

Cultivation of eleven hardy Asian evergreen magnolias in southeastern US: An update

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This report is the third in a series of articles I've given on this subject over the past seven years. The first, "Variety in Evergreen Magnolia II" which was published in Fall 2004/Winter 2005 edition of *Magnolia*, was a compilation of preliminary results in the cultivation of 29 evergreen magnolia species (including the North American, *M. tamaulipana*) primarily in my garden, Magnolian Grove Arboretum (MGA) in western Pickens County, South Carolina, as well as to some extent in other gardens, mostly in southeastern US. Three years ago, I wrote another *preliminary* report, "Notes on the cultivation, morphology and nomenclature of eleven hardy Asian evergreen magnolias" which was published in the RHS *Rhododendrons, Camellias and Magnolias Yearbook* (2008). In that report the scope was reduced from 29 species to just 11 in order to focus exclusively on Asian evergreen magnolias, and more importantly, only the ones that demonstrated sufficient hardiness to be considered established and thriving at MGA and in other gardens of the Southeast. [In the 2008 report I excluded discussion, as I do here, of the long established *M. figo* and *M. ×foggii*, since these two taxa already have had a long and well-known record of cultivation in the Southeast.]

Now with three or four years of further evaluation, mostly in the same garden, this report provides a detailed update on the performance of eleven hardy Asian evergreen magnolia species - four from section *Michelia*, five from section *Manglietia* and one each from sections *Gwillimia* and *Gynopodium* - at MGA and other gardens in the greater Southeast. MGA is located more or less on the border of USDA zone 7b/8a just south of the Blue Ridge Mountains near Clemson in western South Carolina. Our annual coldest temperature averages about -10°C (13°F), but temperatures at or slightly below -18°C (0°F) have occurred two or three times in the past 50 years. Summers are warm with the average daily maximum and minimum for July being about 32°C (90°F) and 20°C (68°F). This temperature profile is very similar to what is experienced along a line from Norfolk, Virginia; Raleigh, North Carolina; Atlanta, Georgia, to Birmingham, Alabama. However, our proximity to the mountains results in an average of 60 inches annual rainfall, which is somewhat greater than the average totals for those cities.

Magnolia maudiae

In cultivation *Magnolia maudiae* forms a rounded, slightly open tree of about 9m (30ft) in height. It blooms here in early February, but sometimes as early as late December or January if a string of abnormally warm days

occurs. The pure white, nine-tepaled flowers can be fairly large – sometimes to 15cm (6in) in diameter when opened flat – and have a pleasing fragrance reminiscent of something between daphne and gardenia, but even more savory. Fairly young trees, just 1m (3ft) tall, can produce blooms. Leaves are slightly leathery, of oblong shape, with short acuminate to blunt apices and mostly obtuse bases. Leaf backs are slightly glaucous, which imparts a superficial resemblance to *Magnolia virginiana*, but unlike that species, *M. maudiae* has little or no visible stipule scar on the leaf petiole. Most importantly, *Magnolia maudiae* can easily be separated from the other michelias presented here in that all parts of the plant appear to be completely glabrous, although with a hand lens, a few minute rufous hairs can sometimes be seen on the apices of flower buds.

M. maudiae is arguably the most ornamental magnolia presented here; however, its wintertime blooming season means that it will always be problematic in much of southeastern US and in other areas as well. Unlike other winter-blooming magnolias such as *M. zenii*, whose open blooms can remain undamaged even after several degrees of frost, the tepals of *M. maudiae* are intolerant of even the slightest frost. Given its wide distribution in southeastern China, from Zhejiang and Fujian provinces in the east to Guangxi and Guizhou in the west, one would think there would be enough natural variation for later blooming individuals of *M. maudiae* to be found and subsequently introduced into cultivation. Thus far, however, that seems not to be the case.

Because of this acute sensitivity of its flowers to frost, *M. maudiae* will likely have limited ornamental potential in most parts of the Southeast. However, in areas where both the severity and frequency of winter freezes are reduced, such as along the Atlantic coastal plain of the Southeastern states and the Gulf and Pacific coasts, *M. maudiae* will probably outperform any of the magnolias discussed here. In the meantime, breeders should consider crossing *M. maudiae* with later flowering section *Michelia* species such as *M. laevifolia* and *M. foveolata*.

