## DUURHAM MASTERE GAIRIDENBIR NBNALBTREA March 20II

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This month we look at the again at the changes in the world of roses. Charles Murphy entertains us with another "Ramblings." We learn about keyhole gardens from Lissa Lutz.

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## E Nemy Loolx at Roses

There is a revolution occurring in the world of roses: gardeners are slowly rebelling against the demands of that prima donna, the hybrid tea rose. In the second half of the nineteenth century, the demand for a hardier reblooming rose created an explosion of hybrid teas. The original tea roses, known as "Tea-scented roses," appeared in Europe in the early nineteenth century. Europeans loved these elegant roses and between 1820-1920 rose breeders created over 2000 cultivars.' There was, however, a problem with the tea roses: while they were repeat bloomers, they weren't particularly hardy in colder climates.

Tea roses grow well in temperate climates in the spring and the fall, but their growth slows down when temperatures move into the high $80^{\circ} \mathrm{s}$; at the

[^0]
same time they require winter protection. Opinionated creatures, they dislike wet feet and if transplanted will sometimes take years before they consent to bloom again. Yet their advantages are great: most of their blooms carry a rose scent, they do not require full sun but will still put on a show in filtered sunlight, and they do not require the severe pruning hybrid teas do: "Almost all Teas resent hard pruning. If they are pruned in the same severe manner as Hybrid Teas, the plants may take several years to recover, or may not recover at all!" ${ }^{2}$ If you must prune, never prune more than one-third the size of the shrub.

After WWI, interest in tea roses waned as the gaudier hybrid teas took hold of the public imagination and by 1950 tea roses had virtually disappeared from the gardening market. It was only when interest in old garden roses gained traction that teas reappeared in the public's garden consciousness; today, however, the number of tea cultivars offered by rose breeders is quite small in comparison ${ }^{3}$-and of these, many are misnamed. Tea rose devotees around the world are making a concerted effort to correct that situation. Compounding the problem of correct identification is the variability of the tea rose: color and the shape of the flower change depending upon the weather and the season. "This variability is part of their charm for tea rose aficionados. But it also presents enormous challenges when trying to recognize of identify them" [Chapman, 40I-I3]. For example, Americans know one tea rose as 'Duchesse de Brabant ${ }^{\prime 4}$ whereas Europeans and Australians know it as 'Comtesse de Labarthe'. Another rose in question is one of the first to arrive in Europe: 'Hume's Blush Tea-Scented China', but the one sold today under that name is not the same rose. ${ }^{5}$ Some experts think that the tea rose we know today as 'Spice' is in reality 'Hume's Blush Tea-Scented China'. ${ }^{6}$

One popular tea rose is North Carolinian in origin. The Reverend James Sprunt of Kenansville, NC pruned back 'Safrano'-a very popular tea rose-causing the top of the bush to die back. From the roots appeared seven sprouts, one being a sport he named after his daughter. 'Isabella Sprunt' became one of the most popular of all tea roses as it makes a superb cut flower.?

We can grow tea roses in our Zone 7, although they will require mulching to survive our winter. For best results they should be grown on their own roots rather than grafted onto the roots of the dreadful R. multiflora. Should the bush die back, the shoots emerging from the roots will belong to the tea rose and not R. multiflora. ${ }^{8}$ Unlike hybrid teas, tea roses do not have a natural dormancy so winter pruning is ill advised. Pruning-if it should be necessary-should only occur after the last frost. Some tea rose cultivars are hardier than others so it is important to check their zone requirements before purchasing. And remember that tea roses are at their most vulnerable when young.

[^1]Throughout the nineteenth century rose breeders spent most of their energies trying to breed a hardy reblooming rose. Although it could put forth a succession of blooms, the China tea rose wasn't hardy in much of Europe or the US. Consequently the wealthy in England resorted to elaborate greenhouseswhich were then in vogue-to grow their tea roses.

