On the trail of Magnolia virginiana—*A visit to Western Tennessee and the Central Gulf Coast*

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As reported previously in this journal, an improvement and development program centered on *Magnolia virginiana* was begun at The Ohio State University in 2006. The resultant seedlings from the original crosses have undergone rigorous, data-driven evaluation as well as casual observation to delineate differences and potential standouts amongst the progeny. Statistical evidence has shown little variation in the F1 progeny. So, in an attempt to diversify the variation in our germplasm and to better our understanding of the variation in the species, I have, for the past two years, made collection trips to key parts of the species range to collect seed.

In 2007, I visited the eastern and northern parts of the species range and made several successful collections. For two weeks in late August 2008, I visited the southern part of the species range, with special emphasis placed on the disjunct populations of the var. *australis* that occur in southwestern Tennessee. After visiting these populations, I made my way south to the heart of the species range on the gulf coast. Not only were we successful in locating seed sources of many populations of var. *australis,* but I was also embraced by many exceedingly helpful cooperators who helped make an exhausting collection trip into a cherished time with new friends.

During the gray days of February past, a plan was hatched to visit the disjunct populations of *M. virginiana* var. *australis* still extant in southwestern Tennessee. In an attempt to gain more detailed information about these populations, I contacted Larry Langford. In speaking with Larry, we decided to meet sometime around the 15TH of August to visit the populations and collect seed.

Flash forward six months. My traveling companion, Scott Beuerlein, and I arrived at the University of Tennessee (UT) field research station in Jackson Tennessee and met with Larry, Carol Reese (an extension specialist with UT) and Jason (research station horticulturist). We were given the silver dollar tour of the grounds and were the recipients of divisions and seeds of many of the new and useful plants they have been trialing. Although there were no *Magnolia* trials, we were treated to a visual kaleidoscope of contrasting colors and textures achieved by the prodigious plantings, mostly consisting of the hottest new perennials, succulents, and annuals to be found any-

where. The research station is certainly worthy of a visit by anyone even remotely interested in plants.

After our tour, we headed for the Bethel Springs population of *Magnolia virginiana* var. *australis*, which was first brought to the attention of *Magnolia* enthusiasts by J. C. McDaniel. The magnolias are smack dab in the middle of "downtown" Bethel Springs and occupy a small, but prominent, corner of a swampy slough right off the main road. When one is used to seeing the northern form of the species, seeing these plants for the first time as a dominant canopy tree causes one to instantly re-assess one's perception of this variable species. These single-trunked beauties ascend skyward to 40-50ft (12–15m) in height, and are heavily clothed in dark, almost black, green foliage that causes heart palpitations when one considers the potential horticultural merit these plants display for northern gardens.

We immediately began scrounging around for seeds. It appeared that we visited the population at just the right time for collecting. We collected as many seeds on the ground as we could find and as we could reach. Interestingly, we found a cone with yellow seeds protruding from its sides. A genetic mutation? Unripened seeds? Time will tell. Larry also showed us an interesting

A specimen of *Magnolia virginiana* at Bethel Springs with undulating leaf margins.

The noteworthy specimen of *M. virginiana* in Jackson, TN.

seedling with heavily undulating leaf margins that provides a unique textural relief to its surrounding brethren (see photo on previous page). Plans have been made to propagate this form in the coming season.

In total, there are not many trees in this population. A venture into the understory revealed seedlings popping up everywhere, indicating a relatively healthy, reproducing population that will persist for the foreseeable future.

Also that day, we visited a second population of *M. virginiana* at Chickasaw State Park. These plants occupied a different type of wet area and required a strenuous hike to get to them. We were led into the forest by the head forester and after about an hour came into the realm of this little known and little visited population. The plants grew in wet soil along Gray's Creek in a heavily forested area, and while most of the plants were small and rangy in stature, we had the opportunity to witness one of the largest trees of *M. virginiana* that any of us had ever seen. Unfortunately, the forested nature of the area meant the all the fruit-bearing limbs were far

Foliage of *Magnolia* x 'Reigel' in Larry Langford's garden.

out of our reach and we were not able to collect any seed. We were able to collect seeds from a smaller plant and about half them proved to be sinkers. From what we could see of the trees, they appeared to be similar to the Bethel Springs plants and hold promise as hardy forms of var. *australis* for northern gardens.

There is apparently some debate as to whether or not the Chickasaw population represents a natural population or plants that were cultivated on an abandoned farm. Whatever the case, these plants will remain protected, as *M. virginiana* is an imperiled species in Tennessee and all existing populations will remain intact under law.