Magnolia cavaleriei* var. *platypetala

Known previously as *Magnolia maudiae* var. *platypetala*, this taxon has been more fittingly reclassified as *M. cavaleriei* var. *platypetala* by Xia Nianhe and Hans Nooteboom in *Magnoliaceae in Flora of China* Vol. 7 (Xia et al., 2008). Probably both *M. cavaleriei* and *M. maudiae* are closely related, but *M. cavaleriei* differs from the glabrous *M. maudiae* by its silvery to red-brown appressed pubescence on young twigs, leaves and buds; while *M. cavaleriei* var. *platypetala* is further distinguished from typical *M. cavaleriei* by its smaller leaves and mostly 9 (rather than 12) tepals. The flowers are similar in form and fragrance to those of *M. maudiae*, but the fragrance is

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Blooming in February, *M. cavaleriei* var. *platypetala* brightens up a drab midwinter day at MGA.

less powerful and the flowers slightly smaller in plants that I have seen. Interestingly, the native range of *M. c.* var. *platypetala*, which extends from western Hubei to northeast Guangxi, is positioned farther to the north of *M. maudiae*'s distribution, suggesting that it would be more cold-hardy than that species. And that indeed appears to be the case. In fact, during the recent MSI meeting in Ont-

ario this past spring, we saw one 2m (7ft) tall plant surviving happily in the garden (probably for several years) at Happy Rolph's Bird Sanctuary along Lake Ontario in St. Catherines, Ontario, Canada (zone 6). Another plant prospered for a few years in Matt Strong's garden in Overland Park, KS (zone 6), only to later succumb from rodent girdling.

Curiously, even though *M. c.* var. *platypetala*, like *M. maudiae*, is also a February bloomer, its flowers are not always adversely affected by freeze and frost here. Conceivably, the hairy flower-bud bracts provide better winter protection than the hairless bracts of *M. maudiae*.

Another advantage of var. *platypetala* is that at least some individuals occasionally produce a second bloom in late summer or even again in autumn. This has been the case here at MGA as well as at South Carolina Botanical Garden. So in years where the February blooms get ruined by a freeze, the plant may have a second chance to perform later on in the year.

Magnolia foveolata

Though most of the michelias seem to bloom too early in the season, a few do not – and one of these is *Magnolia foveolata*. This mainly April-blooming species is native to a vast area of South China: from Guangdong in the east to Yunnan in the west, while ranging as far north as Hubei and south as Hainan; and even into northern Vietnam.

Probably the most significant ornamental attribute of this species is the striking indumentum covering the backsides of the thick, glossy leaves, as well as twigs, buds, and petioles. This abundant appressed indumentum

is displayed in varying hues of gold to copper and silver, sometimes all three colors being expressed simultaneously on various parts of the same plant. And unlike the more felt-like red-brown indumentum of *Magnolia grandiflora*, the glistening indumentum of *M. foveolata* literally shimmers in the sunlight. Sometimes the whole tree appears to be sprinkled with gold dust. In addition to all that, we also have in *Magnolia foveolata* a michelia that blooms late enough in the season to reliably produce undamaged flowers here in southeastern US. The 9- to 12-tepaled flowers of *M. foveolata* are mostly pale yellow (RHS Yellow Group 3C) to creamy white, and are distinctly cup-shaped after initially opening from a globe-like poise in which the gynoecium protrudes at the apex. The flowers appear to be about 8-10cm (3-4in) in diameter even though individual tepals can measure up to 7cm in length. The long, red-filamented stamens enhance the beauty of the flowers, while the light flower fragrance reminds me of the fresh smell of sliced (canned) pears on a fruit salad.

Unfortunately, *M. foveolata* is still difficult (or impossible) to find in the retail trade in North America and as a result, few plants are to be found in cultivation in the Southeast. Here at MGA our largest and most successful accession of *M. foveolata* is the cultivar 'Shibamichi'. Received as a gift from Barry Yinger in 2006, this handsome plant is now 4m (13ft) tall and for the past



four years has been flowering reliably in April, then again – but less prolifically – from August into September. This year it even produced a fruit as a result of Kevin Parris' hand pollination, using *M. laevifolia* pollen.

M. foveolata 'Shibamichi' bloom is enhanced by the rich copper-backed foliage in Figlar's arboretum.

It grafts easily on rootstocks of *M. ×loebneri*, *M. acuminata* and *M. maudiae*, and amazingly, grafted plants often bloom the following year. But even if *M. foveolata* weren't ever to flower, the magnificent foliage and scintillating golden indumentum would be enough to justify its position in many a zone 7 garden. It should be noted that plants of *M. foveolata* originating from the southwesternmost parts of its range (i.e., SE Yunnan or northern Vietnam) will likely be far less cold hardy. In recent trials at MGA with *M. foveolata* collected from the Sapa region of northern Vietnam, the plants easily killed to the ground when temperatures reached -7°C (20°F).

