testing phase.

Amelanchier trials in Oregon continue to show the rootstock's superiority to Old Home by Farmingdale 87, significantly outdistancing the industry standard's near-barren limbs with good fruit and flower production.

A superior dwarfing rootstock, Amelanchier should shed more light on pears in trellises, especially in lower canopies, which is an ongoing problem with OHxF.87. It tests hardy to minus 40 degrees Fahrenheit, and, though there is still a ways to go, its precocity promises heavier production for the life of the tree.

The plant is a genus of the Rosaceae family, consisting of about 25 species of deciduous shrubs and small trees, many of which are native to North America. Its bark is smooth, gray or, less commonly, brown. It has a five-petaled white flower and produces red to purple edible fruit. There are 32 Amelanchier ornamental cultivars and 25 Amelanchier cultivars grown for fruit.

According to documents filed by the University of Saskatchewan Plant Science Department with the International Cultivar Registration Authority, the word "Amelanchier" is derived from a French word meaning "small apple." The plant has an uncommonly large list of common names with some interesting folklore attached to them.

Early returns

Michael Neumüller, a horticulture researcher at the Bavarian Fruit Center in Hallbergmoos, Germany, has developed inter-specific and intra-specific Amelanchier hybrids.

His goal was to produce a cold-hardy rootstock for pears, which he succeeded in doing.

He produced an extraordinarily cold-hardy plant, hardy to minus 40 degrees Celsius in midwinter, which showed relatively little damage at that temperature," said Todd Einhorn, a Michigan State University horticulture associate professor.

In trials Einhorn conducted at Oregon State University the rootstock was precocious in the second leaf. "It was incomparable to OHxF.87. Grafted with Anjou scions, it yielded 20 to 30 bins per acre in its third and fourth leaf, while OHxF.87 had few flowers and no fruit," he said.

For plantings done with no interstems, Einhorn described its dwarfing as extraordinary. "On Anjou, it exhibited the degree of dwarfing within the range of what you'd expect to see on M.9 and M.27 apple rootstock," he said. Einhorn also saw 50 to 60 flower clusters per tree in the second and third leafs. "In the fourth and fifth leaf, we saw up to 200 flower clusters per tree," he said.

Quince trials

For the past several years, Einhorn also has investigated the use of quince as a rootstock in northern climates, looking for many of the same rootstock qualities Neumüller discovered in Amelanchier.

His work began in 2009 when he and Joseph Postman, the curator of the U.S. Department of Agriculture's National Clonal Germplasm Repository Collection in Corvallis, Oregon, evaluated a subset of the quince collection for cold-hardiness, selecting 60 varieties for initial review.

From that group, 22 varieties were as hardy or hardier than OHxF varieties. Along the way, they sent a portion of them to Richard Bell at the Appalachian Fruit Research Station in Kearneysville, West Virginia, to determine fire blight sensitivity.

Over the next five years, they winnowed the candidate list down to 14 accessions, always comparing candidate performance to that of OHxF.87.

Einhorn will begin testing these trees with and without Comice interstems and putting Bartlett and Bosc buds on top. This trial began in 2017. In 2018 and 2019, he will expand the trial to four states and one Canadian province: Michigan, Pennsylvania, New York, Washington and Nova Scotia.

He also plans to continue as chair of the pear rootstock committee of USDA's NC-140 project, a multistate project aimed at boosting peach, cherry, pear and apple production through improved rootstocks.

Cornell trials

Cont. on p. 4

Cont. from p. 3 pear rootstock

Before Terence Robinson, a Cornell University tree fruit physiologist, left for a three-year sabbatical, he set up a combined pear rootstock and training system trial at the New York Agricultural Experiment Station.

Now into their fourth leaf, the trees are starting to fill out with few differences in growth due to spacing, one of the research associates, Jaume Lordan, reported during the International Fruit Tree Association study tour in New York state. He cautioned that the study was still in its early stage.

Robinson planted the fruit in three tree spacings: 3 feet between trees and 12 feet between rows at 1,210 trees per acre, 4.5-by-12 feet at 807 trees per acre and 6-by-12 feet at 605 trees per acre. The three training systems they are evaluating are the tall spindle, V-trellis and biaxis. They are also evaluating three rootstocks within these systems — OHxF.69, 87 and Pyro 2-33 — and chose Bosc scions because of their cold hardiness and propensity for being sold as fresh fruit.