Although hardier than the China teas, the hybrid tea roses also had their share of problems. In exchange for hardiness and non-stop blooming, many cultivars lost their fragrance and all to varying degrees are susceptible to blackspot, the most serious problem facing roses today. Consequently, weekly or biweekly spraying during the whole growing season is necessary to protect hybrid teas from it. Many municipalities and gardeners are now saying, "No!" to all this spraying, helping to explain the reason Knock Out $®$ was such a success when it was introduced in 2000. Today it has even outsold 'Peace', which up to 2000 had been the best selling rose of all time.

With the introduction of Knock Out $®$, gardeners began to realize that roses did not necessarily have to be fussy prima donnas but could be integrated into the garden. With a growing distaste for the spraying necessary to grow hybrid teas, breeders began to look for other roses that gardeners could grow without chemical manipulation. "In my estimation, the introduction of Knock Out® is a watershed event that the rose world has not witnessed since 'Peace'9 was introduced in 1945 and before that 'La France' in 1867." ${ }^{10}$ Today Knock Out $®$ is the leading rose in the nursery industry and breeders in Europe, Asia, and the US are using it in their breeding programs. "Knock Out $®$ gives credence to the idea that roses can be grown that fit into the landscape without damaging the environment." "|
"Earth-Kind $®$ " is the most esteemed title Texas A\&M can bestow on a rose. "This designation is awarded based on multiyear scientific research studies, combined with extensive regional field trials, conducted by or in collaboration with Texas A\&M horticulturalists. Only rose cultivars possessing an extremely high level of landscape performance, coupled with outstanding disease and insect tolerance and/or resistance, may receive the designation. The Earth-Kind $®$ philosophy is based on the premise that it is possible to identify beautiful plants that tolerate harsh, low-maintenance environments without fertilizers, pesticides, and other agricultural chemicals along with a significant reduction in irrigation." Earth-Kind® research now occurs in twenty-five states-from Alaska to Florida-and Bermuda, Canada, India, and New Zealand. ${ }^{12}$

Testing these roses is not a short-term proposition as it can take between 10-20 years to develop cultivars to match Earth-Kind $®$ standards. "The goal of the Earth-Kind $®^{8}$ program is not to recreate the breeding program of hybridizers around the world, but rather to identify those truly special cultivars that combine beauty with proven durability in the landscape" [||7|-90].

Today testing covers one hundred species of roses in four continents. Traditionally roses were graded on their "flower size, form, color, and, less frequently, fragrance" [1210-28]. The grading for Earth-

[^2]Kind® roses is quite different: (I) attractiveness of form and flower that is not influenced through fertilization or excessive pruning; and (2) durability in bearing up to local and regional weather conditions. All Earth-Kind $®$ roses are grown on their own roots ${ }^{13}$ as grafting is prohibited along with the use of fertilizer, pesticides and fungicides. All must be able to tolerate three different types of soil conditions: sandy, loamy, and clayey. They must also be able to withstand "severe and prolonged" drought with little supplemental irrigation [1 129-48].

Those roses bearing the Earth-Kind® designation can tolerate most rose pests such as thrips, spider mites, aphids and withstand the common rose diseases such as blackspot and powdery mildew. How does a rose develop resistance to black spot? Knock Out ${ }^{\text {TM }}$ "has variations in the lipid component of the cuticle layer that account for its resistance to blackspot" [I256-76]. Out of II5 evaluated rose cultivars, nineteen now bear the Earth-Kind® label for the southern states. ${ }^{14}$

To be accepted in an Earth-Kind® trial, a cultivar must go through a preliminary evaluation. Roses that are not repeat bloomers and rugosas are not accepted. The public wants repeat bloomers and rugosas are extremely sensitive to iron chlorosis in alkaline soils [I293-13I2].

