



the Urban Scion Post

a publication of the Seattle Tree Fruit Society,
chapter of the Western Cascade Fruit Society

President's Letter

I hope everyone is staying safe and healthy during these trying times. We are sorry that we had to cancel our Spring Propagation Fair in March, as well as the rescheduled date in April. But, it was the right thing to do. We are planning a meeting in May and hope that conditions allow us to proceed. If not, life will go on, and we will wait until all is safe before we again convene.



As everyone has learned by now, our club was able to cobble together a plan to allow members and others to purchase scionwood, rootstocks and grafting services. Special thanks to Trent Elwing, who spearheaded the effort. Thanks also to Lori Brakken, Laure Jansen, and Bill Davis who will be doing much of the grafting and distribution. Having such a plan helps us out financially, as we had already purchased the rootstock and grafting supplies. I hope you are taking advantage of this opportunity if you can. We are fortunate, as I mentioned last month, to have such dedicated members who have sourced very unique scionwood.

I'm looking forward to the time, hopefully in the near future, when our club can resume our normal activities. We will be planning orchard field days, garden tours, summer bud grafting, and fruit sampling for the future when it is safe to get together again. Meanwhile, if you are sheltering-in-place, spend some extra time in your orchard and garden. Take care of and support your family and friends.

We will see each other soon.

Yours truly,

Mike Ewanciw

Urban Scion Post

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On the cover

Budagowski 57-146 apple blossom.
Photo: Laure Jansen

The Pandemic of April 2020

by Marilyn Tilbury

What a difference a month makes! The first novel coronavirus in the U.S. was recorded in Everett on January 20. A 35 year old man who returned from visiting family in Wuhan, China had sickened, and cooperated with health professionals about his possibly having the new virus. Contact tracing identified no new cases but, alas, actual testing for presence of the disease in contacts was not done.

All seemed quiet until February 29 when the Life Care Center in Kirkland was identified as a grievous disease hotspot. Finally some testing of patients was done but testing of staff was delayed. Talk about (not) getting ahead of the curve.

By mid-March, though, consciousness of what had been just China's problem finally hit the fan. New acronyms have entered the lexicon, COVID-19 and WFH (working from home). We've been divided into two groups: essential and non-essential. Essentials are asked to continue employment even though protective gear may be limited or absent. Our heartfelt thanks to each and every one of these people.

Non-essentials are practicing social-distancing and sheltering-in-place to flatten-the-curve. That scary word 'triage' is occasionally heard, and hopefully mere mention will be sufficient motivation for us all to indeed maintain social distancing for as long as needed.

Those of us with back yards are able to get outside, and we should for at least half an hour each day to be exposed to natural light, rain or shine. Research has shown that natural light combined with exercise will boost our immune system. If you find yourself WFH, remember to take breaks and get outside. Admire the tulips, ornamental cherries and plums blooming now.

And there're lots of things to do in April. Have you noticed that your yard will absorb every bit of attention you give it? It's definitely not too late to get some rootstock and scionwood available through our club. Strawberry plants may still be planted (squish any spittle bugs in established plantings). This is the best time to scatter seed of annual flowers. Some great pollinator plants are borage, Chinese forget-me-nots, cosmos and annual phacelia. Single flowers generally provide better pollinating opportunities for insects than double flowers.

Are you also attempting home schooling? Kids can help you plant lettuce, peas



and radish seeds now. They can keep track of dates planted, emerged, soil temp, weather, etc. Kids can try sprouting peas in the kitchen and plant individual peas in the garden. Remember to shield peas from crows with chicken wire until they're several inches high. Mason bees are now out and apple blossoms will soon be open.

Pruning of stone fruit, especially those rampant growing Japanese plums, may be done during any dry period. Of course pulling weeds before the soil becomes dry is good exercise now.

Sheltering-in-place will be required for some weeks, giving us plenty of time to apply maggot barriers to thinned apple blossoms. These may be ordered from Linda through our club. Blossoms can be thinned anytime, even during bloom, but perhaps it's best to wait until the fruitlets are dime sized. Narrow-nosed pruners work great for this task.

Last year codling moth seemed to bother even fruit protected by maggot barriers coated with Surround, so doubling the barriers might be good strategy. Using one new and one used but washed maggot barrier is a possible strategy. Protect your best fruit first and plan to remove all unprotected fruit from your trees by June to eliminate breeding sites for both apple maggots and codling moth in your yard.

Don't want to be bothered installing all those maggot barriers? You could try the bee netting that City Fruit pioneered in Seattle. Nets must completely cover the canopy and also be secured below, around the trunk. This means that a tree more than around 8 feet high is difficult to net. Note that espaliered trees are an ideal configuration for nets. Fruit must still be thinned before net installation.

Be happy, be healthy. Hang in there.

PROPAGATING FRUIT PLANTS

from L. H. Bailey's "The Nursery Manual" and
the "Standard Cyclopedia of Horticulture"

There are whole ranges of plants that exist in cultivation and are abundantly propagated independently of seeds. Even though the plant produce good seeds, the leafy and stem structures may afford the quickest and easiest means of propagation. The tree-fruits are multiplied and at the same time preserved "true-to-name" by means of grafting. The cranberry is grown from slips. The black-berry grown from root-cuttings; the red raspberry from suckers. Strawberries are grown from runners. Rhubarb is multiplied by division. Currants and grapes are reproduced by hardwood cuttings, while gooseberries can also be rooted by layering.

