

the BeeLine

Winter 2016

Newsletter of the Western Cascade Fruit Society



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

LOTS OF NEW APPLES COMING TO OUR NOTICE!

By Robert A. Norton, Ph.D.

Over the years I have written numerous lists of my favorite apple varieties (cultivars). Some lists were broken down into favorite dessert, cooking, and cider varieties, as well as ones to avoid because of defects, such as disease susceptibility or growing problems. Have you noticed all the new varieties being introduced at the grocery store lately? Some examples: Jazz, Aurora, Candy Crisp, Pinova, Corail, Zestar, and Silken. Some, if not most, of these are so-called “club” apples, because they are owned by an organization, a packer, or a marketing group whose goal is to derive a premium price in the market by limiting the volume or the distribution of the variety. Honeycrisp almost fits that description, but the University of Minnesota goofed in the licensing procedure (my opinion), so that now anyone can grow it. Thus, the premium price it now receives soon will disappear.

I am attempting to get access to some of the new varieties so I can determine how they will perform west of the Cascade Mountains. In most cases, I will have to sign a non-propagation agreement that will prevent, for a time at least, the distribution of the variety to anyone without permission of the owner. Most of these varieties will be under patent of trademark status. Patent status prevents illegal propagation of the germplasm (the variety), whereas trademark status controls the name of the cultivar almost indefinitely. Here are an alphabetical listing and some descriptions of new varieties we are interested in obtaining for trial. If any of you has access to any of them, I would greatly appreciate getting a scion for propagation this winter or in early spring.

Ambrosia—Chance seedling from British Columbia; U.S. rights owned by Columbia Marketing, Wenatchee. Commonly seen in our local market, the apple is a pinkish, blushed bicolor fruit with excellent texture and flavor.

Aurora—Cross of Gala and Splendor (two New Zealand apples), from Summerland, British Columbia. Licensed to Auvil Fruit Company in Wenatchee. Yellow skin, with a pinkish orange blush, very sweet.

Candy Crisp (GRE 498)—Chance seedling from New York, patent state unknown. Yellow-green skin, scab immune, sold by Stark Bros.

Cosmic Crisp (WA 38)—The first major release from Washington State University’s breeding program. It won’t be released to backyard growers like us for some time, I’m sure. Would be nice to see if it has scab resistance.

Crimson Crisp (Coop 39)—Disease-resistant red apple from the Purdue-Rutgers-Illinois breeding program. Ripe with Jonagold.

Crimson Gold—Scab resistant, yellow apple from the Czech Republic. Available from Adams County Nursery.

Crimson Topaz—Scab resistant cv. From the Czech Republic. Orange-red skin, excellent flavor. Adams County Nursery.

Kanzi—A cross of Gala and Braeburn; sweet-tart flavor. Licensed to Columbia Fruit Co. of Wenatchee.

Kiku—A striped Fuji commonly seen in our Vashon Market being sold at a premium price over regular Fuji. U.S. license owned by Columbia Fruit.

Cont. Page 2

Norton—New Apples cont.

- Lady Alice—Chance seedling from Gleeed, WA. Licensed to Rainier Fruit Company. Red apple with sweet-tart flavor and unique texture.
- Opal—A yellow apple, firmer, later ripening, and less susceptible to bruising than Golden Delicious. Opal, a cross of Golden Delicious and Topaz, is owned by Broetje Orchards of Preston, WA.
- Pinata (Pinova)—Cross of Duchess of Oldenburg, Cox's Orange Pippin, and Golden Delicious. Pinkish blush, similar in flavor to Golden. Licensed to Stemilt Growers, Inc.
- Rubens—An Italian variety, possibly; solid red skin, possibly scab resistant, with production and marketing rights owned by Columbia Fruit and Chelan Fruit Co-op. A cross of Elstar and Gala.
- Ruby Frost—A cross of Braeburn and Autumn Crisp, by Cornell University. Available only to New York growers.
- Silken—Ivory to pale yellow, medium-size apple from British Columbia. Extremely crisp and juicy, but mild in flavor. Susceptible to scab.
- SweeTango—University of Minnesota release; patent status unknown (to me); excellent quality dessert apple.

Many new cultivars are being released by both public and private organizations. Most of them, although probably of excellent quality, will fall by the wayside. Some of our old favorites, such as McIntosh, Cameo, Jonathan, and Golden Delicious will continue to decline in popularity. Gala and Granny Smith will continue to be popular, although I don't recommend either for our own area. (Gala is scab susceptible; Granny has late maturity).

If any of you have access to any of the cultivars listed, or others I have not included, I would appreciate either getting a stick for grafting or knowing an available source of a tree. Our research and demonstration orchard at Sunrise Ridge here on Vashon Island would be the test site for these new cultivars and would be closely observed and protected.

Bob Norton, email: applecorps26@comcast.net

P.S.

I have a suggestion: Why not suggest to your Club members that whenever they see a new apple cultivar in the grocery store that they buy one apple, often at an exorbitant price, take it home and do an evaluation with other members of the family. Try to record the opinion of the texture, flavor and appearance, origin, and date of sampling. Ask a Club member to collect these data until perhaps next July or August and if possible, send it to me. I would analyze all the information received and write an article on the results. Bob Norton

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Dr. Bob Norton at 90th birthday along with wife Carol who celebrated 80th.. A grand party with 120 friends and family was held Jan. 3 at Burton Lodge on Vashon Is. The event was organized by Emily Gar Macrea.

WCFS teleconference Saturday,
Jan 23, 1016, beginning 9:50am.

For details contact:
couture222@msn.com

There are a limited number of
telephone lines available.



Bacteria discovery prompts Oregon quarantine

Mateusz Perkowski, Capital Press, Salem, Dec. 9, 2015

A quarantine in nine Oregon counties will restrict plant shipments due to the discovery of *Xylella fastidiosa*, a bacterial pathogen.

The discovery of a bacterial disease, *Xylella fastidiosa*, has convinced Oregon's farm regulators to order a quarantine restricting shipments of susceptible plants from nine counties.

The pathogen causes symptoms similar to drought stress and often kills affected plants, as no treatments are available, said Helmuth Rogg, director of the Oregon Department of Agriculture's plant program area.

A pear nursery in Hood River County first reported disease symptoms earlier this year, which researchers from Washington State University found were caused by *Xylella fastidiosa*, he said.

The Oregon Department of Agriculture found that pear trees from the National Clonal Germplasm Depository in Corvallis, Ore., were infected with the bacteria and that pear scion wood from that facility had been sent to 22 sites in the state, he said. ODA is now trying to trace the disease's source and where else infected plant material may have been shipped.

It's also issued an emergency quarantine for the nine counties where the pear tree scions were shipped: Benton, Hood River, Jackson, Lane, Linn, Marion, Multnomah, Washington and Yamhill. Violating the quarantine is punishable by fines of up to \$10,000.

While the bacteria has so far been associated with pear trees, the quarantine prohibits shipments of any host plant material, including oak, maple, blackberry, caneberry, blueberry and stone fruit, said Rogg. That restriction remains in place until either the counties are found free of the disease or the bacteria's presence is determined not to exist at a particular nursery production site, he said. If ODA nursery inspectors do detect the bacteria, affected plants must be destroyed and the surrounding 10 meters around them will be surveyed for further evidence of the pathogen.

Bacteria quarantine cont.

