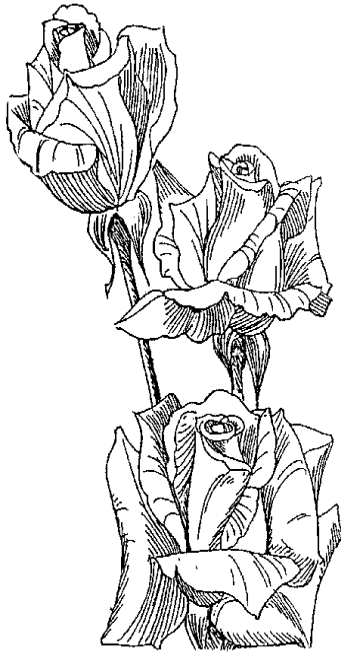


The Rose Vine

April 2008
Volume 42, Issue 2

Penn-Jersey District of the American Rose Society's quarterly newsletter

Bring on the blooms!



Rusty '83



Leda photo by Kevin Glaes

First I must apologize for this issue arriving so late – it is entirely my fault and I hope to do better in the future.

Second, I think that after doing this for a few years, I would get the hang of the numbering system for the 4 issues! Well, I think I have it right now. Winter is number 1, Spring is number 2, etc. So this past Winter issue that was printed as number 4 is wrong – it should have been number 1 for this year. This issue is number 2. You'd think that if they required me to count past 2 they would let me use my toes to count too!.

Spring pruning certainly showed what a mild winter we had. I was left with 14" of good canes on St. Patrick. I normally prune down to close to the bud union in normal years. OK, so what will be "normal" in the coming years?

The other item that proved the mildness of the winter was the number of 40 gallon trash bags filled with the clippings. Well under half of what I filled last year.

Of course, a mild winter generally means more bugs, good and bad, survived the winter. It will be interesting to see what the midge and Japanese beetle populations will be this year. And, does a mild winter mean the dreaded chili thrips may have been able to migrate farther north? I don't know. I'm hoping that they prove to be denizens of warmer climes like the fire ant. But that may just be wishful thinking.

I'm hoping the mild winter also means everyone will have great blooms for the shows. We have a full slate of shows in the District in June so I hope to see everyone out with their blooms at the shows. The shows are great events to participate in, both by showing and by working.

Shows are our best opportunity to show the public what great roses amateur gardeners can grow. So get out there in the garden, give a little extra care to the roses, and bring them to the show!

Kevin

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From the District Director's Desk

Penn Jersey enjoyed a great Winter Rose Getaway in February. Gus Banks did a super job organizing, Mary and Bill Slade provided a very luxurious Hospitality Suite, and our speakers were much appreciated. Pat Bilson led an Arrangers Workshop that was extremely well received and produced wonderful rose designs for our banquet tables. Our thanks to all of them. Remember Rose Getaway is scheduled for President's Weekend next year. Plan to come!

At the District Meeting Penn Jersey voted to amend its Bylaws by removing the "Regional Representatives". Originally intended to facilitate communication between the district officers and the local societies, the popularity of email has made these positions unnecessary. The revised Bylaws become effective when approved by the Board of Directors of the American Rose Society. I have placed this item on the Board's Agenda for the meeting in Denver at the end of June.

Some of our newer members have asked about the major ARS awards which we present at the fall District Convention. These awards are given to Penn Jersey District members who are also ARS members and are an acknowledgement of service to the District and the ARS. The Outstanding Consulting Rosarian Award and the Outstanding Judge award consist of a Certificate and plaque. Many years ago a Penn Jersey member established a fund to present a gift to the Outstanding Judge. Originally an engraved silver plate, a variety of gifts have been presented in recent years.

One Consulting Rosarian is selected each year by the District Director upon recommendation by the Chair of Consulting Rosarians and confirmed by the District Chair of Awards. Occasionally this award has gone to a husband/wife. The selection is made on the basis of performance and service as a CR – programs, presentations, individual consultations, participation in local society and district events and projects.

The Outstanding Judge Award recipient is also selected by the District Director based on recommendations from the Chair of Horticulture Judges and the Chair of Arrangement Judges, and is also confirmed by the District Chair of Awards. Extensive experience as a judge, understanding of the ARS criteria for judging all types of roses, participation in judging schools, experience judging throughout the District, and, the case of an Arrangement Judge, extensive knowledge of

types of rose designs and the ARS criteria for judging them are all considered in making the selection.