At this point, trees on a biaxis are smaller than the others because they spread their tree vigor over two axes. The smallest rootstock is the Pyro 2-33. The greatest yields occurred on OHxF.69, followed by OHxF.87 and Pyro 2-33 "As expected, yield per acre was highest on the 3-foot spacing and lowest on the 6-foot spacing," Lordan said. Highest yields were observed on tall spindle, followed by V-trellis and biaxis. •

– by Dave Weinstock

By any other name…

Amelanchier is one of those plants blessed with a lot of common names. Plant registry databases and academic literature are peppered with references to them and the attached folklore.

The common name boasting the best traditions is the serviceberry. There are at least three fanciful stories about the root of that moniker.

One says early American settlers often didn't bury the dead until the weather warmed and the ground thawed. Travel was easier, too, so memorial services were delayed until the serviceberry bloomed.

Another version is also related to winter travel. It says serviceberry blooms at the same time Appalachian roads became passable enough for circuit preachers in the region to travel to remote communities to lead church services.

A third bit of folklore claims its name is a corrupted form of sarvisberry, the name Romans gave to the European mountain ash. Apparently, early American settlers thought the plant's berries resembled sarvisberries.

Also named juneberry, it earned that label because its fruit ripens in June. Saskatoon, the largest city in Saskatchewan, is named for the Cree word for the Canadian variety of the plant.

It is also known as shadbush, so named because it blooms about the same time a fish species called shad runs in northeastern U.S. rivers.

Whatever it is called, an Amelanchier, by any other name, is still an Amelanchier.

Dave Weinstock

Addendum From Judi Stewart:

I received a reply that wild Serviceberry, Cotoneaster and Hawthorn were used as rootstocks for pear. These were wild plants found growing in this area.

Pears on certain Amelanchier rootstocks that are being tested have been reported to be half the size of OH x F87 and very cold hardy. Per the reports, the pears are earlier, large and more prolific than on regular pear rootstocks.

If you'd like to try this on our local Amelanchier but you can't find wild plants, you may be able to find bare root Serviceberry through your county's Conservation Districts. The Conservation Districts are currently having plant sales. Check your county's website. If your county doesn't have them, check a neighboring county. They're sold in bundles of 5 or 10.

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The Winter 2018 BeeLine was produced by
Gathering Editor Marilyn Couture,
with input from membership.
Please contribute your articles for our next
Spring issue!

Issue Deadlines:
Winter December 15;
Spring February 15;
Summer May 15;
Fall August 30

Email your articles to: **couture222@msn.com**

Book review: The Illustrated History of Apples in the United States and Canada

by Daniel J. Bussey, edited by Kent Whealy, published in 2017 by JAK KAW Press LLC, Mount Horeb, Wisconsin
https://www.jakkawpress.com

Review by Gary Paul Nabhan

Oh, what a joy it is to open a book (or set of books) that not only edifies you, but astounds and humbles you with fresh insights into the diversity of fruits on this earth! Dan Bussey's magnum opus on apples is such a work!

If you are at all like me, you occasionally feel blessed by a horticultural book or series of a magnitude, depth, utility and beauty that is unprecedented in publishing history. The Illustrated History of Apples in the United States and Canada is one such publishing feat, and it is unlikely that a project of this proportion will appear for any other horticultural crop during the rest of our lifetimes. It reminds me of those classics by Liberty Hyde Bailey and David Fairchild that have stood the test of time.

This awe-inspiring, color-illustrated hardcover set of seven volumes totaling over 3,500 pages systematically documents all apple varieties that have appeared in publications in the United States and Canada through the year 2000. Its 16,350 separate descriptions of distinct apple varieties, includes detailed description of every significant morphological feature, as well as astonishingly comprehensive commentaries on their origins and histories that cite 1,650 references from the two centuries of apple literature in the US, England, Canada, Germany, France and Russia.

It also cross-references those listings with shorter ones for 9,700 synonyms for the same varieties and ecotypes, untangling many nomenclatural "balls of yarn" that have plagued apple historians for decades. Usage lists for cider, dessert, ornamental, rootstock and fresh or baked kitchen use will particularly appeal to growers and cidermakers.

As icing on an already-rich cake, the volumes also include 1,400 life-size watercolors commissioned by the USDA a century ago, only a few dozen of which have ever been published (and those were in Creighton Lee Calhoun, Jr.'s masterpiece on old Southern apple varieties.) The illustrations hint at diagnostic details to which written descriptions cannot do 1 full justice.