Insects that suck sap from plants, such as the glassy-winged sharpshooter in California, are known vectors for the bacteria's spread, Rogg said. Disease caused by *Xylella fastidiosa* has devastated olive orchards in Italy and threatens California wine producers, he said. Oregon's climate has traditionally been considered too cold to harbor the bacteria, which is likely why it hasn't been found in the state until now, he said. With the prospect of warming temperatures, however, the concern is that *Xylella fastidiosa* will be able to survive here.

The recent discovery will postpone shipments of plant material to Europe until ODA and the USDA's Animal and Plant Health Inspection Service are able to demonstrate the existence of pest-free areas or production sites, Rogg said.

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2 Reasons Eating Pears Should Be A Part Of Your Daily Routine

People who eat pears are less likely to be obese, have lower body weight, eat better, and consume less empty calories, a new study shows.

The old saying goes, "An apple a day keeps the doctor away," but a different fruit may provide the same, if not more, benefits: the pear. Research has shown eating just one can fills us with high levels of vitamin C and fiber at just under 100 calories. Eating a pear or drinking its juice may also help stave off a hangover and reduce risk of stroke. Now, a study from Louisiana State University has found people who eat pears are less likely to be obese.

The study, published in *Nutrition and Food Science*, revealed people who ate pears had a lower body weight and were 35 percent less likely to be obese than their pear-abstaining counterparts.

Source: O'Neil, C, et al. Fresh Pear Consumption is Associated with Better Nutrient Intake, Diet Quality, and Weight Parameters in Adults: National Health and Nutrition Examination Survey 2001-2010. *Nutrition and Food Science*. 2015.

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Pear pruning video online that is exceptional on the WSU website. Pears are a challenge & the video is long enough to give someone a good idea on pruning for fruit production.

<http://www.goodfruit.com/dynamic-pruning-keeps-trees-productive/>

Pruning Vocabulary

By [iguanawebo](http://iguanawebo.com), November 2013

Each subject has it's own vocabulary and pruning is no different from the others. The following is a list of terms used in pruning. You may wish to print these out or bookmark it for future reference.

Apical bud

Terminal bud at the tips of branches, produces auxin.

Apical Dominance

Result of terminal bud producing auxin from the apical bud. Plants that do not form many branched (apples, cherries) produce larger amounts of auxin than those than form many branches (dogwood, oak).

Arm

In grapes, arms are the parts of the vine which are two or more years old, excluding the trunk. In grapes, canes are one-year-old shoots. Shoots grow from these and bear fruit. The following year they are called canes. Head is the area on the trunk from which arms and canes are produced. Spur is a cane, which has been cut back to one or two buds.

Axillary bud (Lateral bud)

A bud in the angle (axil) between the leaf petiole and the stem. Most shoots, branches and spurs. May be a vegetative, fruit or a mixed bud in apple.

Auxin

Plant hormone produced in the terminal bud. Transported in the phloem, located in the bark, from tip to root. Inhibits branching from lateral buds.

Blind Wood

Part of a limb without spur or shoot development, more severe at stem attachment end. Head prune limbs and position more horizontally, stimulates axillary buds.

Bourse

The thickening of the floral bud in apple and pear. Produces swelling at the point of attachment of the fruit.

Branch collar

Swelling at origin of branch, location of healing hormones. Cut at branch collar.

Bud Union

Point where scion and rootstock meet. With size controlling rootstock, a conspicuous swelling may occur at the union.

Cane

In grapes, canes are one-year-old shoots. Shoots grow from these and bear fruit. The following year they are called canes.

Central Leader

A single vertical extension of the trunk from which all scaffold and fruiting branches originate; a single vertical axis.

Crotch Angle

The angle of the limb from the main branch. Strong and more fruit if 60 °, weak and less fruit if 75°. See diagrams on extension.umn.edu.

Flower bud

A bud that produces only flowers.

Girdling

Removal of a section of bark either completely from a branch or partially from a branch. Used to slow branch growth.

Head

In grapes, head is the area on the trunk from which arms and canes are produced.

Heading cut

Removes terminal bud and its auxin production, resulting in 3 to 4 branches from the lower lateral buds.

Leader

A shoot, which has been selected to extend the trunk. May be a single shoot for a central leader tree or several shoots for an open center or multiple leader tree.

Mixed bud

Produces flowers and stem and leaves. Stone fruit trees (peach, nectarine, apricot, plum, and cherry) produce mixed buds.

Notching

Removing a piece of bark. Used to produce branches where you want them. Notching above a lateral bud in early spring prevents auxin from reaching the lateral bud, resulting in a branch.

One-year-old-wood

Used in grafting, the scion, located above the terminal bud scale scars. Some plants only produce fruit on one-year-old-wood such as peaches, grapes and persimmon.

Open Center

A tree form with several, usually three to five equally strong main branches originate from the trunk and are trained to grow upward and outward leaving an opening in the center. Also referred to a vase or open vase tree form.

Cont. Page 5



Pruning Vocabulary cont. from P. 4

Pruning

Partial or complete removal of vegetative and or fruiting wood from a plant to regulate size, to direct growth, to remove unnecessary wood and to control the balance of fruiting and vegetative growth. See heading, pinching, renewal, shortening, thinning and two-thirds rule.

Renewal Pruning

Pruning a branch two years of age or older at its point of origin on the leader. Used to increase fruiting on younger wood and to improve light distribution into canopy. An alternative is shortening pruning (see 2/3's rule)

Rootstock

A root system for a fruit tree on which the scion variety is budded or grafted. Rootstock may be used to control tree size, induce fruiting, provided adaptation to specific climate or soil conditions.

Runtting Out

Poor tree growth due to early fruiting, over fruiting or weak vigor variety grafting to most size controlling rootstock.

Scion

A detached shoot or bud of a selected variety used for budding or grafting onto a rootstock

Shortening Pruning

Removal of part of a branch or limb by pruning into two-year-old or older wood, usually to a weak side shoot or spur. Used to shorten branches to maintain tree form and stimulate growth of remaining wood.

Spreading

Tree training for changing the angle of a branch away from vertical toward or even be low the horizontal. May use sharp-pointed wood or metal braches (spreaders). Can also tie down limbs with strings or rubber bands. For young branches that are less than five inches long, clothespins or toothpicks may be used as spreaders.

Spur

In apples, spurs develop form axillary buds on two-year-old shoots. Spurs often flower the following year. Axillary buds on spurs can give rise to shoots or new spurs. In grapes, spur is a cane, which has been cut back to one or two buds.

Spur-bound

Weak growth of branch or tree with many spurs with little or no annual shoots growth. (See Runtting Out)

Terminal bud

Located at the tip of a shoot, all plants grow in length from terminal buds.

Terminal bud scale scars

Scars resulting from the terminal bud scales that fall off that completely circle the stem. Signals one year growth.

Thinning cut

Removal of branches back to point of origin. Cut at branch collar. Alternative is heading cut.

Tip (terminal) Bearing

A type of fruiting habit in which fruiting occurs more commonly at shoot tips than on spurs. Tend to branch higher in the tree and produce long bourse shoots.

Two-thirds Rule

Used to determine which limb to prune. When the limb is larger than two-thirds of the diameter of the main leader, the limb should be removed.

Vegetative bud

Produces stem and leaves.

Whip

A One-year-old tree without branches.