The Silver Honor Medal is the highest award given by the District. It consists of an engraved Silver Medal and a certificate. The Medal is given for distinguished service to the District and ARS. The selection of the Silver Honor Medal is the responsibility of the District Chair of Awards and Member of the National Nominating Committee and is confirmed by the District Director. Each society in the District appoints a member to the Silver Honor Medal Committee. In early Spring the Chair requests nominations for the award from the committee members who may choose to nominate any ARS member in the Penn Jersey District. The nomination must include a listing of the services and accomplishments of the nominee. The committee members ballot on the nominations until one candidate receives a majority of the votes of the participating committee members (which must represent more than half of the District's societies).



Arrangement by Cynthia Chandler
Photo by Tom Mayhew

District Notes

Support Your Local Rose Shows

- June 1: Philadelphia Rose Society Rose Show, Morris Arboretum.
Contact: Pat Bilson 610-644-1860, patbilson@yahoo.com
- June 7: Greater Harrisburg Rose Society Rose Show, Harrisburg Mall
Contact: Ron Chronister 717-766-2656, rnd4psu@verizon.net
- June 7: West Jersey Rose Show, Moorestown Mall.
Contact: Gus Banks 609-267-3809, jrsyrose@verizon.net
- June 8: Reading-Berks Rose Society, Boscov's North, Fairgrounds Square Mall
Contact: Pat Pitkin 610-488-1817, thornyoldrose@gmail.com
- June 14: Del-Chester Rose Society Rose Show, Longwood Gardens
Contact: Elaine Adler 610-692-5631, eadler@westtown.org
- June 14: York Area Rose Society Rose Show, The Brethren Home Community, New Oxford PA
Contact: Curtis Aumiller caumiller@comcast.net
- June 14-15: South Penn Rose Society Rose Show, 1st Lutheran Church, Chambersburg
Contact: Dale Martin 717-369-3036, demartin@innernet.net
- June 21: Pittsburgh Rose Society Rose Show, Drew Mathieson Horticulture Center
Contact: Dick Oberlander 412-486-0649, dickandevelyn@verizon.net

Fall Convention and Rose Show

2008 Penn-Jersey District Convention is being hosted by York Area Rose Society
September 19-21, 2008, Camp Hill, PA
Details in the Summer issue of the *RoseVine*

Arrangement Seminar Planning

Penn-Jersey is thinking of having either a workshop or a seminar at the 2009 PJ Fall convention hosted by the West Jersey Rose Society. A workshop would be a half day on Friday and a full seminar would be lecture, demonstration, and a workshop all day Friday. If you MIGHT be interested, please contact Patricia Bilson at patbilson@yahoo.com and let her know what you think. It will help in the planning process.

2007-2008 Winter Aquarium Experiment

By Wayne Geltz

In September my wife and I were planning to fill our 46 gallon aquarium with tropical fish when we decided that we really didn't want the maintenance that goes along with caring for the fish. The fish tank remained undisturbed for almost two months. Until I got the bright idea to take some final Fall cuttings off two of my new roses, Hot Princess and Let Freedom Ring.

On November 11th I took 4 cuttings off of Hot Princess and 2 cuttings off of Let freedom Ring. Each cutting was taken from the last canes produced. I cut the cane ¾" below the union with the old wood and just above the 6th set of leaf unions on the new wood. Each slip was placed in a 4" pot. The planting medium used was Hoffman's (indoor soilless mix) "Light Potting Soil". The soilless mix helps eliminate problems with pests like whitefly and fungal destruction of the tender new roots. I placed all 6 pots in an empty plastic planter and filled the bottom tray with water. The plastic planter was placed in the aquarium with the hood on and the light turned on. The ultraviolet light in the hood of the aquarium remains on 24/7.

The light serves to generate enough heat and promote growth. I watered each pot with a turkey baster twice a week. The water flows through the pots into the bottom tray of the planter. The remaining water in the bottom of the planter serves to humidify the aquarium. If the water in the bottom tray rises above the bottom of the pots I siphoned the water out of the planter with the turkey baster. It is very important to maintain consistent moisture in the soil but equally important that the extra water drains through the pot. If the new roots sit in water they will rot.

After three weeks in the aquarium I began adding a few drops of Monty's Joy Juice to the basting water. In order to prevent any type of spores growing on the new plants I sprayed the cuttings every 3 weeks with "E-RASE", which is a product normally used to eradicate Powdery Mildew once it shows up on the plants.

forced to repot the plants in 8" pots. At this point the aquarium was becoming too small to house 6 growing plants. I kept the strongest 4 plants and eliminated the 2 weakest plants.