All rose beds prepared for Earth-Kind $®$ research are prepared the same way:

- The vegetation is killed and removed;
- Beds are tilled to a depth of 12 inches;
- Three inches of compost is tilled into the soil. Manure is not used as may burn if not fully composted;
- There is a minimum of 15 plants per site: three plants each of five cultivars;
- Three inches of an organic mulch-typically chipped wood and bark mulch-is applied after planting;
- Drip irrigation is used during the first year of establishment;
- Drip irrigation is used just to prevent wilting during the second year;
- During years 3 and 4 irrigation is only provided during a prolonged and abnormal drought;
- No fertilizers or pesticides are applied during the four years. No pruning or deadheading is permitted [1353-73].

All this is exciting news for those of us who would like to grow roses but are reluctant to start a spraying program. Many of these roses have been with us for a long time. It is worth seeking out the EarthKind $®$ roses.

# Ramblings 

Water part II

[^3]Ye had a long, warm autumn in 2010, which eased us gently into the beginning of winter. Unfortunately, it was also a dry autumn, leaving us with a rainfall deficit at the end of December of about five inches. January didn't make it up, though near the end of the month we did have a few good rains. We had more snow earlier in the winter than usual, but snow doesn't make up much for a water deficit. An inch of snow produces far less than an inch of water as it melts, and even though parts of my yard have been damp for months now, I think it's mostly surface dampness rather than a sign of deep moisture. Since plant roots continue to grow throughout the winter, the shrubs and trees are still having to contend with mild drought conditions.

My unofficial rain gauge is the pond in our neighborhood; it's a rough estimate, but not inaccurate. This fall our home owners association partially drained the pond in order to do some dredging and other maintenance, lowering the level about five feet. They did the same thing last year (2009), and had barely finished dredging one end when heavy rains filled the pond to overflowing in about 48 hours. In 2010, however, those rains didn't materialize and we had a freshwater beach all around the pond until late January when we got enough rain to partly re-submerge it.

Fortunately, City of Durham Department of Water Management figures show that the municipal supply is in good shape. Two lakes, Lake Michie and Little River reservoir supply Durham's daily need for water, and as of the week of January 24, both lakes were full. "Full" means that the two lakes have a combined safe capacity of untreated water to yield 37 million gallons a day (MGD). [ I think large numbers are fascinating, and daily water use in Durham is a large number, indeed; On January 28, 201I, treated water demand was 25.30 million gallons, with a month-to-date average of 20.21 MGD. These figures are right in line with the 2010 averages.]

So, for now we're OK for water in Durham. But, no one is doing lawn watering now, the cool temperatures reduce evaporation losses and few outdoor vegetable and flowerbeds are producing. We all know that will change as soon as spring arrives and temps go up. If, as last summer, we move fairly quickly into an intensely hot dry period, we can count on a sharp increase in water use. And, while Durham has backup water supplies available from Jordan Lake (IO MGD), and the Teer quarry and Eno River, those sources would suffer from the same problems of diminishing capacity as our primary ones.

In order to conserve water used for irrigation, Durham has year-round restrictions in effect. Oddnumbered addresses may water once on Tuesdays, Thursdays and Saturdays before 10 am or after 6 pm. Even-numbered addresses can irrigate once on Sundays, Wednesdays and Fridays on the same schedule. Hand watering and drip irrigation are not subject to those restrictions. As gardeners we have a responsibility to use water wisely, and to encourage, by example, others to do so, both outdoors and indoors. A good guide to conservative water use in the garden is the publication "Water Wise: Landscaping and Watering Guide." Copies are available in the MGV office on Foster Street, and more information is available on the website for the City of Durham. (www.durhamnc.gov, highlight the City Services option, then choose water services.)