Later that day, we were treated to quite a sight at the suggestion of Carol. She mentioned a noteworthy specimen of *M. virginiana* in Jackson that we just had to see before leaving town. We were not prepared for what we were about to see (see photo on page 7). As we approached the tree, growing right next to the road, we marveled at its straight, single trunk, compact habit and extreme similarity to any well-grown cultivar of *M. gran-*

Magnolia grandiflora 'Calla Leaf.'

diflora. Needless to say, we collected as much seed as we possibly could and snapped numerous photos. A plan is in place to propagate this majestic beauty.

The next day we were treated to a tour of Larry's *Magnolia* collection, and being a prime example of a mature garden, we were not disappointed. The highlights of Larry's garden are too numerous to mention, but being a northerner and not being able to enjoy the ubiquitous splendor of *Magnolia grandiflora* such as Larry's climate will accommodate, the most curious plant I witnessed was a *M. grandiflora* × *virginiana* hybrid called 'Reigel' (see photo on previous page) This plant appears to be intermediate between both parents in addition to being exceedingly beautiful. I collected a few cones from the tree, and although it was a bit too early for such an undertaking, upon drying, a few red seeds popped out and even more exciting is the fact that a few proved to sinkers. Whether or not the seeds represent backcrosses to other grandifloras in the garden or are the result of self-pollination will be determined as the potential progeny are evaluated next year. Another plant I had never seen or even had heard of was the 'Calla Leaf' form of *Magnolia grandiflora*. This plant has the curious habit of forming strange, calla lily flowers—like growths from the underside of the leaf blades near the apex of the leaf (see photo). Not exactly ornamental, but certainly thought provoking—what sort of genetic anomaly would cause a plant to develop such a bizarre trait?

Magnolia virginiana var. *australis* 'Green Shadow.'

After leaving Larry's garden, we headed east to Winchester, Tennessee to tour Jackson Nursery and Shadow Nursery. We were, again, treated like royalty upon our arrivals at each destination. Ray Jackson showed us a new cultivar of *Cercis canadensis* called 'Rising Sun,' an aptly named tricolor form of this utilitarian plant. We were also shown a few variegated forms of *Nyssa sylvatica* that Ray found and is evaluating in his fields. Without a doubt, these plants will make excellent *Magnolia* companions as they are released to the trade.

At Don Shadow's nursery, we were overwhelmed with all things *Acer* and *Magnolia* as well as a rare trip to see the narrowly distributed *Cotinus obovatus*, commonly referred to as American Smoketree or Chittamwood. One of the primary reasons for visiting Don was to see and photograph the original tree of *Magnolia virginiana* var. *australis* 'Green Shadow' (see photo). We were not disappointed. This tree stands right next to his office and is a 30+ft (9+m) tall emerald green sentinel, ripe with scarlet seeds and pushing another flush of flowers. The plant has a very pleasing upright-oval habit, is densely clothed in matte-green foliage, and branched to the ground. It is a far cry from the open shrubby forms of var. *virginiana* commonly grown in the north, and it is, perhaps, hardy enough to be trialed throughout the north. Don also showed us a Roundleaf form of var. *virginiana* that he planted in the 1960s (see photo on next page). The plant is a multi-stemmed, broad-spreading shrub only 15ft (4.5m) tall and wide. Don let us collect seed and indicated that seedlings he

Magnolia virginiana var. *virginiana*, Round Leaf form.

has grown in the past have come nearly 100% true to form. Unfortunately, most of the seed collected proved to be floaters. Hopefully the few sinkers will germinate.

In Mr. Shadow's container nursery we were treated to even more delights. We were shown plants of the new *Magnolia virginiana* var. *australis* 'Perry Paige' Sweet Thing™ selected at Sleepy Hollow Nursery in Tennessee. Although still not well known, this very compact form of the species could become quite popular as time goes by. The original plant is only 8ft × 8ft (2 × 2m). Additionally we were shown a seed strain of var. *australis* called Appalachee. I had never heard of this before, but was given a plant that will be evaluated with next years seedling crop. The plant appears to have very glossy, narrow foliage and did not appear to be too different from the forms of var. *australis* from the Florida Panhandle that we would see later in the trip.

We left Winchester late in the day on our way to Atlanta, at this point completely exhausted from the rigorous schedule at the beginning of the trip. We visited with an old friend of mine who works as a horticulturist at the Fuqua Orchid Center at the Atlanta Botanical Garden (ABG) propagating native terrestrial orchids (also another passion of mine). We were given a be-

Habit of one of the Dodd Littleleaf forms of *Magnolia virginiana* var. *australis*.

hind-the-scenes tour and saw many rare, one-of-a-kind plants as well as some of the most complete plant collections I have ever witnessed. Never having been to the ABG, I can honestly say that I cannot wait for another opportunity to visit.