On February 14, 2008 my first bud from one of the "Let Freedom Ring" cuttings opened. I was so proud of that that little rose plant that I cut the bloom and placed it in a vase in our kitchen. The bud was also a "home grown" rose given to my wife for Valentine's Day.

During the third week in February and I had to prune the rose plants to keep them from pushing through the lid/light of the aquarium.

Since the 1st week in March the young rose plants have begun to add new foliage and fill the aquarium with deep green leaves. I believe this invigorated growth can be attributed to my weekly feeding program of Schultz "Bloom Plus" soluble plant food (10-60-10). On Friday, March 21st, as I was concentrating on a "March Madness" College basketball game, I noticed that the hood of my aquarium was slightly raised. To my astonishment, when I opened the hood the new growth of the roses sprung out of the aquarium. Two fully formed buds on 18" canes stood 4" above the aquarium. The realization that these roses needed to be planted in the ground finally struck me. I can no longer consider these rose cuttings to be simply struggling slips. If the temperatures don't increase soon allowing me to plant these roses in my garden they will take it upon themselves to root in the sunroom. Spring has sprung and so have our rose cuttings. On Easter, March 23rd, the second set of buds on "Let Freedom Ring" and "Hot Princess" began to open.



Photo by Wayne Geltz

From the Mail Bag

Two interesting questions arrived in the mail over the winter. One about arrangements and the other about foliar feeding. I turned them over to some people with time on their hands (*Giggles* and *Zeek*) and here are the responses.

The arrangements I see at shows that I really like have a lot of space to help give the idea of three dimensions, but every time I try, I wind up seeing the open areas as "empty" and tend to fill them up with roses or materials and all the "space" disappears. How do you create an arrangement that utilizes space for a 3-D effect?

This month's question is more esoteric and therefore will cause my answer to maybe ramble a bit. But bear with me.

Space – the final frontier! Oops that was from somewhere else. Your question is both simple and hard to answer.

You want to know why you see open areas as 'empty' and tend to fill them up with stuff when doing arrangements. Honestly, the reason is probably that you might be feeling unsure of your creation and are trying to fill it up with more "stuff" so that your perceived "flaws" won't show. This is not an uncommon thing. Knowing how people will add to something to make it better when it is not necessary has been around for some time. The famous designer Coco Chanel recognized this and counseled her clients by saying that "When they got dressed in the morning and when giving a final look in the mirror – Take one thing off". So this desire to add more is not unknown. Indeed, when helping new and experienced arrangers, the hardest thing is to tell them and myself – "STOP. Do not add more stuff. Let it go". If you have been around rose shows you will often hear one arranger to another "Do you think I need more stuff?" And the answer is usually NO. Most often, you will hear something to the effect of no, take this or that away – it is too much.

Now, I am going to give you a couple of things to think about. When you enter a horticulture exhibit, you don't want anything to take away from the rose bloom. We penalize for distractions, torn leaves, extraneous material in the leaf nodes. Think of your arrangement as a hort entry. You wouldn't want to add stuff that will distract from the rose. Consider this second concept "Frame the Rose". We take wonderful pictures, or paint wonderful paintings. But the frame can mess the whole thing up. An arrangement is a way to use material, floral, sticks, wire etc. to make a frame in which to show off the rose. The space that you in the past wanted to fill in is exactly that – the frame for the blooms.

So next time you go to do a Modern or Oriental Style where space is usually important think of the following:

1. Use this venue to show off the BLOOMS.
2. Use empty space to be the frame around each element that lets the element stand out.
3. When in doubt leave it out
4. And maybe, as you are ready to leave the area, turn look and maybe take one thing out that clutters the space. . . Because Space is the final frontier where man should not put things. *Giggles*

How is this foliar feeding stuff supposed to work?' How can the leaves absorb anything. We know that we have to spray on the top and the bottom of leaves to protect them. What's this all about?.

Interesting question. Before going any further, it must be clearly understood that foliar feeding is not meant to be a primary source of nutrients for the plant. It should be used as a supplement to a good general fertilizer program. That said, foliar feeding has been used for years by rosarians to give their bushes and blooms a little extra "umph" (good scientific term!)

For years, botanists did not believe that nutrients could be taken up through the leaves. The leaf had no means of absorbing such materials. The only paths into the leaves were through the stomata and these were designed only for the transport of gases.