Rain barrels are a good way to store limited amounts of water at home. They're inexpensive and easy to set up, and, if appearance is a consideration, many models are quite presentable. The problem is limited capacity (about 50-55 gallons each), and the fact that you'll have to lug the water from a down slope barrel to beds farther uphill. Cisterns, both above and below ground, provide large capacity storage for rainwater. The best you can say for above ground styles is that they look functional, and homeowners associations might well look askance at a request to install one on your property. There's an above ground cistern at the Ag Extension building, and a whole array of them at the new educational center at

UNC botanical Gardens in Chapel Hill. And, you may still need some way to move the water from a lower to a higher level.

Oscillating and pulsating lawn sprinklers are variably efficient and not always good at limiting the spray to just the area that needs it. Built-in sprinkler systems are pretty efficient and can be operated by timers, combined with rain sensors, relieving the homeowner of remembering to turn them on/off. They can also be programmed for time of day, length of spray time and lawn section to be covered. Professional installation is expensive and requires a separate water meter from the city at a cost of $\$ 450-\$ 500$. They also require regular maintenance. But, for a large area they're the method of choice if you don't mind spending the money.

Choosing the right plants for your lawn/garden, and siting them properly will also reduce water use and, above all, waste. This takes some planning, but there is lots of advice available for the do-it-yourself gardener to make it relatively easy.

With some planning and care we can all use water more efficiently in the garden, and we have to do that. Water is not an inexhaustible resource, use it wisely.

## A Heyhole Garden

Early last spring, I stood in my yard and surveyed the many chores that needed to be done-pruning, raking, mulching. And I thought to myself, "Why spend time on these mundane tasks when you can Start a New Project!" I had recently been introduced to the concept of the keyhole garden. When I explored this term online, I discovered that there are two distinct types of keyhole gardens. The one with which most people are familiar describes a garden laid out in the shape of a keyhole, where the center is accessible by the gardener (if you are a foodie, think doughnut with a section removed). This design allows the gardener to tend to the entire garden without actually moving, and if the bed is raised enough, without even bending over. Who needs to expend energy, right?

But in my researching, I came upon a fascinating style of keyhole gardening, explained most elegantly in a site by Send a Cow. Send a Cow is a nonprofit that works to improve the livelihood of poor families in rural Africa by developing sustainable agricultural systems (www.sendacow.org). One approach they use is this unique adaptation of the keyhole garden (www.sendacow.org.uk/keyhole-gardens). The image below, copied from www.cowfiles.com, shows an example.


This version of the keyhole garden is domed and the central area is a composting basket. Gray water and compostable materials are added to the basket, providing water and nutrients to the plants at the same time. A small path provides access to the central basket. The shape increases the surface area for planting and keeps all crops within an arm's reach of the perimeter. In the picture shown, a gutter even directs rainwater from a nearby roof into the center of the garden.

I decided my landscape would not be complete without a keyhole garden.
I found several links with instructions for creating a keyhole garden on the Send a Cow website, and gathered my materials. Unfortunately, I don't have a site that gets full sun so I suspected my garden would be best suited for cool season or somewhat shade tolerant crops. In the sunniest spot I could find, I raked an area clear and used a stick and string to mark off a circle with a radius equal to half my arm span plus 12 inches. In the center of the circle I drove in 4 stakes and wrapped them in wire to create a basket about 18 inches across and $21 / 2$ to 3 feet tall. Local rocks were used to create the wall of the garden and the path leading to the basket. I used the "lasagna" approach to filling in the bed and creating the dome: layers of chopped leaves and mulch provided volume near the base while compost and bagged garden soil in the upper layers created a nice planting medium. The central basket was filled with layers of partially decomposed horse manure, chopped leaves, and other compostable materials. I added stones as I went to build up the wall. Finally, everything was watered in well.

By mid-March I had planted my spring garden. I had a bumper crop of lettuce! Despite the shade, I was also able to harvest broccoli, and over the summer grew chard, peppers, and squash. Some volunteer tomatoes from the compost also yielded fruit, some well into November.