But it is not the sheer volume of new information that makes this book series a masterpiece. It is the diligent scholarship of author Dan Bussey, who has also personally cultivated hundreds of these varieties at two of his orchards in Wisconsin and at the Seed Savers Exchange Heritage Farm in Decorah Iowa. Dan worked for three decades unpaid by any agency or non-profit to compile this information and vet it with hands-on evaluation of the varieties and consultations with the likes of Lee Calhoun, Tom Burford and John Bunker, among many others. (Bunker also contributed an introductory essay.) Bussey is a remarkable scholar and practitioner in his own right, but his years of dialogue with other experts in the horticultural community means that no stone (nor apple) has been left unturned.

If Bussey's own contributions are not enough to wow you, then consider the seven additional years of meticulous editing and design work that Seed Savers Exchange co-founder Kent Whealy contributed, along with Anne Korthase, Aaron Whaley, Jessica Whealy and the staff at the National Agricultural Library in Beltsville, Maryland. Kent Whealy knows horticultural publishing as well as anyone, and with Judith Kern of the Ceres Trust, they invested not only in this book but also in the high-quality scanning of 7,584 historic illustrations of fruit held in the Pomological Watercolor Collection in Beltsville.

Whealy had to form his own publishing company – JAK KAW Press LLC – to ensure that Bussey's research and the appropriate pomological watercolors were recorded for posterity. The combination of century-old watercolors and historic varietal descriptions has created an unequaled and unprecedented identification tool when searching for lost apples.

No series of book volumes of any fruit species can hold a candle up to this masterwork. We owe the many contributors our deep gratitude. Let these books find a way into your life and library... And have the nearest institutional library to you purchase another copy! Then be inspired…plant a dozen more heritage apple varieties to keep America's most revered horticultural tradition alive. Make some hard cider with them, a raise a glass to toast Dan Bussey!

(NAFEX)
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Gathering Editor Couture recommends that each WCFS Chapter own a set of these seven volumes.

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Growing Figs in the Pacific Northwest
cloudmountainfarmcenter.org/pdf-guides/

Though figs are of Mediterranean origin, they thrive and fruit well in the Pacific Northwest. They produce small embryonic fruit each year in late summer that over winters and ripens the following summer. They are self fertile. Here are a few tips to make a fig a successful addition to the garden.

Site Selection Figs will do best if planted in a warm site. Though they can be grown in the open, planting them against a south or west wall can increase ripening success in cooler summers. They prefer a well drained, sandy soil. If the soil is especially heavy, consider building a raised bed or mound for planting. Sandy soil and raised beds warm earlier in the summer, increasing the growing season. Figs are somewhat drought tolerant. Figs can also be grown in large containers, which can be over wintered in a garage, shed, or greenhouse.

Winter Protection The first few years in the ground, protect the trunk of the fig by wrapping pipe insulation around it in the winter, after the leaves drop. Once the fig is well established, it can resprout from its roots if severely damaged by an especially hard winter. Container grown figs should be moved into a protected location for the winter, such as an unheated garden shed or garage. If left outside, the pot should be wrapped with insulation.

Pruning Figs can be grown as a single trunk tree, or as a multistemmed bush. They can be espaliered into a fan shape. The most productive method of training is to treat them as a multistemmed bush. Pruning is done in two phases. In early spring, before the tree breaks dormancy, remove any winter damaged wood, thin out weak shoots, and, on older trees, remove older, non-productive wood to the ground. The goal of this pruning is to keep the fig open to light and air circulation, and to stimulate new productive wood. The second pruning is done in mid-summer, and consists of pinching the new growing tips once they have extended 4-6 leaves. New side shoots will grow from these leaf axils, which will then produce embryonic figs in their leaf axils that will remain small enough to over winter and ripen the following summer. Without this summer pinching, the tree will often set fruit too early, and the fruit will grow too large to over winter successfully. In late fall remove any unripe figs that are larger than a marble; these will not overwinter.

Harvest Figs usually ripen over a several week period in August in the Pacific Northwest. They are ripe when the fruit droops on its stem and becomes quite soft. If we have rain while they are ripening, the base of the fig will sometimes split and exude a sugary juice which is very attractive to wasps. You can eat the figs fresh, dry them, freeze them, or make jam.