Then, in the 1950s, Dr H. B. Tukey and S. H. Wittwer, both at Michigan State University, sprayed plants with radio-active phosphorus and potassium and tracked the movement through the plant with a Geiger counter. They were surprised at how much material was taken up and how quickly it moved through the plant. This breakthrough led to much more research and experimentation on foliar feeding.

Foliar feeding can be very beneficial. A number of rosarians who grow outstanding blooms use a product called *Response*. This product is sold at the *Rosemania* site (currently listed at \$65.00). At www.agreponse.com, the Response company gives a lot of detail about the product and its action on plants.

I learned about foliar feeding from my Grandfather. He put a tablespoon of Sturdy in the sprayer whenever he sprayed fungicides or insecticides.

When Sturdy was no longer available, he started adding a tablespoon of Miracle-Gro for Roses in the sprayer.

I have used fish emulsion or liquid kelp with good results. I have only added these products when spraying fungicides so it might be a good time to try a few sprayings with liquid kelp by itself and watch for results.

One word of caution. We always hear the admonition to make sure the plants are well watered before

spraying chemicals and it is no different with foliar feeding. The plants must be well hydrated or you may burn the leaves. Also, always apply nutrients in liquid form – leaves can only take up nutrients when they are in solution.

Yes, foliar feeding will improve your roses, so it is worth a try. Do it over a bloom cycle and see if the expense and effort are worth it,

Deer Problems? Tried and proven test results

By Doug Helberg, Region 6 Director

From the spring 2008 issue of the Central District Dispatch, Dick Burkholder—Editor

When I first set up the rose garden at the Omaha Botanical Gardens, which is located along the Missouri river, the area was inhabited by many deer, hundreds of deer. The land was an old baled landfill which was covered with dirt from an old brick factory, and was to become Omaha's masterpiece for a Botanical Garden.

So being with no soil, no drainage, no water, the possibilities seemed not worth the effort. But the challenge was on, and several members of the Omaha Rose Society arrived to plant 750 rose bushes in mud that I was able to get donated (but a year early). No need to try to water in, as trenches filled in as soon as they were temporarily in place. The following year, they were moved into another temporary spot, at least we had drainage.

The third year, after we finally had real dirt hauled in, new beds were planted but there was still a drainage problem, as contractor's work was poor, at the best. Beds finally had to be elevated and after five years of frustrations, a formal rose garden looked promising. But, then came the deer for their dessert.

Our deer guards had been unplugged by contractors and we no longer had bushes. They devoured everything. Determined to get ahead of them, we ordered a product that I had read about but had little experience with at that time. It was

an electric sonic sound machine that put out a high pitched sound and they were able to keep the deer out. It certainly did the job. The sound is not detectable by the human ear, but certainly did the job. Now the deer have been hunted, chased out and fenced out by the boundary, so it is not needed at the gardens.

Had couple others experiment with it and it does keep large dogs, skunks, squirrels, armadillos and other rodents out of the area. Believe I am going to order one for my front yard to see if rabbits will also stay away. See now they also have a Bird Xpella Pro for keeping birds away; going to send one to a friend that has extreme pigeon problems at her condo.

It has a built in monitor sensor that activates when animals move into coverage zone. Advertised as environmentally safe. Covers approximately 35 ft. distance, 4,000 SF with frequency of 15M to 25M Hz. 80 feet by 50 feet with oval coverage. Those with deer problems, might want to give it a try and test yourself.

Available from: Yard Guard
Shop From Your Home
3871 N. Clarey St., Eugene, OR.
877-267-2444
www.shopfromyourhome.com

Judge's Journal - November 2007

Susan Clingenpeel

National Horticulture Judges Chair, 2007 – 2009

From the ARS web site www.ars.org

As we prepare for a new rose season there are several issues to be updated on and discussed.

One of the biggest changes to judging is the publication of *Modern Roses 12*. This new publication provides the latest rose registrations and proper exhibition names for roses.

As of now (this publication), *Modern Roses 12* is considered the latest ARS publication and therefore under the [Guidelines for Judging Roses](#) it is the source that determines the proper classification and exhibition name for a cultivar for show purposes. It is considered a later publication than the 2008 ARS Handbook. If there are any discrepancies between the two sources the *Modern 12* data should be considered correct. All errors or changes to *Modern 12* are available on the ARS website. A subscription to the *Modern 12* site is provided free of charge to anyone who has purchased the book. I encourage anyone who is hosting a show that has Internet access available at the show to have the website available to judges for use. If this access is not possible the most recent updates and changes to names, classifications and registrations can be downloaded from the site and made available to judges.