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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

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Growth Stages in Fruit Trees — From Dormant to Fruit Set

P. J. Chapman and Gertrude A. Catlin

NY Food & Life Sciences Bulletin 58, Feb. 1976

Deciduous fruit trees pass through a series of fairly definite growth steps or stages in the spring. Fruit growers and those who serve the fruit industry in a research, regulatory, or advisory capacity or as suppliers of pesticides, fertilizers, etc., will often have occasion to refer to these stages. They perhaps find their greatest use, however, in the timing of chemical treatments for the control of plant diseases and of insect and mite pests. What then are these stages and by what names are they known? Unfortunately, no common agreement has been reached on either of these points. We have attempted to identify, name, and define what we believe are the key growth stages for apple, pear, peach, plum and prune, tart cherry, and sweet cherry. The growth period covered extends from the dormant stage of the buds up to the initial setting of the fruit.

The uses to which the proposed growth stage terminology plan may be applied relate to the application in the timing of pesticidal spray treatments under New York conditions.

Pesticidal sprays applied at some time during the dormant period and up to the initial setting of the fruit are critically important. Generally, these treatments are applied when the trees reach specific developmental stages during this period. An additional timing consideration is the actual or anticipated occurrence of infection periods (wetting periods of sufficient duration) for various fungus diseases. This factor may determine when a treatment may be most advantageously applied during the range of a given key growth stage. Additionally, in cool wet springs, it may be necessary to apply one or more "extra" or "in-between-key growth stage" fungicide treatments. This action is most commonly taken in coping with apple scab and brown rot. The number, timing, and composition of the pesticidal treatments applied between the dormant and the fruit set period varies widely between fruit growing districts. These differences are dictated by the pest complex present and by the amount of precipitation falling during the growing season. That latter factor will rather directly determine the prevalence and severity of fungus diseases in a given district and thereby the extent to which fungicides are needed in the spraying program.

BUDS, FRUIT SET, AND SHUCKS

Buds: As to overwintering buds, we are using the time honored name of fruit buds for them. This name is used for these buds up until the time when the flower bud(s) become visible. The terminal and lateral buds which produce only leaves are called leaf buds. These usually can be distinguished by their location and narrower width. In the case of apple and pear, typical fruit buds will produce clusters of from five to eight blossom buds arising out of a whorl of leaves. In the stone fruits, the leaves and blossoms are produced in separate buds. The number of blossom buds arising out of a single fruit bud in stone fruits will range from one (peach) to four or five.

Fruit Set: This stage is reached in apple 5 to 10 days after the end of bloom or when one can readily see which blossoms have at least temporarily set fruit. Actually this stage represents only the initial setting of the fruit. For some of these initially set fruit may drop a week or two later, and some will fall later still in the so-called June drop.

Shuck: The shuck is the dried floral remnant which in the stone fruits partially covers the newly-set fruit. As the fruit grows, the shuck splits and soon is sloughed off.

KEY GROWTH STAGE NAMES

Thirteen different growth stage names are used for the six fruits. The same name is employed for all of the fruits at five comparable stages. Since one definition will serve all uses of a name, each will be defined before listing the growth stages for the individual fruits. These follow:
Dormant: Fruit buds relatively inactive. This is the overwintering stage, (applies to all fruits).

Silver Tip: Applies only to apple. Fruit bud scales separated at tip, showing light gray tissue.

Swollen Bud: Equivalent to silvertip stage in apple. Fruit buds swollen, scales separated to expose areas of lighter colored tissue. (Applies to all fruits except apple).

Green Tip: Applies only to apple. Fruit buds broken at tip, showing about 1/16 inch (1-2 mm) green.

Bud Burst: Equivalent to green tip stage in apple. Fruit buds broken at tip, showing tips of blossom buds. (Applies to pear, sweet and tart cherry, plum and prune).

Half-inch Green: (Centimeter green): Applies only to apple and peach. In apple, when about 1 cm of leaf tissue is projecting from the fruit buds. In peach, when the leaf bud occurring between a pair of fruit buds has produced about 1 cm of new growth.

Tight Cluster: Applies only to apple. Blossom buds mostly exposed, tightly grouped, stems short.

Green Cluster: Applies only to pear, plum and prune. Blossom buds green, mostly separated in the cluster, stems lengthened.

Pink: Applies only to apple and peach. For apple, all blossom buds in cluster pink, stems fully extended. For peach, when the blossom bud shows a pink tip.

White Bud: Applies to pear, sweet and tart cherry, plum and prune. Blossom buds white, separated in the cluster and stems lengthened.

Bloom: Blossom buds open (applies to all fruits).

Petal Fall: After about 75 per cent of the petals have fallen (applies to all fruits).

Fruit Set: A stage ranging from about 4 (cherry) to 10 (peach) days after bloom when the blossoms that have or have not set fruit, initially, are clearly evident (applies to all fruits).

KEY GROWTH STAGES AND THEIR RELATIONSHIP TO PEST CONTROL

Cont. P. 7



Growth Stages cont. from p6

The growth stages identified here do not show when spray treatments are to be applied but when any combination of needed treatments can be applied.

APPLE Growth Stages: (1) dormant, (2) silver tip, (3) green tip, (4) half-inch green, (5) tight cluster, (6) pink, (7) bloom, (8) petal fall, (9) fruit set. Prevention of primary apple scab infections may be a dominant concern. In a "normal" year fungicides may be applied at stages 3,4,5,6,8, and 9 to attain this objective. The most effective time to use an oil spray to control the European red mite is at the tight cluster stage. This is also the time to start control of powdery mildew. A number of lesser insect pests may be controlled with sprays applied at stages 4,5,6,8, and 9.

PEAR Growth Stages: (1) dormant, (2) swollen bud, (3) bud burst, (4) green cluster, (5) white bud, (6) bloom, (7) petal fall, and (8) fruit set. Pesticidal treatments are used primarily for the control of pear psylla and fire blight. One or two oil sprays applied in the swollen bud stage provides good initial control of the psylla and blister mite.

TART CHERRY Growth Stages: (1) dormant, (2) swollen bud, (3) bud burst, (4) white bud, (5) bloom, (6) petal fall, and (7) fruit set. New York tart cherry growers are concerned with the control of the cherry fruit flies, plum curculio, brown rot, leaf spot, and powdery mildew. While sprays needed to control these problems are applied as post fruit set treatments, growers commonly apply sprays at stages 4,6 and 7.

PLUM AND PRUNE Growth Stages: (1) dormant, (2) swollen bud, (3) bud burst, (4) green cluster, (5) white bud, (6) bloom, (7) petal fall, and (8) fruit set. Problems controllable by pesticidal sprays, in whole or in part, include: the European red mite with an oil spray applied at the bud burst stage; brown rot, at stages 5,7, and 8; and the plum curculio at fruit set and in one or two later stages.

PEACH Growth Stages: (1) dormant, (2) swollen bud, (3) halfinch green, (4) pink, (5) bloom, (6) petal fall, and (7) fruit set. To control peach leaf curl a spray must be applied in the dormant period, either in the fall or before the swollen bud stage in the spring. Brown rot is a problem in peaches requiring the use of a fungicide in the pink and petal fall stages. To control the plum curculio, a spray is advised at the fruit set stage when the shucks are falling and, where the pest is of major consequence, two later sprays are applied, about 7-10 days apart.