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***Magnolia laevifolia* (*Magnolia dianica*)**

Thanks to the excellent contributions to this journal by Glyn Church (2005), Tony Avent (2006) and others, most of us are now quite familiar with *Magnolia laevifolia* (formerly referred to as *Magnolia dianica* and before that, as *Michelia yunnanensis*). I think it can be said with great deal of certainty that this species, with its beautifully formed, sweetly scented, petite flowers on a small-leaved evergreen shrub, has the greatest commercial potential for ornamental horticulture of any of the magnolias discussed here. Like *Magnolia foveolata*, *M. laevifolia*, has the dual advantage of being both later blooming (usually from late March to the end of April here in western South Carolina) as well as cold-hardy (perhaps to colder parts of USDA zone 7 to warmer parts of zone 6). Along with those advantages, selected individuals of *M. laevifolia* are often profuse bloomers, sometimes rivaling the bountiful flower production we usually see in *M. stellata*; while other cultivars are so compact and dwarf that they can be maintained in the landscape at 2m (7ft) or less in height. In New Zealand, Mark Jury reports that "it is a reasonably common practice to raise seedlings [of *M. laevifolia*] and then sell them for hedging." (A. Jury, pers. comm.)

During the past decade, cultivation of *M. laevifolia* has spread fairly rapidly throughout the Southeast and, in a few cases, farther north. For instance, Allen Hirsh of Silver Spring, Maryland (Zone 7a), has been growing it satisfactorily for the past two years while Matt Strong of Overland Park, Kansas, grew one for three years before the plant surrendered to the infamous April 7-8 freeze of 2007 (NOAA/USDA, 2008). Our plants have become "floriferous mounds" of 2m (7ft) high and wide (I haven't trimmed them back yet) and seem to be fully at home here at MGA. But our zone 7b/8a SC climate is not a suitable test for this hardy species. Clearly, more cultivars should be tested northward along New Jersey and southern New England coast climates. Perhaps some of the more compact types could be successfully cultivated as foundation plants, similar to the way hardy camellias are grown in zone 6 climates.

Below is a partial list of cultivars with brief descriptions. Some of these may not be available in North America yet.

'Summer Snowflake' - Globe-shaped shrub to 2m (7ft) tall. Larger blooms and more prolific flowering than typical.

'Velvet and Cream' - A Jury selection with creamy white flowers and a longer blooming season than usual.

'Honey Velvet' - A seedling of 'Velvet and Cream' with even more creamy (soft honey tone) flowers and better leaf retention.

'Gail's Favorite' - Compact form, 2m (7ft) tall after 20 years, with larger creamy-white cup-shaped flowers. Glossy black-green foliage. A Glyn Church selection from Woodleigh Nursery, New Zealand.

'Snowbird' - Spreading habit rather than upright, flowers larger than typical, originating from Sean Hogan's Cistus Nursery, Portland, OR.

'Snow White' - A compact bushy selection from Greenhills Propagation Nursery, Australia.

Other cultivars from Australia and New Zealand include 'Fiona', 'Lady of the Night' (said to have superior fragrance), and 'Par Star.' *Magnolia* 'Blush', the first of several hybrids involving *M. laevifolia*, produces pink flowers. This Mark Jury hybrid has not yet been tested at MGA.

Curiously, extracts from *M. laevifolia* are used in the new Sarah Jessica Parker perfume, *Covet*.



Mark Jury's release *M. laevifolia* 'Honey Velvet'. (photo by M. Jury)

Magnolia insignis

Probably the most important of the hardy manglietia species discussed here is the red- or pink-flowering *Magnolia insignis*. In North America, it appears that most of these deeply pigmented flower forms had been introduced via Piroche Plants of Pitt Meadows, BC, in the 1990s. Perhaps this was an amazing stroke of luck, since *M. insignis* - with its extensive range which extends from the western part of south China, to NE India, Nepal, to parts of Myanmar, northern Vietnam and now Thailand - can just as easily produce creamy-white flowers, sometimes with only slight degrees of pink pigmentation on the outer tepals.

Plants of the 'Piroche Group' also seem to be more cold-hardy, easily remaining fully evergreen here at -14°C (6°F), while other seedlings of *M. insignis* were defoliated and/or suffered dieback in more moderate winters. The nine-tepaled blooms measure up to 15cm (6in) across when opened flat. When the flower buds first open (in the early evening), the greenish-red outer three tepals reflex downward and remain in that position, while the rest of the tepals open normally and usually provide a stunning display of three red and three white (or pink) tepals - a sort of bicolor effect not

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seen in most magnolias. Interestingly, the pink or red pigment is greatest at the apex of the tepals and least at the base, which is precisely the opposite of what is normally seen on pigmented tepals of subgenus *Yulania* species and hybrids. Occasionally, some individuals of the 'Piroche Group' produce entirely red-pigmented blooms. The flowers, which have a sweet melon-like scent, are the most fragrant of the manglietias described here.