Observations and experiences on growing figs from Daniel Wachenheim, HOS Member

Bearing Characteristics.
There are fig trees that only bear in early summer, breba figs (**King**), some that only bear in fall, main crop (**Hardy Chicago**), and some that do both (**Lattarula**).
Flavor - flavor will depend on which figs ripen in hot sunny summer, and which ones ripen in fall, with less sun, cooler weather, and shorter days.
Propagation.
Figs grow easily from cuttings, they almost always own-root.
Figs growing <u>in-ground</u>. I've had some of these varieties 15 years, others as little as 5 years. I have a few others just in containers, which is more trouble, especially keeping them watered. My container trees are also less productive than my in-ground trees.
Lattarula. Excellent breba, good main crop some years. Mine is close to the house, south side, it's never had freeze damage. Very sweet and juicy. Very vigorous. Green or pale yellow. Also sold at "Marseilles White" and other names, and grown by Thomas Jefferson at Monticello.
King. Excellent breba, only. I sometimes get a small main crop - rarely. Sheltered, next to the Lattarula. Complicated pruning, because you have to leave this year's growth for next year's breba crop. Very sweet and juicy. Very vigorous. Green. A California hybrid also sold as "Desert King".
Hardy Chicago. Mostly main crop, rare brebas. Mine is exposed, no protection. Not as large figs, flavor is richer, more complex, and a bit less sweet compared to the summer varieties. Brown. Moderate vigor.
Petite negri. I bought this about 15 years ago mail order from a S. Carolina nursery that is careless about names, so the name might not be right. It's also been labeled Aubique petite and some think it is Negronne. Much slower growing but now approx 8 foot tall tree with lots of figs each fall. Some consider it dwarf. Minimal summer, crop, mostly fall. Later than Hardy Chicago, and I often lose about 1/4 to 1/2 of the crop to mold due to late ripening. Even so, I like it a lot. Flavor is better than Hardy Chicago, sweeter and richer. Maybe with the hot summer this year, they will bear earlier. This tree is unprotected. It had some freeze damage during the worst winters, but not significant. Black fig, red inside.
Pruning.
I keep all of my fig trees pruned to a moderate size, small enough to reach all figs without a ladder. For most, when the new growth is about 4 to 6 leaves, I snap off the growing tip to stimulate fig formation and tight branching.

Cont. on p. 8

All About the Apple Called Yellow Bellflower

Mystery surrounds this apple, for no one knew or remembered when it originated but "Coxe" reported in 1817 "The original tree at Burlington, N. J. was large and old." There is no doubt that it was an old colonial fruit. The 'Yellow Bellflower' was always called 'Belle Fleur' by the French because of its beauty in blossom. This large, handsome, winter apple was a favorite for making pies. Its smooth pale lemon-yellow fruit, sometimes reluctant to fall, lingered even when the first flurries of winter left the tree bare of leaves and progeny exposed to birds and animals and children.

With each advance of civilization on our continent the 'Yellow Bellflower' readily found a home, for the apple grew up with the pioneer and grew old with the pioneer. The apple arrived in the Oregon Country by a strange mode of transportation, at a time when the native hostility was at its highest. It fell to Henderson Luelling and William Meek of Iowa to begin a westward trek of nursery wagons with the first introduced grafted, standard-fruit varieties into the West. It was said that one of the grafted trees was a "Yellow Bellflower", that reached Oregon in 1847.

H. M. Williamson, in the "National Nurseryman" reported that Luelling and Meek were able to find at the homes of settlers a few seedling trees, mostly grown from seeds of fruit raised at Vancouver. They also used the wild crab apple as stock for apple and pear trees, and the wild cherry stock for stone-fruits, but did not have the best success with these stocks. They also purchased some apple and pear seed from settlers who arrived in 1849, and in the fall of 1859 were able to graft 18,000 trees.

At this point one might think the episode is ended regarding variety and trees, except I came across Henry E. Dosch's secretarial account in the 1901 report of the Board of Horticulture for the state of Oregon. He reported "apple trees standing on my own grounds near Portland and planted nearly fifty years ago "Baldwins, Spitzenbergs, Fall Pippins, Gloria Mundi and Bellflower bear as fine fruit today (1901) as they ever did."

The significance of the Dosch report did not "reach" me right away, until I stood before an aged 'Yellow bellflower' apple tree in S. W. Portland. At the time I was working on a pioneer orchard for the Oregon Historical Society at their Howell Territorial Park. This aged tree would certainly compliment my orchard, I thought. My greatest interest was in the owner of the property on which the tree grew. This kind, witty, "alive" woman was no other than Henry E. Dosch's daughter. A great puzzle was forming in my mind and some of the pieces were fitting perfectly. Could this tree be one of the 18,000 originals, from the Luelling and Meek Nursery of Milwaukie, Oregon? According to Henry Dosch, his orchard indicated an origin of about 1850!