SWEET CHERRY Growth Stages: (1) dormant, (2) swollen bud, (3) bud burst, (4) white bud, (5) bloom, (6) petal fall, and (7) fruit set. While sweet cherries are subject to the same disease and insect pest problems as tart cherries, brown rot is of special concern to the sweet cherry grower. This disease may be contained by use of a fungicide applied at stages 4 or 5,6, and 7 and by several post fruit set sprays. Such spraying is usually more than adequate to control leaf spot while by adding an insecticide to the fruit set spray and to one or more post fruit set treatments the plum curculio and fruit flies can be controlled.

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For information on controlling orchard insect pests and diseases, WSU has an excellent website "wsu hortsense"

<http://hortsense.cahnrs.wsu.edu/Home/HortsenseHome.aspx>

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WWOOF

World Wide Opportunities on Organic Farms Linking volunteers with organic farms and growers

Be a Host www.wwoof.net/

WWOOF-USA publishes a Host Farm Directory that lists 2,004 organic (USDA certification not required) farms and gardens across the country. Any organic farm, community or garden project in the United States that would like to host visitors can participate in the program.

Generally, during their term as a WWOOFer they spend half a day on host farms and learn about sustainable agriculture, receive educational opportunities, and also receive room and board from their hosts.

This is an educational and cultural exchange program and hosts do not offer stipends or other monetary compensation to WWOOFers.

What a great opportunity for some of our WCFS senior members that need assistance with maintenance on landscape, orchard, and gardens. Provide a small living space, above a garage or barn and take the volunteers grocery shopping in exchange for 4-5 hours of daily labor. It's a WIN WIN.

Marilyn Couture, Editor.

Forgotten fruit

Washington State Magazine, Winter 2015

Dave Benschoter's obsession began innocently— as a favor to neighbor, Elinor, resettled near Chattaroy, she asked Benschoter '78 to harvest some apples for her from the old orchard above her house. "Every apple was too high for me to pick," he says of his initial effort. "One of the trees was 40 to 50 feet high. The trunk was split, and I couldn't get my arms around either trunk." Determined to deliver Elinor's apples at some point, he started pruning to encourage new growth lower down. Meanwhile, the old orchard had infected Benschoter with that most persistent of apple bugs — the need to know the names of apple varieties. And who planted them.

Benschoter started modestly, with a Google search. What first popped up was Arcadia Orchard, the "largest orchard in the world," located in nearby Deer Park. Arcadia founders bought thousands of acres of land in the early 1900s and marketed orchard plots nationwide. Promotional materials claimed that by 1916, 7,000 acres were planted to orchard. Arcadia was only part of the area's orchards. In his 1905 Washington Agricultural Experiment Station Bulletin, "The Wormy Apple," A.L. Melander introduces his strategy against the codling moth with his observation on the regional industry: "It is asserted that 1,500 carloads of apples, valued at \$600,000, were carried last year from the Inland Empire." Historian John Fahey writes that by 1914, Whitman County had nearly 240,000 apple trees. Spokane and Stevens counties had nearly a million. Whitman County had three commercial nurseries. Benschoter was rediscovering what has been repeatedly forgotten — that before it finally coalesced around Wenatchee and Yakima, the apple industry further east was enormous and diverse.

Both orchards and nurseries were charmed by the apple's diversity. The Hanford Nursery in Oakesdale listed 64 varieties on its advertising flyer. The Inland Empire was a true garden of apple diversity and bounty. But soon, it all started to disappear. Ultimately, the Inland Empire could not compete with the irrigated orchards to the west. Although the large orchards are long gone, remnants, and scores of homestead orchards, are scattered throughout the area. Early in his investigation, Benschoter made some key discoveries. One was that every year the Colfax Gazette would publish a list of the prizewinning apples at the county fair. From 1900 to 1910, over 110 varieties were entered. Though many of the names are familiar, others had disappeared, and Benschoter was determined to find them. He combed Lee Calhoun's descriptions Old Southern Apples and noted a number of "extinct" apples that appeared in the Gazette.

He narrowed his investigation: Arkansas Beauty, Babbitt, Cornel's Fancy, Dickinson, Isham Sweet, Lankford, Nero, Pyles Red Winter, Scarlett Cranberry, Walbridge, and Whitman. On an August morning, Benschoter plodded down a long draw on Steptoe Butte through dry grass and wild roses toward a dense grove that someone told him was an orchard. Fruit is sparse this year, following last year's bumper crop, frosts, and intense heat early in the summer. Even so, fruit speckles many of the trees, beckoning explorers in search of lost tastes. Indeed, when he reached the grove, it is filled with apple trees, maybe 200 of several, as yet unidentified, varieties. But why seek out these forgotten apples? Some of it is simply wonder at the diversity of apples. Apple detective Dan Bussey estimates 17,000 named varieties in the United States since Europeans first arrived. Rediscovered apples could also produce benefits such as genes for disease resistance or flavor. Indeed, Amit Dhingra's WSU genome lab is intrigued by Benschoter's efforts and is nurturing tissue culture of one of his "extinct" discoveries, the Nero. One might hope to restore diversity to a market defined first by the Red Delicious and now by the Honeycrisp-type apple, all mouthfeel and initial burst of sweet-tart, delightful indeed, but with none of many older apples' subtlety and sophisticated complexity. But none of this seems to be Benschoter's primary motivation, which has more to do with his professional drive to identify all the elements of an investigation, to find what was lost. It is the satisfaction of matching unidentified apples to the USDA's stunning collection of apple watercolors, of interpreting plat maps, connecting family histories, and recovering human drama — of Robert and "Mecie" Burns, for example, who planted exuberantly on Steptoe, but misjudged their apples' marketability, thus losing their farm in 1899. "I got to . . . walk in the orchard," says Benschoter, "and see and taste the fruit of the trees Robert Burns planted."

Washington State Magazine, Winter 2015

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The Winter 2016 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

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The Hunt for the Tinmouth Apple

The ancient apple has the power to transform New England into the Napa Valley of hard cider...if only we can find it.

By Christopher Hughes | Boston Magazine | October 2015

The best apple you've never had is out there. Somewhere.

It's not the tough and tangy Granny Smith, beloved by the Beatles and surrealist painter René Magritte. It's not the Honeycrisp, the de rigueur dessert apple of the 21st century. And it's definitely not that rubbery Red Delicious, loitering year round in your supermarket produce aisle.

Instead, this transcendent orb is unassuming, mottled, and misshapen, its flesh dense and mouth-puckering—what orchardists affectionately refer to as a “spitter.” But when pressed and fermented, it could blossom into liquid gold. With time and expertise, its nectar could become as layered and as nuanced as the great wines of France's Loire Valley. Maybe even Champagne.

At least that's what Shacksbury cofounder and cider maker Colin Davis is telling me as we careen around blind corners and gun down half-finished roads in Cornwall, Vermont, a rural hamlet 40 miles south of Burlington. For years, Davis has been consumed by the hunt for a possibly apocryphal apple known as the Tinmouth. In his 1905 book *The Apples of New York*—still considered the bible for self-proclaimed “apple geeks” like Davis—legendary horticulturist Spencer Ambrose Beach described the Tinmouth as “sprightly” and “peculiar” tasting. But today, that vague characterization is all that remains of the forgotten fruit; about a century ago it mysteriously vanished from New England, and therefore the world.

