

Magnolia

Magnolia Hybridizing: the Cutting Edge

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Magnolia hybridizing has progressed considerably since the days I spent tagging along with Phil Savage in Bloomfield Hills, Michigan, enjoying memorable weekends with Phil and his wife Tina. Together, we would observe the rows of magnolias in the nursery and discuss the merits or lack of merits of many of the trees. After the tour we busied ourselves collecting stamens with the hope that they would dehisce their pollen overnight while we drank beer. I can still remember the day Phil was on the very top step of his 12-foot ladder, trying to reach the first flower to bloom on his *Magnolia acuminata* × *M.* 'Dark Diva' hybrid, while I was anticipating calling 911. Another memorable experience from my early days with Phil was when I was putting pollen of *M.* 'Wada's Memory' on *M. acuminata* and Phil looked at me and said, "Why in the world would you ever want to make a cross like that?" Despite its great fragrance, floriferousness, and strong, stalwart growth, Phil was not fond of *M.* 'Wada's Memory' because of its floppy flowers. Phil was a terrific mentor and my hybridizing techniques have progressed considerably since those days.

I also made several trips to visit with Augie Kehr in Hendersonville, North Carolina, to view the many rows of magnolias he had in his nursery. Augie was a very knowledgeable and generous man who contributed much to the groundwork for my hybridizing. I never had the opportunity to do any hybridizing with Augie, but he sent me generous amounts of pollen, budwood, and seed.

Both Phil and Augie were responsible for many of the primary crosses that laid the groundwork for most of the complex hybrids being developed today.

Developing Magnolias Hardy In A Zone 4-5 Enviroment Which Bloom Late And Therefore Avoid Spring Frosts

This goal can be accomplished by using late-blooming *M. acuminata*, *M. liliiflora* and their hybrids. *M.* 'Rose Marie', which is a cross of *M.* 'Pink Surprise' × *M.* 'Daybreak', is $\frac{1}{4}$ *M. acuminata* and $\frac{1}{4}$ *M. liliiflora* and is very late blooming. *M.* 'Rose Marie' can bloom for as long as a month; it and *M.* 'Daybreak' are my longest blooming magnolias in subgenus *Yulania*. One of the more promising crosses with *M.* 'Rose Marie' is *M.* 'Blushing Belle' (*M.* 'Yellow Bird' × *M.* 'Caerhays Belle') which should exhibit some later blooming, gorgeous pink flowers. The cross of *M.* 'Rose Marie' × *M.* 'Gold Cup' is producing some vigorous hybrids that hopefully will retain the vivid color of *M.* 'Rose Marie' and also have the heavy tepal

texture of *M.* 'Gold Cup'. *M.* 'Daybreak' is somewhat selective in its seed fertility; it will produce abundant seed with *M.* 'Gold Cup' or *M.* 'Red Baron' pollen, but almost no seed with *M.* *campbellii*. Hybrids that are more than $\frac{1}{4}$ *M.* *acuminata*, such as *M.* \times *brooklynensis* 'Woodsman', *M.* 'Yellow Bird', *M.* 'Red Baron', *M.* 'Black Beauty', and *M.* 'Yellow Lantern', also should produce hardy, late-blooming magnolias.



Magnolia 'Blushing Belle'

Developing Small, Narrow-Growing Magnolias

Several times a year I am asked the question, "What magnolia will stay dwarf and only get six feet tall?" I am always tempted to say, "Plant a hibiscus." With the exception of *M.* *liliiflora* and *M.* *stellata*, most magnolias in subgenus *Yulania* are timber trees and consequently their hybrids are reluctant to produce dwarf-sized trees. Through selective breeding, smaller sized trees are attainable, but that may take several generations. A more attainable goal may be to develop narrowly fastigate trees that will accommodate a compact landscape. Hybrids with a narrow growth habit include *M.* 'March to Frost', *M.* 'Sunsprite', *M.* 'Sunspire', *M.* 'Black Beauty', *M.* 'Daybreak', and many of the *M.* *liliiflora* \times *M.* *stellata* hybrids. I have made several crosses utilizing these hybrids, but it is too early to determine what the ultimate size of the resulting hybrids will be. Making crosses with some of the smaller-growing New Zealand hybrids like *M.* 'Genie' could also accomplish these goals.