There are several specific roses I would like to address.

1. The popular miniflora 'Summer Night' has had its registration withdrawn and must be shown as 'Conundrum'. Therefore any entry shown as 'Summer Night' would be disqualified as being misnamed.
2. From reports I have read the floribundas 'Hannah Gordon' and 'Nicole' are continuing to be confused at shows. I have heard some comments from judges that they will continue to judge these roses the way they always have because nothing has been noted about a "change" on the rose registration page. Let me make this point perfectly clear - **there is nothing to change!** The registration for both roses has remained as it always has been (there had been no change to the description, classification or exhibition name for

either rose). The problem has occurred because many rosarians bought 'Hannah Gordon' from Edmunds and other sources MISNAMED as 'Nicole'. They are continuing to show it as 'Nicole'. Please read the accurate description of both floribundas provided in *Modern Roses 12*. There is a tremendous difference in petal count ('Hannah Gordon' has 20-25 petals and a deep pink to red petal edge, 'Nicole' has 30-35 petals and usually a softer paler, pink, petal edge). If you cannot remember the qualities of each rose please look them up! The great majority of bushes in gardens are 'Hannah Gordon' - not 'Nicole'. **If you see the variety with deep pink to red edges and 20-25 petals entered as Nicole, it must be DQed as misnamed.** Please also remember that *Tabris* and *Raspberry Ice* are synonyms for 'Hannah Gordon'. If you come across a *Raspberry Ice* or *Tabris*, the exhibit should be disqualified as the roses are being exhibited under the wrong name.

3. I would like to remind everyone again about the climber class. The only roses that now are allowed to compete for Best Climber are those classed as Large Flowered Climbers (LCI), Hybrid Wichuranas (Which.), and Hybrid Giganteas (HG). Three roses have recently changed classification from Climbing Teas to Hybrid Giganteas and therefore are now eligible for the Best Climber Certificate - they are 'Belle Portugaise', 'La Follette', and 'Senateur Amic'. The classification of the popular rose 'Sombreuil' was changed last year from a Tea to a Large Flowered Climber and now competes for Best Climber instead of for Dowager Queen.

Show chairs should be reminded that the ARS has approved a floribunda court (Queen, King and Princess) for shows. If a show chooses to have the court it should be selected in the same manner as other courts are selected in the show.

We also need to address the issue of the singles class. The change to define a single as having 4-8 petals was initiated by the Classification Committee. It is my understanding that this change was enacted

to reflect the proper botanical definition of a single flower and had no basis in defining it for exhibition purposes. The Guidelines were changed to reflect the board-approved definition of a single. The publication of Modern Roses 12 and subsequently the information in all 2008 and future Handbooks for Selecting Roses (which is based on the Modern Roses 12 data base) contain no listing of petal count for many cultivars, only the petalage stated by the hybridizer who registered the rose. For example, the popular floribunda 'Playboy' is listed as a single in both Modern Roses 12 and the 2008 Handbook For Selecting Roses. In most areas of the country 'Playboy' produces blooms with a petal count outside the defined 4-8 petal count. This contradiction has caused great confusion for exhibitors. At the Deep South District show 'Playboy' was DQ'd from the single class as the schedule called for the 4-8 petal count and the exhibited 'Playboys' clearly had more than 8 petals. The exhibitors argued that the Handbook said 'Playboy' was a single. What to do? The most realistic answer is to write a better schedule. **Shows should provide a class for roses with 4-8 petals and/or classed as a single by an ARS publication.** This wordage would open the classes to "semi-doubles" like 'Playboy' and be much less confusing for the exhibitor. It would also discourage exhibitors from removing petals to allow a bloom to fall into the 4-8 petal count. A definition that was created to reflect botanical correctness sure seems to be creating lots of problems for the judges!

I would like to reflect on disqualifying an entry. No matter how long you have been judging and how much self-confidence your team may have - it never hurts to check with another team prior to DQing. As an exhibitor there is NOTHING worse than having an entry disqualified incorrectly and nothing more embarrassing as a judge. I should qualify this to state that this is not for the obvious infraction such as leaving a cotton ball in a rose but for less obvious disqualifications such as not finding a rose as registered or not being familiar with a variety and disqualifying it because it does not meet the description in Modern Roses. I have twice seen the 'Irresistible' sport 'Marie Jeanette' DQ'd by judges unfamiliar with the cultivar because they looked it up and saw it was classed as a yellow blend and the entry they saw was a cream color (those of us that grow it know that creamy yellow is the typical color, at least in the South). Those unfamiliar with an OGR should always check with a knowledgeable OGR grower if they are unsure of the rose.