Finding the Tinmouth, and other lost species of cider apples, is a large part of Shacksbury's business. As Davis steers us through fields of sugar maples and other deciduous trees, it's hard to make out anything distinguishable in the gnarled overgrowth, let alone a grubby, golf-ball-size apple. But Davis keeps leaning across to point out promising wildlings, which, to my untrained eyes, look like everyday brush. We've been here once before: About a month ago, Davis brought me along with a small group of friends to a hidden, overgrown grove of wild apples—located deep in the woods on private land—that looked suspiciously like Tinmouths. In fact, Davis is quite certain of it. We have no idea if we'll be able to find it again—but this time, Davis has brought reinforcements. So if we can find the old orchard, Davis is sure he'll be able to definitively identify whether these are, indeed, the apples he's been searching for.

On a typical apple-hunting adventure—one with less urgency than this—Davis will pull over, yank an apple from its knotty branches, and chomp down. Taste-testing the fruit is the best way to see if it's of the bittersweet variety, which Davis says has an “extra dimension” not found in most commercial ciders. Hard cider is the fastest-growing category of alcoholic beverages in the United States; it's projected to become a billion-dollar industry within the next several years. Until now, most of that growth has been driven by

mass-appeal mega-brands such as Woodchuck and Boston Beer Company's Angry Orchard, which tend to favor saccharine ciders made from common dessert apples like the McIntosh.

Despite the lure of easy profit, Davis and his business partner, David Dolginow, have never tried to capitalize on the lucrative sweet-cider trend. Instead, they've embarked on a far more ambitious quest for perfection. Their goal with Shacksbury, and in particular with the company's offshoot, the Lost Apple Project, is essentially to bring America's greatest apples back from the dead, scouring Vermont roadsides and pastures for forgotten strains that once lined the roads and property lines of Colonial New England.

Like sangiovese grapes in Tuscany, or pinot noir in Burgundy, apples such as the Tinmouth typically thrive in a single region. That's why Dolginow sees New England—and its once-vaunted concentration of the world's greatest apples—as, potentially, the cider-making equivalent of Napa Valley. By that analogy, Shacksbury is performing the same kind of pioneering work that was done by Joe Heitz, Robert Mondavi, and other post-Prohibition winemakers in northern California: resurrecting a hallowed region after a period of urbanization, reinvention, and neglect. If they're right, they won't just be players in the existing cider market—they'll be creating an entirely new market from scratch.

While the Lost Apple Project has yet to turn a profit, it has become Davis and Dolginow's obsession, and the heartbeat of the entire Shacksbury brand. “Down the road, when we have this bank of apples that no one else in the world has,” Davis says, “it'll be a really valuable asset for us.” Which is why the pair has spent tens of thousands of dollars harvesting “lost” apples from feral fields and people's backyards.

And it's also why a caravan of cars is racing furiously toward the town of Tinmouth, Vermont, to see whether its eponymous fruit—perhaps the rarest cider apple of them all—is still out there.

It's difficult to fathom how important the apple was to early America. Today, industrial-scale farming has squelched biodiversity, so that the broader market is dominated by just six varieties: Red Delicious, Golden Delicious, Gala, Fuji, Granny Smith, and McIntosh. But in the 18th and 19th centuries, American nurseries catalogued more than 16,000 different named apples, and as many as 7,500 American varieties. Apple trees were everywhere—particularly in New England, where they were used to mark property lines, like biological rock fences. Sugar was still a luxury good then, and apples sated the hungry colonists' sweet teeth. But far more important, most apples were grown to make America's national beverage: hard cider.

Up until Prohibition, Michael Pollan wrote in *The Botany of Desire*, “In rural areas cider took the place not only of wine and beer but of coffee and tea, juice, and even water.” It's easy to see why: Until the 1900s, most water was contaminated with bacteria. Beyond issues of sanitation, cider was America's homegrown answer to wine—our native grapes weren't sweet enough to ferment. And just like European

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Tinmouth from pg. 9

wines, American ciders could be incredibly complex, even nuanced—hence why Thomas Jefferson grew cider apples at Monticello, where Hewes Crabs are kept to this day.

Cider, not snacking, was the real reason John Chapman—better known as Johnny Appleseed—was flinging seeds and setting up nurseries through the Ohio Valley and the Midwest in the early 1800s. Growing apples is extremely easy, but cultivating a tree that bears palatable fruit is a rarity. Most of the chance seedlings that germinated in Chapman's wake weren't fit for his tin-pot hat—but they were plenty suited for a decent quaff, or even a nip of applejack.

In fact, Chapman couldn't possibly have known what he was growing. Apples are extremely heterozygous, meaning each seed contains the genetic makeup for a completely new and different type of apple tree. For instance, if you were to plant a seed from a McIntosh apple, the one thing you could be sure of is that the sapling it produced *wouldn't* be a McIntosh tree. Instead—if you were lucky—you'd get something like the Macoun, a cross between a Mac and Jersey Black, which was developed in the New York State Agricultural Experiment Station, in Geneva, New York.

That's why apple farmers focus on the stem, not the seed. When Shacksbury finds a choice wildling—a wild apple tree, out in the brush—that they want to duplicate, they have to cut a scion—a branch with buds—and graft it onto the rootstock of an existing apple tree. This is, essentially, the art of cloning. The technique hasn't changed significantly in hundreds of years, and it requires a skill that, even today, wows its practitioners. "Grafting, for me, despite having learned the science of it and done it many times, still has this mystical quality to it that feels similar to certain aspects of religion," Dolginow says. "The fact that you can take one stick, wrap it in grafting putty to this other stick, and they grow together...it's a tiny miracle."

Early colonists had the foresight to bring over scions of their favorite European trees, but many of the grafts failed in the harsh New England climate. The millions of seeds they planted, on the other hand, flourished in their new home. Some 7,500 new varieties took root—several times what Europe had managed to produce in 3,000 years of cultivation. In the colonies, apple farmers identified the best of the new seedling trees, then grafted and propagated them in nurseries. The first of these distinguished new American cultivars, the Roxbury Russet, was discovered just outside of Boston in 1645.

Thanks to a perfect storm of seed and soil, the golden age of apples had arrived. By the mid-19th century, Americans were achieving fame and fortune just by finding the next Red Delicious or Grimes Golden. It was an era some called, appropriately enough, the Great Apple Rush. Unfortunately for the apple, the rush didn't last. Soon, beer and wine surged in popularity, Prohibitionist Carrie Nation's hatchet came calling, and grocery chains began demanding monocropped uniformity. By the time Prohibition ended in 1933, the apple had been reduced to a few baking varieties—the sweetest, shiniest, lipstick red among the thousands.

Elevated by industrial demand, these dessert apples choked out some of the most exquisite cider apples ever recorded. Unique specimens that could thrive only in New England were driven to the brink of extinction. In places like rural Vermont, a few hardy stragglers were swallowed up again by the forests, forgotten but for their names. Gone were the multitudinous arrays of what Ralph Waldo Emerson once called, with no small amount of pride, "the American fruit."