DIVISION mostly operates with tubers, rootstocks, suckers and various kinds of offsets. An offset is a crown or rosette of leaves, usually borne next to the surface of the ground., and which in time may detach itself and form an independent plant.

The best example of this in fruit culture is the pineapple, which is propagated by various kinds of offset parts: the crown or tip-shoot of the fruit, which is not used for propagation; crown-slips, that arise at the base of the crown; slips at the base of the fruit; suckers from the base of the plant or near the ground; and separate shoots from underground parts, known as ratoons.

Propagation of rhubarb is commonly by division of the roots, and this is the only method by which a particular type can be increased. In the third or fourth year after planting, the hills should be divided. Remove the earth from one side of the hill and with a sharp spade, cut through the crown, leaving three or four buds in the hill undisturbed. This should be done in the fall or early in the spring.

RUNNERS. This is a shoot that trains on the ground, taking root at intervals; the strawberry produces true runners. Sometimes the runner is covered by the accumulating surface mold. A root may sometimes act as a runner. A stolon is a decumbent of lopping shoot which, without artificial aid, takes root and forms an independent plant. It usually starts more or less erect, and bends over to the



Dividing rhubarb roots. Photo credit: luv2garden

ground as it grows. The honeysuckles, some osiers (as *Cornus stolonifera*) and many other bushes with long slender branches, propagate by means of stolons. The black raspberry propagates by a special kind of stolon, rooting only at its tip.

LAYERING. Many plants habitually propagate by means of decumbent shoots and runners. These shoots become more or less covered with earth or leaves, and roots are formed, usually at the joints. In many cases, the old shoots die away and an entirely independent plant arises from each **fascicle** of roots.

All vines, and plants with runners or long and slender shoots that fall to the ground, may be multiplied readily by



New black raspberry crown. Photo credit: Laure Jansen

layerage. Among fruits, the black-cap raspberry and dew-berry are familiar examples. The raspberry canes of the current year bend over late in summer and the tips strike the earth. If the tip is secured by a slight covering of earth, or if it finds lodgement in a mellow soil, roots are formed, and in autumn a strong bud or “crown” or “eye” is developed for the next year’s growth. The parent cane is severed in fall or spring, some 4 or 6 inches above the ground, and an independent plant, known as a “root-tip”, is obtained.

In many species, layerage is performed to best advantage by heaping earth over the stool and around the shoots. This is known as *mound-* or *stool-layering*. The shoots send out roots near the base, and straight, stocky plants are obtained. The English gooseberries are propagated almost exclusively in this way. The gooseberry shoots are allowed to remain in layerage for two years, if the best plants are wanted, but in many species the operation is completed in a single season. Quinces and Paradise (dwarf) apple stocks

are extensively mound-layered.

CUTTINGS. The regular growth-shoots of plants may grow when severed and placed in earthy; as they are cut from the parents, so are such parts known as cuttings. Cuttings of growing parts demand a moist and uniform atmosphere, a porous soil, and sometimes bottom heat. The requirements vary greatly with the different kinds of plants. A common bell-jar makes one of the best and handiest propagating-frames, because it admits light on all sides, and it convenient to handle. For certain limited purposes, a fruit jar may be used as a bell-glass.

Soil somewhat warmer than the air is essential to the best success with cuttings. Bottom or root growth should precede top growth, and this is added by bottom heat. This heat may be two or three degrees, or three to four times that much, higher than the temperature of the atmosphere. In outdoor work, this heat is supplied by the natural warmth of the soil in spring and summer, and it is often intensified by burying hard-wooded cuttings bottom end up for a time before planting them. This inverting of cuttings is often practiced with grapes, particularly with the Delaware and others that roots with some difficulty. The 6- to 8-inch cuttings are tied in bundles and buried in a sandy place., with the tops down, the butts being covered 2 or 3 inches with sand. They may be put in this position in autumn and allowed to remain until the ground begins to freeze hard, or they may be buried in the spring and allowed to remain until May or June and then be regularly planted.

Cuttings of the hard dormant wood are made at any time from late summer to spring. It is advisable to make them in the autumn, to allow them to callus before the planting season. Grape cuttings are now commonly cut to 2 or 3 buds. Currant and gooseberry cuttings usually bear 6 to 8 buds. When planting, all hardwood cuttings are set perpendicularly, or nearly so, and only one or two buds allowed to stand above the surface.

GRAFTING is employed in the propagation of tree-fruits, in order to perpetuate a variety true to name, or to multiply the plant, or to produce a given change in scion or stalk, as when a variety is dwarfed by working it on a slower growing stock. Some of the real and supposed reciprocal influences may be mentioned: graftage may modify the stature of a plant (dwarfing and vice versa), adapt plants to adverse soils and climate conditions; correct a poor habit; hasten and sometimes augment fruit-bearing; modify the season of flowering or ripening; increase the size and modify the quality of flowers and

fruits; inhibit or transmit disease.