I took photographs of my progress, and put together a short slideshow that can be seen on YouTube: http://www.youtube.com/watch?v=W99intVDaS0

I had fun creating this keyhole garden, and find it adds just the right amount of African flair to my landscape. Alas, now I have 2 year's worth of chores to do...it must be time to find another new project.

Editor: Bob submitted this charming piece for the February Newsletter. I, being an efficient editor, put it in my email folder labeled "Newsletter"-and promptly forgot all about it. Mea culpa and thanks for your contribution Bob! Better late than never...

## E Bouquet for Catharine

Daffodil (or some closely related narcissus) shoots were pushing up from the forest floor on the Dunnagan Trail* on the third Sunday of January. They are where they appear every year: just up the trail from Catharine Dunnagan's grave and bordering the pile of rocks from her fallen-down chimney and hearth. I like to think that Catharine tromped those bulbs into the ground along the Eno where she spent her life raising children and toiling away until she was laid in the ground in her $87^{\text {th }}$ year, just across from Durham's water pumping station built 30 years before. Her daffodils are special-every year they are the first I see, long before my own emerge. Further along Catharine's trail is an enormous oak tilted toward the sun; likely it shaded Catharine. Something is magical about that place and its daffodils and, when I came home, a marsh hawk was sitting on my mailbox.
*http://www.ncparks.gov/Visit/parks/enri/pics/enri_east_trails.pdf

## Tidbits

Editor: I asked the EMGVs what gardening blogs they enjoyed:
I find "The Garden Professors" interesting:
https://sharepoint.cahnrs.wsu.edu/blogs/urbanhort/default.aspx
I don't regularly read any gardening blogs, but I did discover an interesting one called, "The Garden Professors." It may have a Washington state slant but I have found other works by one of the contributors, Linda Chalker-Scott, to be very helpful. I'm assuming that anything she is associated with will be similarly helpful.

Here are a few blogs that I follow intermittently:

- Clay and Limestone: http://www.clayandlimestone.com
- Mr. McGregor's Daughter: http://mcgregorsdaughterblogspot.com
- Victoria Backyard: http://victoriasbackyard.blogspot.com
- The Exotic Garden Blog: http://www.exoticgarden.com/blog/
- You Grow Girl: http://www.yougrowgirl.com
- Durham's own Frank Hyman: http://liberatedgardener.typepad.com/liberated-gardener/

I automatically get Better Homes \& Garden e-mails that feature topics like: favorite perennials, landscaping your garden, plants for hot spots, planting for birds or butterflies, etc. I enjoy these features as well as learning what is new and fun to mix and match in the garden or for container gardens. This is a free feature and also has recipes, crafts, projects like building a garden shed, benches, bird boxes and more. See: www.bhg.com.

I discovered http://piedmontgardener.com/ by happy chance. Catherine Bollinger was in several of my graduate classes at Duke and has an amazing garden on four acres in Chatham County. She writes daily on her blog, which I find filled with keen observations.

## ROSE Olassification

Reses make me dizzy as there are so many names and classes that I cannot keep them straight. Am I the only EMGV so lacking in depth of knowledge? In hopes there are others out there equally deprived I have made an informal attempt to decipher the various rose classes. However be aware that rose classifications are not written in stone.
I. Species roses, all originating in the northern hemisphere, are those roses that existed before man interfered. Rosa rugosa, Rosa banksiae, and Rosa roxburghii are examples of species roses. There are also some species roses native to the US: R. arkansana, R. californica, R. carolina, and R. virginiana. R. multiflora arrived in the US from Japan in the $19^{\text {th }}$ century and is now on the list of invasive plants in thirty states.
2. Modern roses date from 1867 with the introduction of 'La France', the first hybrid tea rose.