The apple tree is living on land that was led on for a Donation Land Claim by Albert Kelly. Kelly planted the orchard. Ownership of the land eventually going to the children gave Dr. O. P. S. Plummer, a direct descendant, care of the orchard. His daughter, Mrs. Agnes Burns, at 94 years of age, graciously gave me an afternoon of her time a few years ago. She remembered playing among the old trees as a youth. She told me they came from the Luelling and Meek Nursery of Milwaukie, Oregon.

Tenure of the orchard and land went to a Mr. Bradford about 1870-72, and other continuity of ownership is presented by John Minto, in his "old Orchards 1897-98". He reports: "Mrs. Dosch purchased the place eight years ago (1888) in a rather forlorn hope of saving her husband's life, which physicians said would not last six months longer in his business.

There was an old orchard of prunes, 12 years old, intergrown with plums and other brush, also the apple orchard was not much better, forty years old. It was a wilderness of sprouts, moss, wooly aphis, and everything that preys upon a neglected fruit tree. These were removed, pruned, fertilized and sprayed, and now they bear from six to twelve boxes of excellent fruit per tree."

The orchard from that period until today owes its great longevity to the horticulturalist Henry E. Dosch and his daughter, Margueritte. Mr. Dosch was to live into the 1920s. Margueritte became the orchard's keeper and even until 1976 resided on the property.

Much has happened since the sale of those first 18,000 fruit trees. The ˜Yellow Bellflower' was planted in lands from Mexico to Canada and a few still exist. You might ask: "Are there not other old apple trees in the West that might be as old or older than the Dosch tree?" I visited hundreds of orchards, noted historical records, measured trees, secured scions, and visited with the owners. All of this search and research to get the facts and to establish a negative answer. When it was over there was one paramount realization. In the Dosch orchard stood the oldest, living, grafted-standard-fruit-variety in the Western United States, the magnificent 'Yellow Bellflower.'

Ted Swensen, Home Orchard Society
Pome News, April 1, 1976

Gathering Editor Couture and John Littlehales collected Yellow Bellflower scion on site at Milwaukie Museum in 2015. Historically this tree was moved from a prior Milwaukie site and may have been one of Luelling's original stock.

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News from Chuck Polance, Tahoma

Hi Folks!

We now rent son's house in Oregon City, OR. Closer to our kids now. The Home Orchard Society has a big orchard just a 10-minute walk away. All the usual fruit trees (all mature) plus kiwis, pluots, grapes… and yes, FIG TREES. For a $25 a year fee, I can volunteer 4 hrs/mo, work/interact with neat people and pick all the organic fruit I want!
A 20' x 20' garden space is $40. Water included.
This is a real blessing. Thought I'd cry.
-Chuck

Grower says bloom thinning by hand gets the results he wants

Good Fruit Grower, April 15, 2017

Let hands take hold by Shannon Dininny

Auvil Fruit Co., long an innovator among Northwest tree fruit growers, had a new surprise for growers attending the International Fruit Tree Association's 60th annual conference in Washington in February: bloom thinning by hand. While labor intensive, Del Feigal, orchard manager, said the move enables him to ensure the orchard sets just the right crop, with apples in the correct locations on the tree.

"We'll have an idea for that variety, for that situation, how many apples we want on that particular tree, based on past experience, to achieve our goals on size, sugar content, on all of those things," he said. "We'll end up leaving that many flowers in those positions at that particular time. Then we'll come back in the summertime if we left a little bit too many, and we'll green fruit it down to the numbers we want." Thinning starts at pruning time to try to thin down the crop, with an idea about how many buds should remain — and where — on each tree. That then allows blossom thinners to do their work.