Dormant apple graft: whip & tongue t. Photo: Rick Banks

Grafting of one kind or another can be performed at almost any time of year, but the method must be varied to suit the season and other conditions. The one essential point is to make sure that the cambium layers, lying between the bark and the hardwood, meet as nearly as possible in scion and stock. This cambium is always present in live parts, forming woody substance from its inner surface and bark from its outer surface. In the season of greatest growth it usually occurs as a soft mucilaginous and more or less unorganized substance, and in this stage it most readily repairs and unites wounded surfaces; and for this reason the grafting and budding of old trees is usually performed in the spring. Later in the season, the cambium becomes firmer and more differentiated, and union of woody parts is more uncertain.



Grafting older trees. Photos: University of Massachusetts

It is necessary to cover the wounds to check evaporation from the tissues. In outdoor work, wax is commonly used for all kinds of grafting that wound the wood itself, but in budding, the loosened bark, bound down securely by a bandage, affords sufficient protection. It is commonly supposed that an ordinary cleft-graft cannot live if the bark of the stock immediately adjoining it is seriously wounded, but the bark really serves little purpose beyond protection

of the tissues beneath. A scion will grow when the bark is mostly removed from the stub, if adequate protection is given which will not interfere with the formation of new bark.

The scion must always bear at least one good bud. In most cases, only buds that are mature or nearly so are used.

These simple requirements may be met in an almost innumerable variety of ways. The scion or bud may be inserted in the root, crown, trunk, or any of the branches; it may be set simply under the bark, or inserted into the wood itself in almost any fashion; and the operation may



Grafting wounds must be sealed to prevent dehydration. Photo: technicro

be performed either on growing or dormant plants at any season. But in practice, there are comparatively few methods sufficiently simple and expeditious to admit of general use; the grafter must be able to choose the particular method best adapted to the case in hand.

GLOSSARY

Decumbent: lying along the ground or along a surface, with the extremity curving upward.

Fascicle: a bundle of structures, such as nerve or muscle fibers or conducting vessels in plants.

Stolon: a creeping horizontal plant stem or runner that takes root at points along its length to form new plants

Stool: throw up shoots from the root.

SPRING GRAFTING WITH SOCIAL DISTANCING

STFS members,

For many years now, STFS has held a spring grafting event where STFS members and nonmembers come together to purchase fruit tree rootstock and scionwood for later use or for onsite grafting to create custom fruit trees.

Due to current, prudent precautions for minimizing coronavirus spread, STFS won't have an in-person grafting event for 2020.

Instead, STFS has already purchased rootstock and gathered scionwood listed below for orders made by STFS and nonmembers via email or phone.

Orders will be filled in the order they are received. First come, first served. Overall quantities are limited to amounts listed for each rootstock. Orders will be processed and trees grafted before payment. Payment must be made by check or cash preferably by check made to "STFS" and sent in the near future to: STFS c/o Trent Elwing, 1035 Alaska Ave E, Port Orchard, WA 98366.

Due to the current pandemic, delivery of rootstock, scionwood and grafted trees will be based on decision made by individual purchaser and Trent. Possible delivery options include drop-off at a site specified by the purchaser or pick-up by purchaser from a designated location following social distancing practices.

All rootstock was purchased from Raintree Nursery (more rootstock details at www.raintreenursery.com) and received by a STFS member during the second week of March, 2020. This STFS member soaked the rootstock in a solution containing kelp, micronutrients and mycorrhizae before heeling rootstock into planting soil and nurturing with TLC over the past several weeks.

To minimize confusion, an order for a grafted tree should pair the rootstock with scionwood. For example, an Ashmead's Kernel scionwood grafted to Budagovsky 9 rootstock could be ordered as "Ashmead's Kernel/B9". For this example, a STFS member would pay \$1.00 for the Ashmead's Kernel scionwood plus \$2.75 for the B9 rootstock plus \$4.00 for the grafting service totaling \$7.75 for a dwarf Ashmead's Kernel apple tree.

Lastly, grafting of scionwood provided by STFS member or nonmember onto rootstock by STFS may be possible if the purchaser and Trent can figure out the logistics. Communicate with Trent.

All orders need to be placed with Trent Elwing, STFS Treasurer, (email treling@gmail.com phone/text 206.517.3118) no later than: Wednesday, April 15, 2020.

- Rootstock prices for STFS members are **listed on page 8**, with type of rootstock; available scionwood varieties are **listed on page 8**
- Rootstock prices for non STFS members are marked up 25% over prices listed below. If you want the STFS price, please join STFS (\$25 annual membership fee) at the time of order.
- Scionwood price for STFS members is \$1.00 per piece. Scionwood price for nonmembers is \$2.00 per piece. Raintree Nursery online includes descriptions of numerous scionwood on page 8.
- Grafting of one tree for STFS members is \$4.00.
- Grafting of one tree for non STFS members is \$5.00.