In conclusion, I appreciate the hard work performed by judges and all the time and effort it takes to judge a show. Our Horticulture Judges Committee will have proposed revisions to the challenge class section of the Guidelines for Judging Roses ready for approval at the Denver ARS Convention. I am happy to hear any concerns regarding judging you may have.

2008 Photo Contest Results
Penn-Jersey District Winter Rose Get-A-Way
February 15-17 2008

First Place: Summer Fashion (spray) Juila Sourbaugh (Class 6)

Second Place: Gemini Joe Makosch (Class 1)

Third Place: Excelsia on Rose Arbors, Elizabeth PRK, Hartford, CT. Tom Mayhew (Class 11)

Class Winners

Class 1 Novice: Gemini Joe Makosch

Class 2 Exhibition Bloom - HT, GR or FL.: Moonstone Tom Mayhew

Class 3 Exhibition Bloom - Mini or MiniFlora: Leading Lady

Class 4 Open Bloom - HT, GR, or FL.: Moondance Curtis Aumiller

Class 5 Open Bloom - Miniature: Neon Cowboy Kathleen Lapergola

Class 6 Spray - HT, GR, FL or Polyantha: Summer Fashion Julia Sourbaugh

Class 7 Spray - Mini or MiniFlora: Andie MacDowell Tom Mayhew

Class 8 Exhibition Bloom or Spray - Species or OGR: Rose du Roi

Class 9 Exhibition Bloom or Spray - Shrub or Climber: Pillow Fight Tom Mayhew

Class 10 Rose Arrangement: Table arrangement at Charlotte Mini National Bill Kozemchak

Class 11 Rose Garden or Rose Society Activity Excelsia on Rose Arbors, Elizabeth PRK,
Hartford, CT. Tom Mayhew

Numbers: 9 photographers entered 101 5x7 color prints.

Hints for Successful Grafting and Budding

By Dr. Malcolm Manners

Reprinted from the 1/94 issue of The Cherokee Rose

As found on Paul Barden's website: <http://www.rdrop.com/~paul/graftingtips.html>

After Diann Giles' excellent and expert presentation on budding and grafting at our November meeting, I thought it might be helpful to provide some complementary pointers or "tips for success" for first-time grafters or budders, and a couple alternative methods you may wish to try. So, the following is a slight modification of an article I wrote for the January/February 1991 issue of *Fine Gardening* magazine. It is printed here with the kind permission of the Taunton Press, publishers of *Fine Gardening*. The article was written for gardeners in general, not just rosarians, but the concepts and techniques presented are as valid for roses as they are for any other plant.

Grafting Basics: Advice and Methods for First-Time Success.

As a college teacher of horticulture, one of the skills I have the privilege of teaching is how to graft woody ornamental plants and fruit tree species. I find that many people are fascinated by the idea of grafting plants and that many have attempted a few grafts in their own gardens. In most cases, such attempts have resulted in failure, leading to the idea that grafting is an exceedingly difficult process that most people simply don't have the talent to learn. I disagree with that idea; I find that most people can become proficient at grafting, once the common reasons for failure are understood. In this article, I hope to explain the most common errors committed by beginning grafters, and how to avoid them.

"Grafting" is a process in which a part of one plant (e.g., a piece of stem) is surgically attached to a part of another plant (e.g., a root or a stem with roots). These parts grow together to form a single "grafted" plant. The part which will eventually grow to form the top of the plant, producing stems, leaves, flowers, and fruit, is known as the "scion" (pronounced "sigh-on"). Stems from which scions will be cut are called "budsticks" or "budwood." The bottom portion of the graft, which will produce the root system, is known as the "rootstock," "understock," or simply, the "stock." The point at which the scion and rootstock were joined and healed together is the "graft union" or "union." "Budding" is merely a type of grafting in which the scion is quite small, consisting of just one

axillary bud (from the point on a stem just above where a leaf was attached), and a small shield of bark.

The mere fact that a plant is grafted does not make it better than a non-grafted plant. Rather, it is the fact that a superior, selected scion was attached to a root system ideally suited to its growing conditions, which makes the grafted plant superior. With rooted cuttings or air-layers, you also get a selected cultivar, but these methods don't allow for any selection of the root system.