Heading out of Atlanta, we made our way southwest to the Mobile, Alabama area, hot on the trail of the Littleleaf forms of *Magnolia virginiana* introduced many years ago by Tom Dodd II (see photo). Apparently, there are five cultivars of the plant that was originally selected and are all named after rivers of the Gulf coast, and none of them are well-known. They are known as 'Coosa,' 'Perdido,' 'Appalachi,' 'Cahaba,' and probably the most well-known, 'Tensaw.' I contacted Dodd and Dodd Nurseries before the trip but was not able to get much information on their wild origin other than the fact that they had a few of the plants growing on the nursery grounds. I was not sure whether they didn't want to tell me where they came from or whether the plants were gone. That being said, I did not have the greatest feeling about our upcoming visit to the nursery.

When we arrived at the nursery our attitudes changed completely. We were greeted with the same warm southern hospitality that we had been shown previously. Right outside the office were trees of the Littleleaf forms that had grown to maturity and were certainly not what we had expected. There stood three trees, all about the same size, measuring about 10–12ft (3–4m) and only about 4–6ft (1–2m) wide. The leaves have remained quite small and at first glance, the plants appear to be a scruffy form of *Ilex opaca*. Without exaggeration, the trees look like something out of a Dr. Seuss book. Tommy tells us that the plants flower on a yearly basis, but that little to no seed is ever set in any one season. We comb the trees for fruit and find a

solitary seed. Surprisingly, when float tested, the seed sank! Time will tell if it will, in fact, germinate.

Tommy proceeded to tell us that his father collected seed from plants in the vicinity of Bayou la Batre, Alabama and suggested that we start our search there. Before we leave on our quest, Tommy gave us a tour of the nursery, the plantings made by his father, and finally his home. Among the plantings made by his father, there are a few *grandiflora* × *virginiana* hybrid seedlings that were selected in the vicinity of Griffin, Georgia. Two of them were intermediate in appearance and, fortunately for us, one of the plants (the one I thought was the nicer of the two) had a few seeds ripe for the picking. Tommy let us collect the seeds and more than half of them were sinkers. There were many grandifloras in the vicinity, but the seed cones were still tight, while those of the hybrids were starting to open. Perhaps the delayed ripening is attributed to different times in flowering and the hybrid plants either self pollinated or crossed amongst themselves. Whatever the circumstance, 2009 is looking to be a promising year for *Magnolia virginiana* evaluations at Ohio State University. At his home, Tommy also showed us his mature woodland garden, and amongst the many treasures were several nice plants of *Magnolia ashei*, from which he let us collect a few seeds. Surprisingly, most of the seeds sank when submerged in water. Whatever it is about that region, it seems to be an ideal area for the cultivation of magnolias.

After leaving Tommy's home, we headed for Bayou la Batre in search of Littleleaf forms of *M. virginiana* growing in the wild. Tommy mentioned that he thought his father had obtained the original plants from seeds collected along the coast and thought that perhaps the parent plants did not have the smaller leaves of the plants in question. So, filled with adrenaline we headed towards the coast with utmost hope. As we perused the roadside, we saw and collected seed from several plants of *Magnolia virginiana*, but did not find a Littleleaf form. Perhaps one will turn up in the seeds we collected from the common form in the area. In this area, however, we did find the rare and exceedingly beautiful *Lilium catesbaei* (see photo on next page). Without a doubt, this exotic beauty should be cultivated by gardeners in the south.

As the day drew to a close, we dropped off our local friend who had accompanied us through our day in southern Alabama and headed towards Gulf shores and camped in a seemingly hurricane ravaged state park that was home to many broken longleaf pines and stump sprouts of *M. virginiana*. By way of flashlight we were able to locate the beautiful, but endangered *Conradina canescens*.

On our way from Gulf Shores to Pensacola, we drove through endless longleaf pine savannah with many excellent examples of *Magnolia virginiana*. While collecting seed from these plants, we stumbled across plants

of *Sarracenia leucophylla, Pinguicula* sp., and *Liatris chapmanii*. By this time, we were in the path of Tropical Storm Fay, so the next morning, with a desperate, almost scared, look in his eye, Scott decided to catch a plane home from Pensacola to avoid potential airline delays due to the heavy rain in the panhandle of Florida. Scott, having worked for the airlines for a number of years, was able to hop on any Delta flight with open seats. And just like that, I was by myself for the rest of the trip.

Heading east from Pensacola, I continued across the Florida panhandle, staying close to the shore all the way near to the environs of Eglin Air Force base. Along the shore were many plants of *M. virginiana*, but most of them had been badly damaged and were resprouting from past storms. There was not much seed to collect. Before heading north towards the air force base, I stopped to rest at Walton beach. There were several very large virginianas that were badly storm damaged, but still retained massive trunks. There were some interesting leaf forms here, with one form having broadly elliptical, but strongly acuminate leaves that were also very thickly textured. Unfortunately, there were no seeds on this tree, or any of the other trees at the beach. I took a herbarium specimen from this tree and marked its GPS coordinates and hope to return to it in the coming seasons.