STFS Spring Grafting: Rootstock and Scionwood

Apple Scionwood

Alkmene
 Ananas Reinette
 Arkansas Black
 Ashmead's Kernel
 Belle de Boskoop
 Ben Davis
 Beni Shogun
 Bills Redflesh
 Blanc Mollet
 Blue Pearmain
 Bramley's Seedling
Calville Blanc d'Hiver Cameo
 Canadian
 Centennial Crab
 Chehalis
 Cherry Cox
Cox's Orange Pippin
 Crimson Topaz
 Dayton
 Dolgo crab
 Early Strawberry
 Erwin Baur
 Freedom
 Frequin Rouge
 Grand Alexander
 Gravenstein, Bloodred
 Gravenstein, Rosebrook
 Gravenstein, Starr
 Green Newton Pippin
 Grenadine
Hewe's Virginia Crab
 Honeycrisp
 Jonagold, common
 Jonagold, decoster
 Jonathan
 Karmijn de Sonnaville
 King Edward 7
 Knobbed Russet
 Melrose

Miss Jessamine
 Mother
 Nehru
 Newton Pippin
 Niedzwetskyana
 Nihonmachi
 Northern Spy
 Pendragon
 Pink Pearmain
 Pink Princess
 Pinkwood
 Pristine
 Queen Cox
 Redhook
 Rob Roy (Early McIntosh)
 Roxbury Russet
 Rubinette
 Scarlet Surprise
 Shay
 Silken
 Sommerfeld
 Stay man
 Strawberry
 Sweet Bough
 Tewksbury
 Tsugaru Homei
 Twenty Ounce
 Wagener
 Wealthy
 Westfield Seek-no-Further
 White Winter Pearmain
 Wickson
 Williams' Pride
 Winesap
 Winter Banana
 Wolf River
 Yates
 Yellow Bellflower
 Zlanta Resista

Euro Plum Scionwood

Coes Golden Drop
 Gras de Melior
 Imperial Epineuse
 Obilnaya
 Prune d'Ente
 Seneca

Valor
 Victory

Plum Hybrid Scionwood

Methley

Apple Rootstock

EMLA 27 (raintree item R020), \$2.75
 apiece*, qty of 20
 EMLA 26 (raintree item R060), \$2.50
 apiece*, qty of 40
 MM106 (raintree item R105), \$2.50
 apiece*, qty of 20

MM111 (raintree item R110), \$2.50
 apiece*, qty of 40

Budagovsky 9 (B9) Apple (raintree item
 R280), \$2.75 apiece*, qty of 60

Pear/quince Rootstock

OHxF 333 (raintree item R225), \$3.00
 apiece*, qty of 20
 Quince Province BA 29C (raintree item
 R227), \$2.75 apiece*, qty of 20

Stone fruit Rootstock

Krymsk I Plum (raintree item R116), \$3.75
 apiece*, qty of 20
 Marianna 2624 (raintree item R401), \$3.00
 apiece*, qty of 20

* total unit cost to STFS member is unit
 price + sales tax (~10%) & shipping
 (~10%). For non STFS member price, mul-
 tiply listed price by factor of 1.25.

European Pear Scionwood

Bella de Guigno
 Butirra Precoce Morettini
 Conference
 Orcas
 Rescue
 Starkrimson
 Suij
 Warren

Asian Pear (pear apple) Scionwood

Atago
 Chojuro
 Hamese
 Ichiban
 Mishirasu
 Shinseiki



Customizing your collection

AMATEUR FRUIT BREEDING

Story and photo by Laure Jansen

Having completed “The Nursery Manual” by L.H.Bailey, I found myself fascinated by the idea of **growing fruit from seed**. You may have noticed that the previous article on propagation did not include seed starting! That would be the subject of an entire book itself. However, I was very interested in his comments on growing seedling of rhubarb, apple and peach, amongst other fruits.

Some fruit, such as apples, have a genetic property called heterozygosity, meaning that the alleles, specific sections of a gene that can mutate, can differ significantly from one another. Additionally, a newly-studied function called genomic imprinting controls the gene expression by maternal or paternal parent. This effects color, taste, size of fruit, size of tree, etc. of seedlings of fruit plants produced by sexual reproduction. Having such diverse genetics allows the apple to adapt easily to new environmental conditions. Native apple (*malus*) species exist on every continent, and hybrid *malus* species have adapted to all but the most extreme conditions throughout the world.

Before the human genome was sequenced in 2003,

scientists had wildly overestimated the number of genes in *Homo sapien*, between 50,00 and 140,000. It turns out we only have 20,500 genes. Rhubarb has apples has about 57,000; pears have; woodland strawberry (*fragaria vesca*) has 34,809. Of course, number is not the only way to measure, but it is an interest comparison and may indicate diversity potential.

Rhubarb from seed. Rhubarb produces seed heads freely through the season. If you grow rhubarb, you are aware of that, through the constant necessity of pulling these seed-heads out, to encourage production of new leaves. But if you ripen the seed, it germinates easily. If started early in the season, the plant becomes fairly large the same year. Beware: seedlings of crimson rhubarb plants may have red, pink or green stalks, and be sweet or very tart.

Peaches from seed. Peach seedlings are often grown from seed for rootstocks. The further downstream you get from the original trees, the more the seedlings appear to revert to wild type. So growing a seedling from a named cultivar may produce an

acceptable seedling for fruit production.