Feigal said they don't usually leave king bloom, because it never has shown a positive increase in fruit quality. For some varieties, such as Fuji or Pink Lady, king bloom will enable a bigger apple, but sometimes growers don't want bigger apples. "For Galas, it doesn't give you a bigger apple for side bloom versus king bloom, when you're utilizing thinning by hand, there's no difference," he said. "Side bloom catches up, and it tends to be as aggressive as a king bloom." Thinning the king bloom costs more, because it's a two-hand move, increases costs almost 30 percent, he said. And in Honeycrisp, leaving the king bloom when blossom thinning by hand ultimately increases the seed count per apple, which also can cause the alternate bearing issues seen in that variety. Generally, Feigal said the company hand thins Fuji and Honeycrisp for return bloom, Gala to increase size, in the average 80 to 72 count, and Pink Lady to reduce fire blight risk. "The less flowers out there, less chance for fire blight infections, especially if you're going through thinning down to your primary bloom and pinching out your late blooms, so it's not there for two to three weeks after petal fall," he said. "It almost cuts your time for fire blight in half and worry about cover sprays." For Granny Smith, hand thinning appears to create unwanted bigger fruit, so Auvil still thins the variety chemically.

Feigal acknowledges the process takes a lot of people; he figures one person per acre for the season. The best time to start plucking flowers, with no pruners required, is when the flower just pops out. The workers who know the routine won't cut their fingernails for several weeks prior to blossom thinning.

For some varieties, such as Pink Lady, because it's one of the first to bloom, Feigal also said he'll thin primary bloom, then do a fast pass to get rid of rattail bloom to ease fire blight concerns.

We already know how many apples we want per limb. It varies, depending on our plantings, from two apples per limb up to four," he said. Then, as the blossom thinners start their work, the instructions will be to delete four flowers on that particular limb in the best position. An added bonus to that: if there is a bad return bloom, with only two clusters, the thinners can leave two doubles and still leave four flowers, he said. Any extras can be taken off. "Hopefully you don't have more than eight clusters."

Trellis ease - In some blocks, Auvil is also moving to a shorter, four-wire trellis system with 8-foot rows, with anywhere from 1,600 to 2,400 trees per acre. The top wire in the new system is 6 feet, 6 inches in height, compared with 13-foot heights for the top wire in the traditional system. One advantage, Feigal said, is the new system requires less equipment and fewer ladders and people — including for labor-intensive blossom thinning. In addition, the company is able to get the shorter system into production sooner, with plantings from rootstock and from bench grafts, his preferred method.

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Cont. from p. 6 Observations on Figs

I prune out the center for a bowl-shaped tree to allow light inside. My established trees got no water at all for the past few summers, and do fine even in this summer, which was the hottest on record (2015) and very dry. Younger / smaller trees have less extensive roots so I do water them. I mulch about 3 to 5 foot diameter area under the trees, usually with leaves or grass clippings, or wood chips if I can get them cheaply. I use tanglefoot, apply to plastic sleeve on trunk, to keep ants out of the figs. For local varieties, I recommend: Raintree lists, One Green World and Burnt Ridge Nursery.

Fig trees are so easy to start from cuttings, if a variety is seen to do well locally, a cutting from that tree would be a great way to start more. I've started dozens, and gave most away.

I also have Desert King and also think it a bit too sweet and wanting in flavor. But they are healthy, productive, and beautiful. Negronne has done really well for me in Vancouver and has more and better flavor, especially the brebas when they ripen in the heat.

I don't grow it, but I also like Lattarulla better than Desert King. But it is more delicate.

Daniel Wachenheim

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The Myth of Collapsing Root Balls "Balled and burlapped root balls must be left intact during transplanting"

Linda Chalker-Scott, Ph.D., Ext. Horticulturist and Ass. Prof, Puyallup Research and Extension Center, WSU

The Myth

While shopping for trees at my favorite nursery, we recently overheard another customer ask a staff person about installing her newly purchased B&B tree. "When I plant my tree I should take off the burlap and twine, right?" she asked. "Oh no," exclaimed the staffer. "You don't want to disturb the root ball. Just peel the burlap back from the trunk and leave the rest intact. Otherwise, the root ball will collapse and the tree will die."

At first glance, this appears to be reasonable advice. Balled and burlapped, or B&B trees, are much heavier than containerized plants and one can visualize the root ball collapsing and crushing the root system. The weight of the root ball also helps stabilize the tree and prevent tilting or falling. Finally, the root ball soil contains beneficial microbes and other soil organisms that can help ease transplant shock to the root system. With these benefits in mind, why would you consider doing anything differently?

The Reality

Many nurseries will not guarantee their plant materials if the customer disturbs the root ball, so customers are loathe to do anything that might negate this policy. This is unfortunate, as disturbing the root ball is exactly what you want to do to maximize survival of your newly transplanted tree.