When Davis and Dolginow launched Shacksbury in 2013, they fully intended to follow in the footsteps of other cider makers using European apples. But that changed after they sampled a homemade brew created by their friend, a celebrated cheese maker named Michael Lee. Davis still recalls his first whiff inside that bottle as an epiphany: A seductive commingling of earth, mango, and hazelnuts, the cider had been made from so-called lost apples foraged near a Cornwall, Vermont, enclave called Gill's Rock. "We were trying cider from all over the world at this point," Davis says, "and [Lee's] cider was hands-down the best I'd ever had in my life. Better than anything from Normandy or the Basque region. He told me he'd made it out of these wild apples near his house. I thought, Man, now how do you make a company out of *that*?"

Since that bombshell moment, Davis, Dolginow, and Lee have tasted hundreds, if not thousands, of Vermont apples. So far, they've rediscovered five that were once believed lost: Animal Farm, Saw Mill, Cutting Hill, Galvin Sweet, and Gill's Rock. Fifty scions of each have been grafted onto rootstock at Cornwall's Sunrise Orchards, where Dolginow used to work, and the juice from the foraged fruit was incorporated into Shacksbury's "1840" cider (which they're now calling "Lost and Found"). In its first vintage it won a prestigious Good Food Award.

Given the limited yields of New England's lost apples, Shacksbury supplements its business by buying fruit from Sunrise Orchards. Today, more than half of its annual production is dedicated to two bottled ciders, "Farmhouse" and "Classic," both of which are dominated by baking apples such as Jonagolds and Spartans. They've also embarked on a series of collaborative projects using heirloom fruit from Herefordshire, England, and the Basque region of Spain.

The Tinmouth, of course, could help change that. But as I weave through Vermont with Davis and Lee, I wonder how they'd know for sure that they'd found it. The trees we see all produce waxy, green fruit, the only distinguishing feature being perhaps a smattering of white lenticels, some russetting, or a slight sunny-side blush. Which makes me wonder: Can anyone be certain that the apples used in Shacksbury's "Gill's Rock" are actually unique, and not some run-of-the-mill crab apples?

It turns out the proof is in the minutiae—science stripped to the power of deduction. Genetic testing would do us no good, since there isn't an existing database of ancient apple DNA against which to compare our samples. Instead, apple foragers rely on a combination of rough forensic evidence, historical data—some of it available only in ancient nursery catalogs, old newspaper articles, books like Beach's out-of-print tome—and even some educated word of mouth. It's more Sherlock Holmes and less James Watson. Cont. p 11



Tinmouth Cont. from p. 10

As it happens, word of mouth is why we're all racing around Tinmouth today, on 500 idyllic acres owned by Adam Guettel, an ardent conservationist and Tony Award-winning composer and lyricist. (His grandfather was Richard Rodgers, of Rodgers and Hammerstein fame.) The tip, Guettel told us, came from a "Washington Irving-type character" named Marshall Squier, a local farmer whose family has been in Tinmouth for generations. Squier believes that the town's once-famous apple resides somewhere in a wild orchard on Guettel's land.

Ryan Yoder, a wild-eyed farmer from neighboring Danby, has heard the rumors as well. Five years ago, he spotted some feral trees on the Tinmouth property, then spent more than a year tracking Guettel down in Manhattan, his permanent residence, in the hopes of harvesting the fruit for his growing cider-vinegar business, and of further exploring Guettel's stretch of land along the Taconic Range. He's been here before and hopefully can lead us back to the old orchard.

Davis has brought along Windfall Orchard's Brad Koehler, A sweet-cider maker and horticulturist, Koehler grows dozens of ancient heirloom varieties in Cornwall—including one called the Windfall Golden. Back in 2007, Koehler began to suspect that the Windfall Golden might be misidentified—and that it could actually be the Tinmouth. He's since become New England's de facto Tinmouth expert, as a result of the countless hours he's spent hunting for a wild specimen to compare next to his propagated Windfall Golden. As we head into the woods, he's finally on the cusp of finding one.

Guettel meets us outside a red barn, and is more than happy to regale us with stories about the property, but he is reluctant to follow us into the deep woods, which he acknowledges are teeming with inch-thick thorny vines and wild parsnip, a poisonous plant that causes phytophotodermatitis: scalding blisters that intensify when exposed to sunlight.

After about 30 minutes, we come across our first stand of unpruned apple trees, and our ragtag party begins picking samples up and down the rough rows of budding fruit. Tasting is a major step in identifying wild trees, so no branch goes unplucked. Yoder bites into a particularly vegetal sample that smacks of asparagus and immediately spits it out, chucking the half-eaten orb into the brush. Meanwhile, Davis bites down on an apple so tannic that he recoils visibly, bringing to mind Henry David Thoreau's description of an apple "sour enough to set a squirrel's teeth on edge and make a jaw scream."

Tree after tree reveals some variation of a McIntosh or Rhode Island Greening—good apples on any other day. But Koehler, our resident expert, is growing increasingly frustrated and pulls me aside. "This is why they say in our field that finding an apple like [the Tinmouth] is a 10,000-to-1 proposition," he confides. "It almost never happens." As we burrow further into Guettel's woods, none of us can escape the voracious mosquitos, which are undeterred by our incessant swiping and slapping. At one point, I look down and see the spindly bloodsuckers feasting on each knuckle of my right hand. Yoder, talking to no one in particular, maintains a

a rambling monologue about the workingman's plight, his disheveled beard now buckshot with apple fragments. From a tangled thicket he pulls an Esopus Spitzenberg and gnaws on its floral, lychee-like flesh. "This orchard is like a pack of Marlboro Reds," he proclaims. "Flavor country."

For half an hour, Davis and Lee repeatedly approach Koehler with yellow-green specimens, the monotonous color of most apples in early August, hoping they've found the Tinmouth. Each time Koehler dismisses them with the same crushing verdict: "At this point in the season, it would be *lime green*." Ahead in the distance, we hear Yoder hollering, "This way!" Yoder's voice as a beacon, we eventually find a trampled, meandering path beneath a pear branch propped 2 feet off the forest floor.

After squirming through the brambly tunnel, we emerge onto a clearing. Errant shafts of sunlight break through foliage high overhead, framing a tree larger than any of the others we've seen on Guettel's property. Its brawny trunk looks like three trees entwined as one, and its sinewy parasol of branches shrouds us in a wide, perforated dome. "This is the old orchard I was telling you guys about."

Koehler spots one of the few apples at eye level and gingerly extracts it, careful not to let it escape into the dead foliage crackling beneath his feet. "This is definitely the most promising thing we've seen all day," he says, turning it over in his palm. "See how it has a matte finish and just a little bit of russetting?" He pierces the apple with his front incisors and shuts his eyes in contemplation. Then he takes another bite, and another, until he's frantically gnawing it to its core. "The flavor seems right!" he cheers.

Yoder and Davis immediately drop to their knees and begin searching the underbrush for their own Tinmouth as Koehler barks at us to find more specimens—but all of them appear to be dangling about two stories over our heads. Overjoyed as a prospector in sight of gold, Yoder shimmies up the tree and steadies himself on a high branch. The limb groans under his weight, showering loose bark and debris. He crawls on his belly to a small parcel of apples and carefully shakes them free. As the fruit plummets and ricochets off the ground, we scramble for the fallen apples. This is the moment we've all been waiting for. But no sooner do I bite into mine than Koehler lets out a devastated sigh. He's found the faintest streak of pink curving down the shoulder of one of the tree's apples.

For a few pained seconds, we all stare at one another, slack-jawed and confused. "What?" Davis asks, his gangly frame now slouched even farther, as if the weight of Koehler's sudden grief were draped over his shoulders.