Pears from seed. Spread across Europe are two archaic species of pear: *P. communis* and *P. nivalis*. Genetic testing of the first, European Common pear, indicates that it has interbred with, and retains genetic influence of other species such as *P. eleagrifolia*, *P. spinosa*, *P. nivalis*, and *P. syriaca*. This pear is what we consider a dessert pear. The second, *P. nivalis*, is used to make wine, has been of great importance in Britain and France for over 400 years. In the eighteenth century, Jean-Baptiste Van Mons carried out the first recorded selective breeding of *P. communis* through cycles of seed propagation. At the height of his career he had around **eighty thousand seedlings** in his nursery. Most cultivars of dessert pears released in Europe during this time were developed via open pollination and fruits were selected according to their softness and buttery aspect.

Pear culture was introduced by the English and French settlers to the United States and Canada. As early as 1629, there was record of its cultivation in New England. Pears in the United States were initially cultivated by seeds, producing a much higher genetic variability than in Europe. In the United States, in the latter half of the nineteenth century, breeders have used the pear wild type (crosses between Asian and European pears) in their hybridizing, in order to obtain greater resistance to cold and “fire blight” disease caused by the bacterium *Erwinia amylovora* that is widely spread.

So, for amateur breeders of European pears in the twenty-first century, the goal must be a balance between fire-blight resistance and dessert quality. In-depth research into the genetics of parent stock may assist in identifying specific genetic lines that may improve the likelihood of growing a really tasty pear that will not succumb to fire-blight.

Apples from seed. Now here is where things get really interesting. I personally am interested in only several categories of apples: bittersweet ciders, red-fleshed, and russet apples. I have a collection of several hundred of these types. There are bittersweet

red-fleshed, and there are red-fleshed russets, and there are bittersweet russets. Each cultivar has some qualities I like, so there I have a large gene pool to work from to develop unique new apples. As an aside, I am not very interested in dessert apples, which is what most people breed.

One of my heroes is Steve Edholm of the Skillcult blog and website. He is constantly doing science experiments on just about any subject of fruit growing and homesteading you can imagine. He has written extensively on his philosophy, methodology and results of apple breeding. Here is his useful description of the levels of fruit breeding to which we might aspire.

Level one: plant out random seedlings from random seeds- Probably much less likely to yield quality fruit

Level two: Plant seeds of apples you like- more likely to give good results, but the one unknown parent is a real wild card.

Level Three: Make intentional crosses. Not only is success more likely with two known high quality parents, but you are now steering in a certain direction by combining known attributes

Level four: Studying genetics and making crosses based on that knowledge. presumably even more likely to get results that you want

Level five: Level four, but adding high tech stuff like genetic testing to determine if desired traits were passed on instead of growing out the seedling to find out

Level six: Genetic manipulation/modification GMO apples are already on the way

Edholm believes that the likelihood of getting good fruit is based on using the best parent stock, rather than random cross-pollination from local seedlings, crab apples and common dessert apples. This increases the chances of obtaining a good seedling apple dramatically. An cross-breeding study done at Cornell University in Geneva, NY in 1898, using 10 apple cultivars resulting in only 148 seedlings, resulted in 14 apples (10%!) worthy of naming: Clinton, Cortland, Herkimer, Nassau, Onondaga, Otsego, Oswego, Rensselaer, Rockland, Saratoga,

Schenectady, Schoharie, Tioga, and Westchester. That is a pretty good success ratio!

Edholm also believes strongly in the idea of public domain genetics. If many amateurs are creating tasty and diseases-resistant crosses, and those are shared with each other and the general public, then the biodiversity will improve. Also, he asserts that the goals of hobbyists (amateur) fruit breeders and “citizens of the world” are quite different than commercial breeders. Many apple enthusiasts love russet apples, which are not considered profitable, so will never be promoted commercially.

“Apples encompass an amazingly diverse range of flavors which most people never even have a chance to explore. banana, mango, fennel, berry, pineapple, citrus, cherry, rose, vanilla, spices, pear, wine, “apple”, jolly rancher’s candy and more all lurk in those genes. Probably the greatest variety of flavors contained within any fruit. While most post Red Delicious era consumers are obsessed only with the crunch of an apple, it is primarily the world of flavors contained in domestic Apples which drive the obsession of amateur grower/collectors like me and which makes the roll of the dice when growing out apples from seed seem not only worth the risk, but downright compelling!” - *Steven Edholm*

Many of you may have heard of the pomologist Albert Etter. He experimented with about 500 varieties of apples, until he had selected about 10 with desirable genetics. Then he grew hundreds of seedlings based on those limited parents, and he was very encouraged with the results of intentional crosses. He reported in the Pacific Rural Press 101 years ago, roughly contemporary with the Geneva breeding experiments:

“Just here a few words on the origin of apple varieties is not unfitting. Without doubt practically all of our old standard commercial varieties, like the Bellefleur, Spitzenberg

and Newtown Pippin, are the result of chance, not design. Seedlings came up by chance, fruited and their merit was recognized. Crossing of varieties for seedlings of merit was hardly done, if at all, and if done was not based on scientific principles. The seedlings of great merit have been carefully preserved and propagated, but the unknown possibilities of new varieties have not been explored.”

So breeding should start with parents that have qualities we really love, like flavor, texture and preservation, and other potential parents that might add to the disease resistance of the offspring. Some basic genetics study will confirm that some traits are dominant and some recessive. Dominant traits will express in the offspring even if only one parent carries that gene. Recessive traits will only express if both parents carry the gene. Apparently the red-fleshed gene is dominant, as are several genes that confer scab resistant or immunity. Flavor seems to depend both on genetics and environment, so is more difficult to target.