A previous column discussed how to transplant containerized plant materials properly, and some of the same issues apply to B&B trees as well. The most important reason to disturb the root ball of a balled and burlapped tree is to inspect the root system. The circling, girdling, kinked, and hooked root systems often found in containerized plants occur frequently with B&B materials, too. Nearly every B&B tree I have purchased and installed, either in my own landscape or as part of a project, has had serious root defects. By removing the heavy clay one can find and correct many of these defects. Without corrective pruning these defects will significantly lower the life span of your tree. Remember, root pruning stimulates the growth and development of new roots that will enhance tree establishment in the landscape.

A second reason to break up the root ball is to remove the clay soil that makes the tree so heavy in the first place. Most B&B trees are grown in a soil with clay characteristics so that when the tree is dug the root ball it will hold its shape: sandy soil will simply fall away from the roots. The clay soil not only maintains its shape but also retains water, so that B&B materials are usually more stable in terms of optimal water conditions during the time they are out of the ground. When the tree is planted into the landscape, however, the clay character of the soil is often different than that of the surrounding native soil. Differences between soil textures will impede water movement and therefore inhibit root establishment.

A final reason to remove the bagging materials and root ball soil is that many of the B&B specimens at the nursery have been burlapped too high during field digging and bagging. Burlap and soil that covers the trunk above the root crown will lead to trunk disease and death. In every nursery I've visited I have found more than one tree trunk literally rotting in the bag. Before purchasing any B&B stock you should ensure that a healthy trunk lives beneath the burlap.

The best practice for transplanting B&B trees is relatively straight-forward. (The rationale for many of the practices listed below are detailed in previous B&B columns):

1) Remove all wire baskets, twine, and burlap from the root ball. Working on top of a tarp will allow you to transport the root ball remnants elsewhere.
2) Remove all clay from the root ball. This can be done most easily by using a water bath or a hose. Use your fingers to work out clumps of clay from between the roots.
3) Look for and prune out defects in your freshly denuded roots. Be sure to keep the roots moist during this procedure and work in the shade if possible.
4) Dig the planting hole to be only as deep as the root system and at least twice as wide. The hole will resemble a shallow bowl.
5) Form a soil mound in the center of the hole to support the root crown of the tree, and arrange the roots radially.
6) Backfill with native soil; do not use any type of soil amendment.
7) Water in well, preferably using the water from step 2 which will contain nutrients and microbes. Do not step on the root zone, but gently firm using your hands. Add an appropriate fertilizer (i.e. primarily nitrogen and little or no phosphorus)
8) Mulch the entire planting region with at least 4" of organic mulch, keeping a buffer between the trunk and the mulch to prevent disease.
9) Stake your tree low and loose with 3 stakes for no longer than one year after planting.
10) Keep your tree well watered during the first year of establishment. You may have removed a good portion of the root system and its ability to take up water and nutrients will be temporarily impaired. Do not succumb to the temptation to crown prune or add expensive, but pointless, transplant supplements.

Cont. on p. 10

Cont. from p. 9 Root Balls

This method is radically different from historically accepted practices. Yet recent and ongoing research demonstrates that bare-rooting B&B trees leads to substantial increases in tree establishment and survival. Investing the time to prepare and install trees properly will pay future dividends of reduced maintenance and mortality for the lifetime of your landscape.

The Bottom Line

- Balled and burlapped plant materials usually contain soil significantly different than that of the transplant site.
- Differences in soil texture will impede both water movement and root establishment.
- Root defects can only be found and corrected if root ball soil is removed.
- Proper root preparation combined with best practices for installation will greatly improve tree establishment and survival in any landscape.

For more information, please visit Dr. Chalker-Scott's web page at http://www.theinformedgardener.com.

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Foods to Eat for the Healthiest Lungs

by: Beth Levine/The Baseline of Health Foundation

Our bodies start changing as we age, long before we hit senior citizen status. And oftentimes these changes are so incremental that we don't even notice until something that used to be easy is much harder than we remember.

For example, if you don't take the stairs much, other than a few steps in your home, you might be surprised to find that walking up several flights leaves you winded. That's common in people who don't do cardiovascular exercises every day, since the lungs begin to show signs of aging as we enter our 30s. If you're interested in protecting your lungs, consider the new research that point to the benefits of eating certain fruits and vegetables more often.