- Hybrid teas are the result of a cross between the hybrid perpetual and the tea rose.
- Floribundas produce large spray of roses on one stem, sort of a "ready-made bouquet all on one stem." ${ }^{5}$
- Grandifloras exist because no one knew where to place 'Queen Elizabeth' when she was introduced in 1954. Her flowers are too small to classify her as a hybrid tea, too tall to be a floribunda. Of all the grandifloras, 'Queen Elizabeth' is the most important.
- Polyanthas are the predecessors of the floribundas. 'The Fairy' is the most widely grown of the polyanthas. Polyanthas should have "humungous clusters of dainty blooms" [22].
- Shrub roses are a catchall that includes David Austin's English roses, carpet roses, généosa rose (a French version of the English roses), Knock Out ${ }^{\text {TM }}$ roses, the Meidiland roses, rugosa hybrids, hybrid musks.
- Climbers are technically "Large-flowered Climbers" as opposed to the ramblers of the old garden roses. Climbers do not necessarily have large flowers but they rebloom throughout the summer. The kordesiis are suitable climbers for northern climates.
- Miniatures consist of climbing miniatures ("petite blooms on tall plants") and mini-floras [26-7].

3. Old garden roses consist of all the rose classes that existed before 1867. The four original European classes consist of the Albas, Centifolias, Damasks, and Gallicas, which bloom just once in the summer. Most old garden roses are fragrant.
[^4]- Albas require chilling hours if they are to bloom so are not suitable to warm climates. Albas form grace shrubs with rather smallish blooms. Albas, despite their name, may be tinged with pink.
- Centifolias have flowers consisting of 100 petals and are frequently called "cabbage roses."
- Damasks comes in a variety of pinks with a heavy fragrance. The flowers are the largest of the four original European old garden roses [29]. This classification received its name, not from the linens, but from the medieval name for the Syrian city: Damaske. ${ }^{16}$
- Gallicas grow on a shrub that wants to be a thicket. This is the rose to use if you want a hedge. Be warned: gallicas will sucker, often some distance from the roots.
- Moss roses were popular with the Victorians and were usually mutations of either centifolias or Portlands [30]. Moss roses smell of pine resin and have red-green bristles on the sepals. These are not particularly easy roses to grow. Do not confuse these roses with Portulaca grandiflora, whose common name is Moss Rose. Some are repeat bloomers while others only bloom once.
- Chinas revolutionized the rose world as they are rebloomers. Their origins are unknown and need Zone 7 or higher in which to grow.
- Teas have the spiral form we associate with hybrid teas and need warm climates.
- Noisettes were the first American class of roses [3I]. Developed in South Carolina, they were the first reblooming climbing rose but are not hardy enough to survive Northern winters.
- Ramblers are vigorous climbers, typically producing "huge sprays of relatively small blooms" [32]. These are the last roses to bloom and can suffer from powdery mildew. Groundcover roses, which the garden industry heralded in the 1980s are simply ramblers grown on the ground.
- Portlands are sometimes called "autumn damasks." Compact shrubs, they are old garden roses that won't grow out of control. This is a small class of roses, consisting of some of the first rebloomers to be bred from China roses in the west. This class is named after Margaret Cavendish, Duchess of Portland.
- Bourbons are those roses that naturally appeared on the Isle of Bourbon (now called Réunion) in the Indian Ocean. Bourbons produce large fragrant blooms but require extra winter protection.
- Hybrid Perpetuals are grown for their blooms as the plants can be straggly and unattractive, sharing many of the disease problems of the hybrid teas. $19^{\text {th }}$ century gardeners, considering the bushes unsightly, frequently grew them out of view so they could use the flowers indoors.