Artificial pollination is not difficult. It works pretty much the same with pome fruits. And stone fruits. Once you have grown out your seeds, and have seedling trees, these can be grafted to dwarf stock in nursery rows or to “frankentrees” to grow out for disease and taste testing. In promoting these seedling apples, you will be promoting biodiversity and learning some science - good for the brain!

Sources:

“The Nursery Manual” by L.H.Bailey. The MacMillan Company. 1920

Steven Edholm’s Skillcult website: www.skillcult.com and instagram: @skillcult

*“Origin, Domestication, and Dispersing of Pear (Pyrus spp.)” by G. J. Silva,¹ Tatiane Medeiros Souza,¹ Rosa Lía Barbieri,¹ and Antonio Costa de Oliveira. *Advances in Agriculture, Volume 2014. Article ID 541097* <https://doi.org/10.1155/2014/541097>*

“Pears of New York”. By U. P. Hedrick, George Henry Howe, Orrin Morehouse Taylor, Edward H. Francis, Harold Bradford Tukey. J.B.Lyon Co., NY. 1921

BOOK REVIEW

by Laure Jansen

I recently enjoyed the opportunity to read a newly published book by a member of our own fruit club, Lowell Cordas. The book, "Manual of Worldwide Temperate Zone Fruit and Nut Tree Rootstocks", is a comprehensive resource for all the types of rootstock used for malus (apple), pyrus (pear), prunus (peach, plum, apricot, nectarine, and almond), cherry separately, as well chestnut, pecan, walnut, and persimmon, quince and medlar.

If you have caught the grafting "bug", you probably already own the "Fruit, Nut and Berry Inventory". The new Cordas book is the equivalent for rootstocks. You will definitely want to add this definitive book to your reference library. You can depend on the information to be accurate, as it has been peer-reviewed by a number of experts whose names you are sure to recognize.

This book provides a in-depth introduction to rootstocks. A early section describes a general history of grafting, how to choose a rootstock, specific terms and concepts necessary to understanding rootstocks, as well as a comprehensive and descriptive list of originators and developers of rootstocks. Each species is then introduced with a historical background, and then a list of species-specific diseases, and followed by descriptions of individual rootstocks.

The book is generally organized by species and then by size category and then alphabetically. If that sounds confusing, don't worry! There is a alphabetical index by rootstock name, so you can find anything. Individual rootstocks include handy information source references, information on size, disease resistance, compatibility, vigor and fruiting,

At the end of the book , an extensive list of other sources is provided. An useful appendix provides apple vigor information, to help you match rootstock to scion. Other appendices document stone-fruit, cherry, almond and pear compatibilities.

In short, this book is comprehensive, up-to-date, and practical; it is a must-have for anyone involved in the production of fruit trees.

This book may be purchased by contacting Lowell Cordas at slcordas@yahoo.com or by phone: (360) 456-7367.

A sample entry for one of my favorite rootstocks:

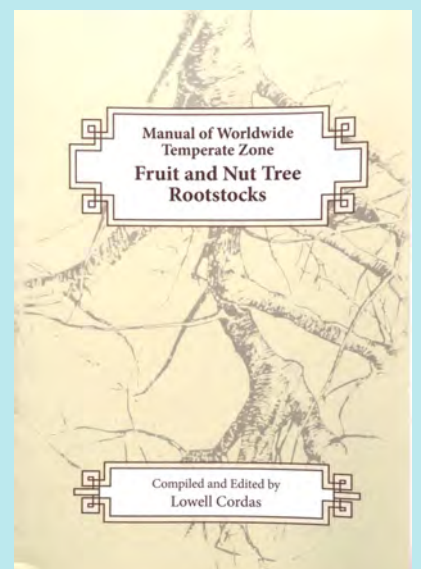
B.118 (aka Bud 118)

Origin: Michurinsk State Agrarian University, Russia

Height: 75% to 95%

B.118 is more vigorous than other rootstocks in the "B" series. It propagates easily in stool bed. Because of the vigor of the rootstock, it is only recommended for spur strains of apple of apple or in sandy soils. Produces a tree slightly larger than M.111 EMLA with a precocity that exceeds M.106 EMLA. Yield efficiency is similar to M.111. B.111 offers advantages such as excellent bud stands, resistance to cold and wet soil conditions, somewhat early bearing with moderate productivity. Good anchorage.