The study, which was conducted at the Johns Hopkins Bloomberg School of Public Health in Baltimore, Maryland, found that greater consumption of both tomatoes and apples is associated with healthier lungs that show fewer signs of age-related damage. These results are based on an investigation involving 680 men and women residing in the United Kingdom, Germany, and Norway who were tracked for a period of 10 years. Each subject was tested to measure their lung function in 2002, and they also answered dietary questionnaires. In 2012, the same lung function evaluation and food frequency surveys were completed once again, and the researchers compared the outcomes to determine what was beneficial for the lungs.

They discovered that participants who ate more than two tomatoes on average or more than three servings of apple every day had minimized decline in lung function compared to their peers who consumed less than a single tomato or less than a single portion of fruit daily.

What's more, consumption of tomatoes and apples had a significant impact on the volunteers who were former smokers. Their improvements in lung function over the 10 years studied suggest that a diet higher in tomatoes and apples may speed up the repair of lung damage due to smoking.

While the research established a link between eating both tomatoes and apples and better lung function. This is important considering that lung function begins a slow, progressive decline even in healthy individuals starting around the age of 30. It happens to some degree to everyone.

These findings should not be all that surprising to anyone who knows about the valuable natural compounds in tomatoes and apples. Tomatoes offer lots of lycopene, an antioxidant that fights free radicals and has been shown to help prevent several kinds of cancer. They are also a great source of vitamins A, C, K, and B6 which can protect eyesight, bolster the immune system, maintain blood clotting functions, and more. And apples, too, are rich in antioxidants and anti-inflammatory substances that can lower the risk of cancer. Apples have also been associated with promoting the growth of good gut bacteria, reducing the risk of asthma, and preventing cardiovascular disease.

So, try to add more tomatoes and apples into your daily diet of fresh fruits and vegetables. Place some slices of tomato on your sandwich, throw a handful of cherry tomatoes on your salad, or dice them up to complement the flavor of grilled chicken. Apples are delicious as a snack on their own, or a nice addition to a salad or fruit platter. And if you want to try something different, combine your apples and tomatoes in a salsa, soup, or chutney.

Submitted by Judi Stewart, NOFC

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Links
Here is a list of sites on the web that may be of interest to you.

Related Organizations
Backyard Fruit Growers
www.sas.upenn.edu/~dailey/byfg.html
California Rare Fruit Growers
www.crfg.org
East of England Apples and Orchards Project
www.applesandorchards.org.uk
Indiana Nut Growers Association
www.nutgrowers.org
Midwest Fruit Explorers
www.midfex.org
North American Fruit Explorers
www.nafex.org
Northern Nut Growers Association
www.northernnutgrowers.org
Oregon Sustainable Agriculture Land Trust
www.osalt.org
Western Cascade Fruit Society
www.wcfs.org
Western Washington Fruit Research Foundation
www.wwfrf.org
Home Orchard Society
www.homeorchardsociety.org/
Seattle Tree Fruit Society
www.seattletreefruitsociety.com/
Seattle Tree Fruit Society—Apple ID program
www.seattletreefruitsociety.com/appleid.php

Fruit Research
National Clonal Germplasm Repository
www.ars-grin.gov/cor
Tree Fruit Research and Extension Center, Washington State.
www.tfrec.wsu.edu
Northwest Berry and Grape Infonet.
berrygrape.oregonstate.edu
Pedigree: A Genetic Resource Inventory System
www.pgris.com

Oregon Department of Agriculture
www.oda.state.or.us

Goverment Sites
US Dept. of Agriculture
www.usda.gov
USDA Agricultural Research Service
www.ars.usda.gov

Helpful Sites
Orange Pippin
www.orangepippin.com
Kiyokawa Family Orchards
www.mthoodfruit.com
Red Pig Tools
www.redpigtools.com
Friends of Trees
www.friendsoftrees.org
Cornell Gardening Resources
www.gardening.cornell.edu
http://www.fruit.cornell.edu/tree_fruit/GPGeneral.html
The National Arbor Day Foundation
www.arborday.org
UBC Botanical Garden
www.ubcbotanicalgarden.org
The Reckless Gardener
www.recklessgardener.co.uk
Farm & Garden
www.farm-garden.com
SeeMeGarden.com
www.seemegarden.com
GardenGuides.com
www.gardenguides.com
VitiSearch: Helpful Resources about Grapes
www.vitisearch.com
Avant-Gardening: Creative Organic Gardening
www.avant-gardening.com
The Hardy Plant Society of Oregon
www.hardyplantsociety.org
Ask the Berry Man
www.asktheberryman.com
BackyardGardener.com
www.backyardgardener.com
Tom Brown's website
www.applesearch.org

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