## Did You Know?

Roses do not have thorns; rather they have prickles. "No rose produces the woody modified stem or branch known as a thorn found on plants such as the shrub Pyracantha." ${ }^{17}$

[^5]
[^0]:    ' Chapman, Lynne. "A Close Look at Tea Roses," Shanley, Pat, Garden: A Reader in Rose Culture (Newbury Books, Philadelphia, on the Kindle, not to page numbers. The book will be referred

[^1]:    ${ }^{2}$ Chapman, Lynne et al. "Growing Tea Roses," SRG, 30I-2I.
    ${ }^{3}$ In the $19^{\text {th }}$ century rosarians estimate that there were over 2000 cultivars of tea roses. Today that number is around 200.
    ${ }^{4}$ The 'Duchesse de Brabant' is an interesting rose. Now part of the Earth-Kind ${ }^{\text {TM }}$ series, this was reportedly Teddy Roosevelt's favorite rose. The duchess in question was Marie Henriette who married the Belgian Duc de Brabant before he became king. This rose also has acquired other names besides 'Comtesse de Labarthe': ‘Comtesse Ouweroff', 'Comtesse Bertha' and 'Shell'. You can see the 'Duchesse de Brabant' at www.antiqueroseemporium.com/rose-405.html.
    ${ }^{5}$ Go to Redoute's rendering to see what it looked like: www.apictureofroses.com/cms/rose/L-020-tea-odorata-humes-blush-china-pink.htm.
    ${ }^{6}$ See: http://www.antiqueroseemporium.com/rose-2509.html.
    ${ }^{7}$ You can see 'Isabella Sprunt' at: www.antiqueroseemporium.com/rose-43I.html. 'Saprano' is found at: http://www.antiqueroseemporium.com/rose-402.html.
    ${ }^{8}$ FYI: I planted 'Duchesse de Brabant' this past fall and she has survived this winter, judging from her appearance.

[^2]:    ${ }^{9}$ To see 'Peace', go to: http://www.helpmefind.com/rose/l.php?|=2.2203.0.
    ${ }^{10}$ Shanley, Pat. "The Historical Significance of Knock Out®," SRG, [3488-35I0]. To see 'La France', which is the prototype for the modern hybrid teas, go to: www.antiqueroseemporium.com/rose-501.html.
    ${ }^{11}$ Shanley. "Knock Out®," [35I0-3I].
    ${ }^{12}$ Harp, Derald et al. "Earth-Kind® Rose Trials: Identifying the World's Strongest, Most Beautiful Landscape Roses," SRG, [|||3-3|].

[^3]:    ${ }^{13}$ In the opinion of Peter Kukielski, Curator of The Peggy Rockefeller Rose Garden at the New York Botanical Garden, it takes more time to establish a rose on its own roots than it does with grafted roses but the rewards are worth it: own root roses always are true to their variety, are more likely to survive harsh winters and temperature fluctuations, and are apt to be healthier. Kukielski also believes own-root roses are able to withstand pathogens better. Kukielski, Peter. "The Peggy Rockefeller Rose Garden's Dual Mission of Disease Resistance," SRG, [2918-38].
    ${ }^{14}$ 'Souvenir de St. Anne's', ‘Ducher', 'Mutabilis', ‘Spice', ‘Climbing Pinkie', 'Else Poulsen', 'New Dawn', 'Caldwell Pink', 'La Marne', 'Marie Daly', 'Perle d'Or', 'The Fairy', 'Belinda’s Dream’, Carefree Beauty ${ }^{\top M}$, Knock Out ${ }^{\text {TM }}$, 'Sea Foam’, ‘Duchesse de Brabant', 'Georgetown Tea', Mme. Antoine Mari'

[^4]:    ${ }^{15}$ Schneider, Peter. Right Rose Right Place (Storey Publishing, North Adams, MA, 2009), p. 21 . Future references will be in brackets [].

[^5]:    ${ }^{16}$ This is the rose classification identified with the Crusaders whom Saladin defeated in 1187. Reportedly Saladin had 500 camels lug rose water from Damascus to Jerusalem to wash the Mosque of Omar, which the Crusaders had converted into a church. Brenner, Douglas \& Scanniello, Stephen. A Rose by Any Name (Algonquin Books, Chapel Hill, 2009), p. 7 I.
    ${ }^{17}$ A Rose by Any Name, p. 245.