Fire blight: susceptible; Crown Rot: resistant but needs further testing; Crown gall: slightly susceptible; Powdery mildew: slightly susceptible; Woolly apple aphid: susceptible; Apple scab: resistant; Root suckers: none; Precocity: moderate; Support: no; Cold hardy: hardy, has survived -28°F; Replant disease: resistant



STFS OFFICERS:

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#3 - Linda Sartnurak (2021) (425) 271-6264

#4 Vacant

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STANDING COMMITTEES & CHAIRS

Orchard Committee - please volunteer

Events Committee - please volunteer

Programs Committee please volunteer

MEMBERSHIP AND RENEWAL FORM

Seattle Tree Fruit Society

www.seattletreefruitsociety.com

A Chapter of the Western Cascade Fruit Society

www.wcfs.org

Name:

Phone:

Address:

City, State, ZIP:

Email address:

DUES (includes STFS and Western Cascade Fruit Society)

New Member – Regular Rate – \$25 _____

New Member – Limited Income or Student Rate – \$15 _____

Renewing – Regular Rate – \$25 _____

Renewing – Limited Income or Student Rate – \$15 _____

Optional: Donation to support fruit research (\$5 min) + _____

Optional: Donation (other purpose) (\$5 min) + _____

TOTAL _____

make checks payable to STFS., and mail with this form to:

STFS, c/o Trent Elwing,
1035 Alaska Ave E, Port Orchard, WA 98366

Our STFS club is run by and for our members - volunteers make things happen. If you would like to help, contact any Officer or Board member (see your newsletter) or email seattletreefruitsociety@gmail.com

from the Fruitful Kitchen:

Oatmeal Cups

Makes 12 muffin cups

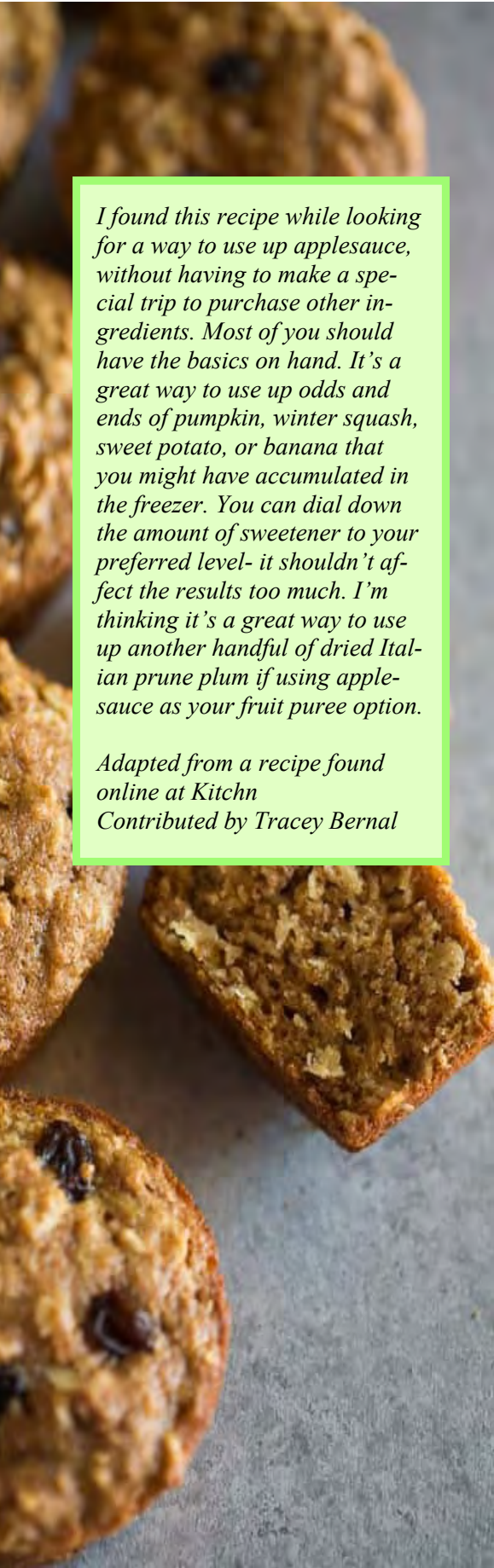
- Cooking spray
- 2 large eggs
- 1 1/2 cups milk (any kind)
- 1/2 cup unsweetened applesauce (or other fruit purée, such as mashed banana or canned pumpkin)
- 1/4 cup nut butter or 2 tablespoons melted unsalted butter or coconut oil
- 1/4 cup maple syrup or honey, or 3 tablespoons packed brown sugar
- 1 teaspoon vanilla extract
- 3 cups old-fashioned oats
- 1 teaspoon baking powder
- 1 teaspoon ground cinnamon
- 1/2 teaspoon fine salt
- 1/2 cup chopped nuts, pumpkin or sunflower seeds, coconut flakes, or chocolate chips (optional)
- 1/2 cup raisins or other chopped dried fruit (optional)

1. **Heat the oven and grease muffin pan:** Arrange a rack in the middle of the oven and heat to 350°F. Coat the wells of a standard 12-well muffin tin very well with cooking spray. If you don't have cooking spray, you can use melted butter applied in 2 coats with a pastry brush.
2. **Mix the wet ingredients:** Place the eggs, milk, applesauce, nut butter, maple syrup, and vanilla in a medium bowl and whisk until smooth.
3. **Add the dry ingredients:** Add the oats, baking powder, cinnamon, and salt and fold with a rubber spatula until combined.
4. **Fill the muffin tin:** Divide the oatmeal mixture among the muffin wells, filling each one up to the top.
5. **Top the muffins:** Sprinkle the muffins with the nuts and dried fruit if using. Gently press the toppings into the batter.
6. **Bake until golden:** Bake until slightly risen, dry on top, and golden-brown, 25 to 30 minutes.

Cool for 5 minutes: Cool in the pan on a wire rack for 5 minutes. Run a knife around each muffin and remove to a cooling rack to cool completely.