Koehler breaks the damning news: Regardless of the season, the Tinmouth would never have a hue other than green or yellow. The silence is palpable. I watch as Yoder, Koehler, and, finally, the Shacksbury three slowly walk single file out of this secret garden until we find ourselves at the base of the hill peering up at the red barn where our journey began.

"So how disappointed are you?" I ask.

Davis shields his eyes from the punishing sun and looks back at me with his toothy, infectious smile. "Oh, we'll keep looking," he says. "The search will never end." * * * *

Payback!

I was very late tilling the garden space in 2015 because I discovered a nest with four baby juncos in the grass at the edge of the garden. Unwilling to till in the baby juncos, I was stuck waiting until they left the nest. I looked up on <http://birdweb.org/birdweb/>, the Seattle Audubon Society website, how long it would take for the baby juncos to mature and found they leave the nest in 9-11 days. I must have discovered them right after they hatched because it took a full 11 days. During that time, we enjoyed watching the parents feed their young. They seemed to not mind having people around at all and just kept busy searching for tasty morsels for their babies. After the fledglings left the nest, I tilled and planted my garden. The juncos were never far away. We continued to watch as the parents still fed the youngsters until the little juncos finally learned to feed themselves. They are all still around searching for something to eat and enjoying the birdbath. However, here's the kicker, I never realized how helpful they could be and how important it was to not disturb the nest. Today (7/12/15) I discovered the payback—I observed a junco eating aphids in the cole crops! The bird kept hopping up into a young plant and finally landed on a leaf stem and continued to peck, reaching down under the leaves. I grabbed the camera and got one telephoto shot of the junco reaching down under a leaf. I just had to go investigate the plant after the junco flew away, and sure enough, it was loaded with aphids.

Jean Williams, PFC

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PFC Grafting Show—March 5

PFC will hold the 2016 Spring Grafting Show on Saturday, March 5, 2016, at the West Side Improvement Club, 4109 West E Street, Bremerton 98312. The hours are from 10 am to 4 pm. Admission is free, but donations are greatly appreciated. This is a new location for the spring show but is the same location that we used last October for the Fall Fruit Show.

Contact: Jean Williams for Information. <fhe@hurricane.net>

Collection, Labeling and Preserving Fruit Tree Scion

As you proceed with winter pruning, garden cleanup and propagation-related tasks, please keep in mind that we need our members to provide varieties of apple, pear, plum, quince, peach and, apricot. Please follow these guidelines for cutting, labeling and storing scion wood based on a method by Jean Williams, Peninsula Fruit Club, in The Urban Scion Post, Seattle Tree Fruit Society, published January 2014.

Cutting: The best time to collect scion is before the buds swell; stone fruit (plum, apricot, cherry, peach) in January and apple, pear and quince in February. Use terminal shoots from last summer's growth. Cut wood with well-developed, narrow, pointed vegetative buds. NOT round, plump flower buds. Disinfect shears between trees with 70% alcohol, 70% alcohol with 5% Povidone iodine, or Clorox or Lysol wipes.

*Select disease-free scion, exposed to good sun last year, ¼ to 3/8 inch in diameter, about 10" long (to fit in a gallon zip lock bag).

*For grafting, select from lower 2/3 of the scion wood if possible, as that section contains more carbohydrates to support scion growth after grafting.

*Water sprouts can be used.

Handling: *Seal the cut ends and any broken areas of cambium with Doc Farwell's grafting seal, wax or grafting sealant. Let the sealant dry/harden. Briefly dip the scion in 10% bleach solution, shake off excess bleach solution and let dry on a paper towel.

Labeling: It is important to label each piece since scion gets moved and identity lost.

*Label each piece of scion by wrapping with masking tape leaving a tag on which to print the variety name.

*Bundle like varieties together with a rubber band.

Storage: The goal is to keep the scion in an atmosphere near 100% humidity, cool to maintain dormancy, preserve viability and, prevent microbial growth.

*Place a handful of slightly damp ground peat moss, to prevent microbial growth, in a gallon zip bag.

*Place scions in the bag, seal, and place in a refrigerator between 33 and 35 degrees F.

*Don't store with ripening fruit. The ethylene gas encourages bud break and reduces chances of a successful graft.

*Check periodically to make sure scions stay moist. Add a few drops of water if needed.

Cautions: *Be sure of the variety.

*Don't take scion wood from below the graft-union, from roots or from low-vigor branches.

*Don't take scion wood from currently patented varieties.

OOS 1/5/16

This was worth printing again.

Marilyn Couture, Editor BeeLine

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Pollinizing Jonagold

By iguanawebco, November, 2013

Some areas of the world such as England, the Benelux countries, and Eastern United States have had considerable experience with these apple varieties having three sets of 17 chromosomes (51 total), triploids.

Unlike the more common diploid (two sets of chromosomes, 34 total), these triploids produced much bad pollen and many defective ovules; however, for nearly 300 years they have been important to the apple grower because of their quality and often large size.

My former horticulture teacher will probably turn over in his grave when I call these sterile, but for practical terminology we are not far from wrong, so let us do it; however, the old Thompkins County King variety does have some self-fertility despite being triploid.

Perhaps a little apple history is in order before getting to Jonagold. On my experimental orchard, there have been 13 triploid varieties at one time or another.

The oldest probably is Gravenstein (triploid) with a known history to about 1670 in South Denmark, but almost surely an Italian variety whose scions were given to the Duke of Gravenstein in the middle of the 17th century.

Then there is Ribston Pippin long the classic apple of England before its seedling (Cox Orange) was widely grown. Our new Gala (a diploid) variety has Golden Delicious, Kidd's Orange Red, Cox Orange and Ribston Pippin in its genetic background. No wonder it tastes so good.

Ribston Pippin (triploid) was planted in 1708 at Ribston Hall, Yorkshire and the original trunk did not die until 1835. It then sent up a new shoot and on the same root lived until 1928, 220 years!

Bramleys Seedling (triploid) is yet quite important commercially in Ireland and England as a cooking apple, and is one of my favorite pie and sauce apples, with its one percent acid and huge size. The original tree was planted probably in 1813 and was still alive in 1956 at Southwell, Notts and may still be living 171 years later. A famous triploid which has no peer as a cooking apple.

Belle de Boskoop (triploid), commercially important in Holland, Belgium, Denmark, etc, with many modern offspring it is an old English variety still grown in backyard orchards.

Early American triploid seedlings were Baldwin the most important commercial red apple in the Northeast for 75 years until a few days of minus 40 degrees F. killed them out in 1933-34. They were replaced by McIntosh.

Rhode Island Greening (triploid), still grown commercially in New York – Stayman (triploid), resulting from a seed of Winesap planted in 1875.

Some of the newer apple crosses are also triploids – notably Jonagold, Mutsu (Crispin), Spigold, and Suntan (European). Mutsu (Crispin) and Spigold often have apples too large unless sold in gift boxes, if one leaves the king blossom* on. I have seen Spigold picked from the king bloom only, that ran 35 to 40 per box but were still of good flavor. What a sight on a dwarfing tree.

Jonagold also sizes well and fruiting the king bloom is not that important unless one wants considerable apples in the 64 to 88 size. There are at least two ways to pollinize 'Jonagold' depending a great deal on the apple growing area.