The production of grafted plants requires more skilled labor and considerably more time than are involved in producing plants from seeds or rooted cuttings, so grafted plants are usually more expensive than those produced by other means. Still, there are good reasons to graft some plants. I'll list a few, here:

1. Grafted plants are usually more uniform in their growth habit, flower color, flowering season, fruit size, shape, and quality, etc., than seed-grown plants. If you planted seeds from a 'Golden Delicious' apple, the resulting trees would produce fruit of varying types but none of them would bear 'Golden Delicious' fruit. Grafted trees, using scions cut from a 'Golden Delicious' tree, would all produce typical, 'Golden Delicious' apples.

2. They often begin to flower or bear fruit much sooner than plants grown from seeds. In the case of some fruit tree species, you can save several years of waiting time, through grafting. This is because seedlings of most woody plant species have a juvenile period, during which they are unable to flower or bear fruit. Even if you don't grow your own trees or shrubs from seeds, nursery-grown plants of many species are seedlings. A good example would be the southern magnolia (*Magnolia grandiflora*), which is nearly always sold by nurseries as seedling trees. Gardeners who buy such trees have to wait 5-10 years for the first flowers to appear, after the tree has grown quite large. On the other hand, grafted trees usually flower the first year after graftage, often while still in a 1-gallon pot. Apple trees behave in a similar manner; seedling trees may take many years

to begin to bear fruit, but grafted trees will bear when quite young. The reason for this difference is that in a grafted plant, the scion is cut from an old, mature tree. The scion physiologically "knows" that it is mature, and continues to behave as a mature stem (flowering and fruiting), in spite of the fact that it is now part of a small, grafted plant.

3. Grafting a plant allows you to select a root system adapted to your climate and soil, or resistant to local pests and diseases.

THIS IS THE MAJOR ADVANTAGE OF GRAFTED ROSES IN FLORIDA.

4. Some rootstocks produce extreme vigor in the scion. Others may cause the scion to be dwarfed.

5. A skilled grafter can propagate more species or varieties, often with better success, than could be accomplished by rooting cuttings or air-layers.

Because of these advantages, most fruit and nut tree species are commonly grafted, including apples, pears, peaches, plums, cherries, citrus, some grapes, walnuts, pecans, and avocados. Some woody ornamental plants are also commonly grafted, including blue spruce, some magnolias, most roses, gardenias, camellias, and tree peonies.

Grafts are usually most successful between members of the same species (apple on apple, peach on peach). Some plants can be grafted onto other species in the same genus (oranges on lemon roots [both genus *Citrus*] peaches on plum roots [both genus *Prunus*], or nearly any rose species or hybrid on any other species or hybrid [all in the genus *Rosa*]; or much less commonly, to another genus in the same family, such as orange on trifoliolate orange roots (genus *Poncirus* but still in the citrus family, *Rutaceae*). Grafts between different plant families (orange on apple roots, grape on walnut roots) usually don't form a union at all and in any case, never survive long enough to make a desirable plant.

Tips for Successful Grafting:

1. Use a sharp knife. A grafting knife needs to be literally razor-sharp. I test my knife by shaving some hair from my arm. If it won't shave cleanly, the knife isn't sharp enough. (Don't test a properly sharpened grafting knife with your thumb, or you may need sutures!) We have our knives sharpened professionally at a local shop, and I frequently touch-up the edge with a leather razor strop. A dull knife will almost guarantee failure at grafting. You can use nearly any style of knife but I would recommend one designed specifically for grafting. These knives are

honed on only one side, leaving one side flat. With such a blade, it is easier to make a very smooth cut in a woody stem. Because of the one-sided edge on grafting knives, they come in right- and, left-handed models. Be sure you have the correct type for your dominant hand.

2. Budsticks should be collected from young but firm stems of the plant you want to graft. I like to use stems which are no longer succulent, having produced some wood. For roses, the stems are at an ideal stage for grafting when the flowers are fading and dropping their petals, but before the buds have swollen for the next growth flush. For many fruit trees, the most recent growth flush can be used, after it has hardened. Some recalcitrant species graft best if the wood is cut just as the buds are beginning to swell for a new growth flush. Budwood should immediately have all the leaves removed, to avoid wilting. Wilted budwood usually won't make a successful graft union. Place the sticks in a plastic bag with a few drops of water, a damp paper towel, or a bit of moist peat moss, and seal the bag. If left in the sun, the wood may die within minutes, but in a shady, cool spot, it should last several days. Budsticks of many plant species can survive for several months in the refrigerator, if kept moist.