Crossing Section *Magnolia*, Section *Rhytidospermum* And Section *Manglietia* To Develop Attractive Foliage Plants With Fragrant, Red/Pink Flowers

This is rapidly becoming one of the most exciting areas of magnolia hybridizing with the prospects of exotic, tropical-looking plants with red/pink flowers. One of the first crosses made between subsection *Oyama* and subsection *Rhytidospermum* was the very fragrant *M.* \times *wieseneri*, a cross of *M.* *sieboldii* and *M.* *obovata*. Later crosses were *M.* 'Urbana', a cross of *M.* *virginiana* and *M.* *tripetala* made by Joe McDaniel; *M.* 'Nimbus', a cross of *M.* *virginiana* and *M.* *obovata* made by the National

Magnolia

Arboretum; and *M.* 'Southern Belle', a cross of *M. sieboldii* and (*M. tripetala* × *M. obovata*) made by Augie Kehr. Many of these crosses need to be repeated with hardier and better forms of the species. My crosses include *M.* 'Oriental Charm', an extremely fragrant cross of *M. officinalis* and *M. obovata*; *M.* 'Angel Mist'; another extremely fragrant cross of *M. officinalis* and *M. ×wieseneri*; *M.* 'Silk Road', a cross of *M. tripetala* × (*M. tripetala* × *M. obovata*); *M.* 'Sweet Love', a cross of *M. sieboldii* × *M.* 'Oriental Charm'; and numerous others not named at this time.



Magnolia 'Oriental Charm'

I have several very hardy seedlings of *M. virginiana* that produce hundreds of blooms and abundant seed each year. I have crossed them with *M.* 'Angel Mist', *M.* 'Oriental Charm', *M.* 'Sweet Love', *M.* 'Southern Belle', and several other "big leaf" species and hybrids. The problem is that they are so self-fertile that many of the resulting seedlings turn out to be open pollinated *M. virginiana*. The hybrids are always evident, but I have to plant many seeds to get a few hybrids, so I am hesitant on sending out seed when many of the resulting seedlings are pure *M. virginiana*.

The next step is to cross section *Manglietia* with *M. sieboldii* and some of the above hybrids to bring red/pink coloring into these exotic and tropical looking hybrids. Thus far I have crossed *M. sieboldii* and *M.* 'Silk Road' with pollen from a red flowering *M. insignis*. If enough *M. insignis* pollen is available, hopefully it can be crossed with the "big leaf" hybrids like *M.* 'Oriental Charm', *M.* 'Angel Mist', and others. It would also be advantageous to cross these hybrids with pollen of *M. grandis*, and the intensely red pigmented *M. garrettii*.

Crossing section *Magnolia* with section *Manglietia* should also produce some very desirable hybrids. *M. virginiana* has already been crossed with *M. insignis*, yielding the resulting hybrid *M.* 'Katie-O'. This cross needs to be repeated with a very hardy form of *M. virginiana* and a red form of *M. insignis*. *M. virginiana* var. *australis* could also be crossed with a red flowering *M. insignis* to produce an evergreen magnolia with red/pink flowers. *M. virginiana* also needs to be crossed with *M. grandis* and *M. garrettii*. The cross with *M. garrettii* could produce a red/purple-colored evergreen magnolia since *M. garrettii* appears to have more purple pigmentation, while *M. insignis* appears to have more pink pigmentation.

The "holy grail", of course, is to cross *M. grandiflora* with a red or pink flowering species from section *Manglietia*. Crossing *M. grandiflora* with *M. insignis* should result in a fairly hardy hybrid, but it may have to be back-crossed with *M. insignis* to increase the color intensity since the hexaploid *M. grandiflora* would likely dominate the cross. Crossing *M. grandiflora* with *M. garrettii* could produce even more red/purple pigmentation than the *M. insignis* cross, but hardiness may be sacrificed since *M. garrettii* is not as hardy as *M. insignis*. Other options are to cross *M. grandiflora* with *M. grandis* and other red forms of *M. insignis* such as the one often referred to as *M. maguanica* from southeastern Yunnan, China.

Hybridizing A Multi-Tepaled Magnolia With Red/Pink Or Golden Yellow Flowers

Crosses of *M. ×loebneri* 'Leonard Messel' × *M. ×loebneri* 'White Rose' have resulted in flowers with up to 24 tepals, but are a soft pink color. Quite likely there would not be enough pigmentation if the crosses are made within the species. If a cross of a diploid like *M. ×loebneri* 'White Rose', *M. ×loebneri* 'Encore', *M. stellata* 'Two Stones', *M. stellata* 'Pink Perfection', or *M. ×loebneri* 'Wildcat' were made with a red-colored magnolia like *M. 'Black Tulip'*, *M. 'Cleopatra'*, or *M. 'Genie'*, the resulting hybrid may have good red/pink pigmentation, but lack a large number of tepals. Maybe the best avenue of approach is to cross the above-mentioned selections of *M. stellata* and *M. ×loebneri* with a triploid like *M. 'Ann'*.