Storage: Muffins can be kept in an airtight container in the refrigerator for up to 5 days.

Freezing: Individually wrap any muffins you won't eat within a few days in plastic wrap and freeze. Defrost overnight in the refrigerator. Once defrosted, they can also be reheated in the microwave for about 45 seconds if you prefer them warm.



I found this recipe while looking for a way to use up applesauce, without having to make a special trip to purchase other ingredients. Most of you should have the basics on hand. It's a great way to use up odds and ends of pumpkin, winter squash, sweet potato, or banana that you might have accumulated in the freezer. You can dial down the amount of sweetener to your preferred level- it shouldn't affect the results too much. I'm thinking it's a great way to use up another handful of dried Italian prune plum if using applesauce as your fruit puree option.

*Adapted from a recipe found online at Kitchn
Contributed by Tracey Bernal*

Protect your Fruit: *Apple Maggot Barriers*

APPLE MAGGOT BARRIER ORDER FORM

Seattle Tree Fruit Society—A Chapter of the Western Cascade Fruit Society

Name:	Phone:	Date Rec'd _____ Date Mailed _____ Processed by- _____
Address:		
City, State, ZIP:		
Email address:		

We offer Maggot Barriers as part of our educational mission to promote and stimulate interest in growing fruit bearing trees, shrubs and vines in urban areas and to disseminate pertinent horticultural information to the public.

Maggot Barriers have proven highly effective in controlling apple maggot damage in home orchards in the Puget Sound area when used according to the instructions that come with each package. They may also reduce codling moth damage.

We offer two types: **REGULAR** for small/medium-sized fruit and **SUPER** for larger fruit.

To order, please complete this form. **Become a member and save \$5/pk**
(see website: www.seattletreefruit society.com)!

	Quantity (Packages)	Member Price	Nonmember Price	US FUNDS ONLY
REGULAR MB's		\$15/pk	\$20/pk	
288 per package	_____ X	_____	OR _____	= \$ _____
SUPER MB's (heavier thread)		\$10/pk	\$15/pk	
144 per package	_____ X	_____	OR _____	= \$ _____
		Shipping & Handling for 1-2 pkgs		= \$ 5.00
		Add \$5 S&H for each additional package		\$ _____
		TOTAL		\$ _____

Visit www.seattletreefruit society.com for membership and other information.

Mail order to:

STFS c/o Linda Sartnurak, 17504 – 155th Ave SE, Renton WA 98058-9064

Please complete the Shipping Label below:

From: Maggot Barriers – STFS
c/o Linda Sartnurak
17504 – 155th Ave SE
Renton WA 98058-9064

TO:

Name:

Address:

City, State, ZIP:

STFS: Who Are We and What We Do

In this time of social disruption, we review our commitments of time, energy and money to ensure that our lives are organized in a way that promotes our personal goals in the most effective way. Let us use the opportunity to review the organization and goals of our organization.

Western Cascade Fruit Society, our parent organization, is a 501(c)(3) nonprofit organization. The WCFS was founded in 1980 and is made up of chapters throughout Western Washington whose members are aspiring hobby orchardists and backyard fruit growers. Our primary objective is to bring together new and experienced fruit growers who will promote the science, cultivation and pleasure of growing fruit bearing trees, vines and plants in the home landscape. Local chapters disseminate information through education, fruit shows, orchard tours, meetings, workshops, and publications.

WCFS is the parent organization to nine affiliated chapters. WCFS publishes a quarterly BeeLine newsletter to inform members of events, tours, articles, and reports. Members receive automatic membership in WCFS after joining an affiliated Chapter. WCFS provides other member services, including a member forum, a chapter-wide event calendar, and a home for chapter sites. These can be found at www.wcfs.org.

Seattle Tree Fruit Society (STFS) is a chapter of WCFS, one of nine chapters in Western Washington. STFS brings together amateur growers – beginners to experts – from the Greater Seattle area who share an interest in growing fruit and nut trees, berries, kiwis, grapes, and other fruit. We offer information on adapted varieties, up-to-the-minute growing techniques, and share our own experiences growing fruit.

We meet each month from September to May, usually on a Saturday morning. Programs explore topics tailored to Western Washington growers, such as grafting, pruning, pest control, recommended varieties, nurseries, suppliers, home wine and cider making, and more.

STFS members receive both The Urban Scion Post, our monthly newsletter, and The BeeLine, an on-line quarterly from Western Cascade Fruit Society. Both feature a wide variety of useful articles about fruit, and announce upcoming events. Find us on [Facebook](#) and on our website www.seattletreefruitsociety.com.

The function of our STFS **membership** is to **be** the Seattle Tree Fruit Society. This is your organization. Please let us know what is most important to you. STFS can always do more! If there is a way that any of our members feel that STFS can be better, let us know. How can the board of directors be of further help to you as members? Please let board members know. And, some extent, the question is what can you, as a part of our organization, do to make STFS better, be it for your community, your local chapter, or for WCFS, our parent organization. Get involved. Remember, STFS is **you**.

Seattle Tree Fruit Society

11325 Alton Avenue NE
Seattle, WA 98070

E-mail: seattletreefruitsociety@gmail.com