I made my way north through the vast reserves of the Eglin Air Force base, only stopping a few times to do some roadside botanizing. By this time, I was experiencing bands of heavy rain from Fay. There were many interesting plants throughout the area, but not much in the way of *Magnolia virginiana*. That being the case, I pushed on towards Tallahassee, and along the way stopped by Torreya State Park to witness the rare *Magnolia ashei* in its native haunts. Upon pulling into the entrance, I got the feeling I was heading into a war zone because of the numerous downed limbs and foliage debris littering the roads.

Lilium catesbaei.

A park ranger there pointed me in the direction of the asheis and also mentioned that I might find some *Magnolia pyramidata* (*fraseri* var. *pyramidata*) in the area as well. As I ventured down the edge of the ravine, the

magnolias came into view as the silver undersides of the massive leaves flickered in the faint forest light. With every mention of *Magnolia* in the literature, there always seems to be an anecdote of their primitive origin, but it was not until witnessing these plants did this message ring true for me. The mist-shrouded forest had an uneasy feel about it, giving it a surreal air and, for a moment, I forgot about the extreme humidity and swarming, bird-sized mosquitoes. Later I would visit a private arboretum in Tallahassee that would solidify this *Magnolia ashei* as one of my personal favorites among the hardwoods.

The next few days were a bit of a wash as Fay released her fury in the Tallahassee area, but fortunately I had a friend to stay with and was able to lay low while the worst of the rain passed through. Most serendipitously, at a brief visit to my friend's mother's house, we ventured through the swamp behind her house and were able to collect a good bit of seed from the most massive trees of var. *australis* I have personally ever seen. In this case, Fay paid us a favor by breaking fruit bearing limbs that we would never have been able to reach otherwise. The trunk of one of the trees was large enough in diameter that I could not even wrap my arms around it. Many of the seeds proved to be sinkers.

Following a tip from a botanist friend in Tallahassee, the next day I headed to the environs of Apalachicola National Forest to the area of Sumatra, Florida. Not only was I able to collect seeds from a beautiful, finely textured narrow leaf form of the species, but was also treated to the most spectacular displays of *Sarracenia flava* imaginable (see pho-

Magnolia virginiana var. *australis* flanked by *Sarracenia flava* in Apalachicola National Forest near Sumatra, FL.

Liriodendron tulipifera f. integrifolium.

to). In one area the neon yellow pitcher plants grew along the road's edge, flanking the deep green of *Magnolia virginiana*, providing a memorable scene and a bevy of photographs. Having hiked in remote places throughout the world, I can say without hesitation that the forest proved to have some of the most arduous hiking and ravenous mosquitoes to be found anywhere. If you plan to visit the area, bring a large supply of DEET and a pair of hip waders.

That night on the shores of Lake Seminole was one of the wettest I have ever spent in a tent, but my Hilleberg withstood the downpour, and I awoke dry and ready for my next appointment. That day I met with *Magnolia* enthusiast, Gary Knox, from the University of Florida research station at Quincy, Florida. Gary has regaled the Magnolia Society of his *Magnolia* trials in past issues of the *Journal* and I was eager to see his evaluation plots and to talk magnolias with a fellow Society member. The Florida Gulf Coast climate can accommodate some plants that would likely never grow outdoors year round in Ohio, and I was treated to such delights such as *M. vir-*

giniana 'Aiken County SC,' several former manglietias and michelias, and even some small plants of the elusive *Magnolia delavayi*.

Gary was most generous with plants, nearly filling up the back of my truck, and providing me with notable members of the *Magnoliaceae* that will be trialed in central Ohio, although species of known tenderness will be used only in pollination experiments with *Magnolia virginiana*. Among the notables are *Magnolia macclurei*, *M. figo*, and the intriguing *Liriodendron tulipifera* f. *integrifolium* (see photo on previous page).

At this point, I was able to call this portion of the collection expedition a success, and so, turning north, I made my way towards Ohio. With ample time to reflect on the events of the previous ten days, I could not help but be overwhelmed by the sheer generosity of everyone that helped along the way. In almost all instances, everyone that helped was a complete stranger, and in the end, many new friends and contacts were made, lending a personal and enduring feel to the trip. Many thanks to all involved.

Peter Zale, a graduate student at The Ohio State University, working on building an ornamental plant breeding and development initiative centered on *M. virginiana*. He is currently evaluating 1000 F1 progeny of *M. virginiana* var. *virginiana* and also 55 wild accessions of both var. *virginiana* and var. *australis*. Peter will continue to obtain and evaluate as many accessions of *M. virginiana* as possible, performing priogeny and genetic tests and making crosses (pollinations) between them *en route* to getting his PhD in plant breeding. Dr. Dan Struve is his advisor and Professor of horticulture at Ohio State University.