3. Rootstock plants can be grown from seeds, or may be rooted from cuttings in some cases. ['Fortuniana' rootstock for roses is virtually always produced from cuttings.] They should be well-watered for several weeks before and after grafting. As with wilted scions, wilted rootstocks often result in failed grafts.

4. When cutting the wood, use your entire knife blade: Start at the base of the blade, moving out to the tip in a single, sweeping cut. This results in a smoother cut than you would get by whittling, sawing, or pulling a single spot on the knife blade through the entire scion or rootstock cut. Splinters, bumps, or other imperfections in the cuts will tend to prevent a good match of scion to stock, and will reduce your success rate.

5. Unprotected cut surfaces may dry out in a matter of seconds, preventing a good graft union from forming. So, it is important to make your cuts, match them together, and wrap the graft as quickly as possible. I like to wrap a graft within 5 to 10 seconds of the time I start to cut the wood. Beginning grafters tend to hurry, ending up with a splintered, bumpy cut, or they take far too much time making smooth cuts.

But they find it difficult to make perfect cuts quickly. The only remedy for this problem is practice. I usually use roses when teaching beginning grafters, and I take long canes of a climbing variety to class for practice grafting. The students cut scions from the canes and reattach them elsewhere on the same cane, pretending that it is a rootstock stem. They can make 10 or even 20 practice grafts on a long stem, without feeling pressured by the knowledge that their grafts will fail if they don't hurry. When they've become adept at making good cuts, they throw the practice wood away and move on to a "real" scion and rootstock. No precious rootstock plants or scions have been wasted, and they are remarkably better (and faster) grafters than they were, 15 minutes earlier. I would suggest that if you try this method, practice on the species you intend to graft. If you are budding roses, don't practice on apple wood, which has an entirely different feel to it, under your knife.

6. In addition to working quickly, you can prevent the cut surfaces of your scion from drying by making those cuts first, then storing the scion cut-side-down on your tongue while you work on the rootstock. Of course, scions of toxic species or plants you've recently sprayed with an insecticide shouldn't be placed in your mouth, but most commonly grafted plants are harmless. I use this trick with roses, citrus, and magnolias (which taste bad!). Commercial citrus budders often cut large numbers of scion buds at once, storing them in their cheeks for later use. Saliva is harmless to the buds and doesn't seem to promote rotting or other problems for the graft.

7. Cut surfaces should not come in contact with the soil, which contains rotting organisms. Unless scions are in scarce supply, it is usually wise to discard any that are dropped on the floor.

8. I wrap grafts with 1/2-inch, clear polyethylene budding tape (not gummed). The wrap should be quite firm, stretching the tape almost to the point of breaking. Another wrapping material which has gained popularity in the last few years is parafilm, which is a very stretchy, waxy material, originally developed for sealing laboratory glassware. It has the advantage of not having to be unwrapped later, as does tape, since the growing scion will eventually stretch and split the parafilm. Also, if you stretch it correctly, parafilm sticks to itself, making it unnecessary to tie off the end of the wrap. Plastic tape must be tied securely.

9. In warm weather, I usually leave a graft wrapped 3-6 weeks, depending on the species being grafted. If

callus tissue has developed on all the cut surfaces, the graft is probably ready to be unwrapped. (Callus is the wound-healing tissue of the plant, and looks like a small blob of white or pale tan spongy material.) In cold weather, grafts should be left wrapped longer. Fall-grafted plants may be left wrapped until spring, in colder climates.

There are many methods of budding and grafting from which to choose. Two of my favorites are veneer grafting and chip budding. Veneer grafting is more likely to be successful than are most other methods, especially with difficult plant species. It is therefore a good method to use when learning to graft. In this method, a thin strip of bark is removed from the side of a rootstock plant. Rootstocks can be slightly thinner than a pencil, to slightly thicker than your thumb. The scion is a short (3 inch) twig. The bark is removed from the entire length of one side of the scion, and the cut side is placed against the rootstock cuts, aligning the cambium layers, which are located just beneath the bark. Chip budding is really just a type of veneer grafting, but uses a tiny, one-bud scion. This "chip" of bark replaces a similar chip, removed from the rootstock stem. Once you've mastered veneer grafting, chip budding is quite easy to learn. The big advantage of budding is that you can produce two or three times as many plants from the same amount of budwood as you could by veneer grafting. Both methods can be used at any time of year but I think the best time would be about a month before you want the scions to begin active growth.

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