Pollinizing Jonagold

First, no matter what geographical area you want to grow them in, you cannot use Golden Delicious as a pollen source. Golden delicious is cross-unfruitful with Jonagold.

Remember we usually need two other varieties with variable pollen to pollinize Jonagold. Don't use just one variety, because even though that variety may give a good fruit set to the Jonagold – what is pollinizing the pollinizer. If you want apples from your pollinizers, Jonagold won't do it. It's virtually sterile.

Depending somewhat on climate, Jonagold is usually about in the middle to the late part of the mid-bloom. Suggested varieties as pollinators are Akane and Spartan.

For the latter part of the bloom, Melrose and Paulared would cover it well. Akane and Melrose would be my choice, as Melrose is an outstanding keeper and an all purpose apple.

Another alternative is for those who like Yellow Newton. Since Yellow Newton is quite self-fertile and has a good overlap in bloom period, it would work fairly well. But triploid should normally have pollen from two sources.

However we do it, there is a way for any area – but doing our homework is important.

**The king blossom is the central, first opening blossom in the flower cluster of apples. It will produce the largest fruit. Many times all other blooms and/or small fruit, but the king, is removed during tile thinning process.*

Pome News, Spring 2003

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Three helpful references for rootstock propagation.

Referred by Jim House, OOS

<http://mcgrathnurseries.co.nz/resources/488-process-of-growing-a-tree>

<http://www.suttonelms.org.uk/apple72.html>
<https://en.m.wikipedia.org/wiki/Layering>

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utube video on citrus bark grafting

<https://www.youtube.com/watch?v=bEsgiOspZhA>

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WCFS NEW MEMBERS

OOS

Ryan Bauer
 Jamie Collier
 Clif Keely
 Patrick Matthews
 Neva & George Miller
 Kirsten Whitworth
 Carol von Borstel
 Susie Steele
 John Seago
 Tom Sutton
 Jerry & Loretta Bixby
 Robert Blush &
 Susan Savage
 Dick & Pat Gritman
 John Cornish &
 Rosemary Roberts
 Paul Howard &
 Sara Farinelli
 Martin Muschinske &
 Dee Suddith
 Margaret Yates
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PFC

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 Mary Chebunare
 Danielle & Eric Foss
 Jackie Furrey
 Laura Gardner
 Dale Jackins
 Peter Lilyjengren
 Emily & Gar MacRae
 Eileen McFarlen
 Charles & Deanne Niesen
 Kelly Quinn
 Michael Spiller
 Robin Waldroop

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Learn to Grow Your Own Groceries!

All classes take place on Wednesday evenings from 7:00pm – 9:30pm at WSU Snohomish County Extension's Cougar Auditorium, 600 128th St SE Everett, WA inside McCollum Park. In addition, for those attending the first two classes, there will be an opportunity to have your garden soil tested at a reduced cost, and the results interpreted.

Jan. 20.....What to Grow in Western WA

Feb. 3.....Small Fruits, Big Harvests

Feb. 17.....Small Space & Vertical Gardening

Mar. 2.....Early Start = Early Harvest

Mar. 16.....Good Bugs, Bad Bugs, & Pollinators

Apr. 6.....Seed Starting & Growing Transplants

Apr. 20.....Weeding and Watering

Apr. 27.....Growing the Heat Lovers in the Chilly NW

Cost is \$25 per person per class, any five or more are \$20 each, or take all ten for \$175. Register online at Growing-Groceries.BrownPaperTickets.com. snohomish.wsu.edu/growing-groceries. For more information about the program, contact Kate Halstead, (425) 357-6024, khalstead@wsu.edu.

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Sustainable Small-Acreage Farming & Ranching course starts Jan 19

First in the series, the 12-week course **Sustainable Small-Acreage Farming and Ranching** will be held on Tuesdays, 6:00pm to 9:00pm starting January 19, 2014 at WSU Snohomish County Extension's Cougar Auditorium, 600 128th St SE, Everett.

Weekly presentations include local growers, organizations, and university specialists with expertise in direct marketing, value-added processing, production planning, agronomy, livestock production, and more. In addition, two Saturday field trips will visit nearby farms to learn about different styles of successful small farm enterprises.

Class size is limited and pre-paid registration is required. Cost for the twelve-week course is \$275 per farm or family. Download the form from snohomish.wsu.edu/sustainable-small-farming-and-ranching and mail with your check.

Contact Kate Halstead, (425) 357-6024, khalstead@wsu.edu.

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Bainbridge Island Fruit Club (BIFC) Submitted by Darren Murphy

BIFC had a busy fall, with visits to member gardens, participation at the Johnson Farm Harvest Fair on Bainbridge Island, and guest speakers at our club meetings. On 9/19/15, club members met at Tami Meader and Nick Daluiso's homestead for a tour of their extensive orchard and vegetable/herb garden. We also did some cider pressing with sampling of apple and pear juice. On 9/27/15, the BIFC set up a fruit tasting booth at the Johnson Farm. Over 100 Harvest Fair attendees stopped by our booth, tasting a wide assortment of apples and pears as well as learning more about the group's plans to work with the Friends of the Farm in helping restore the Johnson Farm orchard. Finally, at our November club meeting, Tom Muller (resident fruit and cider hobbyist) gave a presentation on cider making as well as offered a number of wonderful samples. Tom has served on the board of Western Washington Fruit Growers Found. and worked with WSU at Mt. Vernon in testing various fruit varieties.

Apple/Pear Pressing at Tami/Nick's farm



BIFC Fruit Tasting/Information Booth at Johnson Farm Harvest Fair



Tom Muller providing presentation on cider making at the BIFC November club meeting

Some of Tom Muller cider samples



Chapter News

WCFS

Olympic Orchard Society

After a highly successful Fruit Show Oct. 31, OOS welcomed 18 new family members and took prepaid fruit tree orders for 35 trees which will be grafted in March. Pruning workshop is Feb. 5 at Peninsula Nurseries, adjourning to orchard of new member Tom Sutton for pruning demo. Grafting workshop March 19 at Lazy J. Farm. Contact M. Couture for info. couture222@msn.com

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Peninsula Fruit Club

Submitted by Mike Geiser

This fall we had a successful fruit show with over 200 different varieties of apples, and also pear, and a variety of other fruits. We had our show at a new location this year – the Bremerton West Side Improvement Club. The facilities provided us more room (more fruit) and provided more parking for those coming to see us. Club members helped in the setup, take down, manning of different stations (disease, plant identification, plant sales, presentations, helping customers taste test, bees), and food for the workers. We were happily busy for most of the time we were open.

Interesting presentations: Lowell Cordas came up and gave a great lecture on root stock, including what types work best for soil types and what to look for in a root stock. Diane Fish (a local 4H specialist in food storage) came and spoke to us about canning. She debunked some popular myths about canning and provided important guidance to ensure safe food preservation. In November, a club member – Barney Bernhard presented to us on Spanish Pruning of cherry trees. We learned how to keep your cherry trees at about 5 feet and how to protect the tree and fruit from hungry birds and other would-be eaters of your hard work.



WCFS OFFICERS AND BOARD MEMBERS

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Vice President	Vacant
Secretary	Sally Loree SAL@wavecable.com
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2017

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2018

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Vashon Island	Charon Scott-Goldman charon@centurytel.net



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

Government 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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