Magnolia 'Royal Splendor' is a cross of *M. 'Pink Royalty'* × *M. 'Daybreak'*

The golden yellow multi-tepaled magnolia may be even more difficult to achieve. The crosses I made with *M. acuminata* and *M. ×loebneri* 'White Rose' resulted in pale yellow flowers. Likewise *M. 'Gold Star'*, a cross of *M. acuminata* 'Miss Honeybee' and *M. stellata* 'Rubra', resulted in pale yellow flowers. Crossing *M. ×loebneri* 'White Rose', *M. ×loebneri* 'Wildcat' or *M. ×loebneri* 'Encore' with *M. 'Butterflies'* may provide some hope.

Magnolia

The Quest For An "Everblooming" Magnolia

In my hybridizing program, *M.* 'Exotic Star', a cross of *M. sieboldii* × *M. grandiflora* 'Russet', is the closest to this achievement. It blooms from April to October in the greenhouse, but needs to be tested in an outdoor environment once sufficient plants become available. This magnolia is very easy to root from softwood cuttings, but extremely difficult to bud. Thus far it has been seed sterile, but pollen of it has produced seeds on *M. sieboldii* 'Colossus' and *M. virginiana*. The *M. virginiana* × *M.* 'Exotic Star' could have a long blooming period.

In section *Yulania*, *M.* 'March to Frost' does have summer flowers if there is sufficient rainfall, but they are inferior to spring flowers. Crossing it with *M.* 'Ann' or another long bloomer like *M.* 'Black Beauty' might be advantageous. Some of the New Zealand hybrids appear to be repeat blooming so I could see crossing *M.* 'March to Frost' with pollen of *M.* 'Genie', *M.* 'Cleopatra', or some of the other repeaters. While *M.* 'Day-break' and *M.* 'Rose Marie' will have a spring bloom of about a month, there generally is no repeat bloom on them. It may be possible to extend their spring bloom for an additional month by crossing them with some of the New Zealand hybrids.

Red/Pink Flowers In Section *Michelia*

In my zone 5 climate we are now talking about greenhouse or sunroom plants. I do have a cross of *M. acuminata* × *M. doltsopa* that has survived several winters, but has not yet bloomed. It has not remained evergreen, but has wood and leaves resembling *M. doltsopa*. I have also hybridized *M.* 'Rose Marie' and *M.* 'Red Baron' with pollen of section *Michelia*, but these may result in more of a novelty than anything else.

The Jury hybrid *M.* 'Blush', a cross of *M. laevifolia* × (*M. figo* × *M.* 'Silver Cloud'), is being offered this spring by a large grower in the United States. There may be an advantage to crossing it with *M. figo* var. *crassipes* or other pink-colored hybrids such as *M.* 'Touch of Pink'. Another worthwhile cross that I pursued this spring was to cross *M. doltsopa* and *M. maudiae* with *M. figo* var. *crassipes*. Hopefully, I can increase the size of the flower of *M. figo* var. *crassipes* and yet retain most of its purple color.

Crossing The Subgenus Barrier

Crossing subgenus *Magnolia* with subgenus *Yulania* has been a difficult challenge and I am aware of only two successes. One was reported in the

Magnolia Society's journal (Suesatcha, Satha, "Magnolia 'Mon Champa' My Ultimate Yellow Magnolia", *Magnolia* 44.86, 2009) of a cross of *M. liliifera* × *M. champaca*, and I had one successful cross of *M. acuminata* × *M. grandiflora* 'Russet' on Phil Savage's *M.* 'Fertile Myrtle'. My cross was accomplished on a very hot and humid day and it is quite likely that the Thailand cross was probably made in the same environment. With these two results one may speculate that a hot and humid environment may be necessary for success. I will force some potted plants of subgenus *Yulania* in my sunroom and try and hybridize them with *M. grandiflora* pollen. The National Arboretum also made crosses of *M. grandiflora* × *M. liliiflora* and *M. grandiflora* × *M. acuminata*, but I am not sure they were true hybrids.

Bridging The Vast Pacific Ocean

Vance Hooper and others in New Zealand have developed some very exciting "instant blooming" gorgeous colored hybrids. Through the generous cooperation of Vance, a 2010 hybridizing goal of mine has been a "marriage" between many of my hardy *M. acuminata* hybrids and some of Vance's exotic hybrids like *M.* 'Genie', *M.* 'Brixton Belle', *M.* 'Cleopatra' and others.

In conclusion, much work needs to be done and I am enthused to see so many of our members becoming actively involved in magnolia hybridizing. However, we must be aware that crossing two outstanding cultivars will not always result in a hybrid with the best attributes of both parents, and many disappointing hybrids can result. Since I don't have the facilities to plant thousands of magnolia seedlings, sharing seed with friends throughout the world should nevertheless result in some outstanding cultivars in the future.



Magnolia 'Crescendo' is a cross of *M.* 'Yellow Lantern' × *M.* 'Big Dude'