M. insignis blooming in Silver Spring, Maryland. (photo by A. Hirsh) Inset: *M. insignis* MGA-355.

The largest of our plants, MGA-355, is now 7m (23ft) tall with a broad pyramidal shape with branch spread of 4.5m (15ft) at the base. The red tepals are close to RHS Red Group 53A to 53C. It flowers heavily from about May first through mid-June (sometimes flowering again in late August) and sets fertile fruit regularly. For the past three seasons Kevin Parris and I have been putting pollen of various subgenus *Magnolia* species on *M. insignis* MGA-355, as well as sending *M. insignis* pollen out to Dennis Ledvina, Bill Smith and other breeders. The results have been quite successful and many new and interesting hybrid seedlings are being carefully nursed, including *M. insignis* × *M. grandiflora*, *M. sieboldii* × *M. insignis* (the first bloom of which graces the front cover of this issue) and many others that you will be hearing about soon.

Possibly the only drawback to *M. insignis* is the foliage, which lacks the substance and glossiness of most other evergreen magnolias. Though still handsome in form, the evergreen *M. insignis* would likely never compete with a voluptuous *M. grandiflora* on the nursery lot, even with its unusual red-tinted blooms. Thus, its contribution to horticulture may ultimately favor its usefulness as a breeding parent. Still, *M. insignis* certainly deserves a prominent position in any collector's garden from zone 7a southward. Al Hirsh's garden in Silver Spring, Maryland (zone 7a), is one of those gardens. Next to an east-facing wall of his house grows a nearly 5m (16 ft) tall *M. insignis* that was acquired from Forest Farm in 2003. The fact that this plant has never frozen back and blooms reliably every spring suggests that *M. insignis* should be tried farther north into zone 6. However, plants of *M. insignis* collected from the southern parts of its range are likely to be more tender and should be avoided. Trials with *M. insignis*

from Sapa, Vietnam, have been killed to the ground at MGA when temperatures dipped below -7°C (20°F).

Magnolia conifera

Dandy named this species because of its fruits looking “not unlike small pine-cones.” This species was evidently named twice by Dandy, based on two separate collections, the first (1930) from Son Tay province, Vietnam (*Manglietia conifera*) and one year later (1931) from Guangxi province, China (*Manglietia chingii*). The two species were eventually merged, with some botanists retaining the latter taxon as *M. conifera* var. *chingii* based on its longer petioles and stamens. This species grows naturally from Guangdong province in southeastern China, westward to Yunnan and northern Vietnam.



A 9cm long peduncle supports a *M. conifera* var. *chingii* bloom at MGA.

When I first saw this plant in 1998 in Kunming, I was astonished at how similar in size, form and poise the flowers are to those of *Magnolia sieboldii* and the others in section *Oyama*. The 11-tepaled flowers are positioned on long 6-9cm (2.5-3.5in) peduncles, and thus, can be erect to nodding or pendulous. Surrounding the green gynoecium of these small white, 8cm (3in) blooms is a boss of bright red-purple stamens. Leaves are a lustrous dark green and thick – not too different from the consistency of those of *M. grandiflora* – which makes *M. conifera* easy to distinguish from a young *M. insignis* on the nursery lot.

Planted at MGA in 2005, our *M. conifera* var. *chingii* is now a 6.5m (21ft) tall, fairly narrow, pyramidal tree. The delicate pendant blooms appear in May and then sometimes (as in 2010) again in September. Our results suggest that *M. conifera* would be suitably hardy northward into zone 7. Regrettably, there are very few accessions of this species in private gardens or NAPCC collections outside of the west coast. There are no known cultivars of *M. conifera* and it appears to no longer be available in the nursery trade in North America.

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Magnolia kwangtungensis (*M. moto*)



M. kwangtungensis at Nankunshan Forest Preserve, Guangdong, China.

This magnolia had long been known as *M. moto* until it was determined (Liao and Xia, 2007) that an earlier published name, *M. kwangtungensis*, had been based on the same collections that Dandy had used for describing *M. moto*. Still widely referred to by its vernacular name "Mo-to", this handsome species is native from western Guangxi and southern Hunan provinces eastward to the coastal provinces of Fujian and Guangdong in eastern China.

Similar to *M. conifera* with its pendent *sieboldii*-like flowers, *M. kwangtungensis*, differs noticeably from the previously discussed species by the magnificent red-brown, villous indumentum that thickly covers the young twigs, buds, bracts, leaf midribs (abaxial side), petioles, and peduncles. Unlike the velvety, appressed indumentum of *M. foveolata*, the 1–2mm long hairs of *M. kwangtungensis* are perpendicular to the surface of the twig, bud, etc. Leaves are thinly coriaceous, obovate-elliptic in shape and measure about 18cm (7in) long by 6cm (2.5in) wide.

With its 6–12cm (2.5-5in) long peduncles Moto's nodding to pendant blooms are 9-tepaled, have similar red-purple stamens, but are somewhat larger - about 10cm (4in) across when open flat - than those of *M. conifera*. Dr. Clifford Parks of Chapel Hill, NC (zone 7b), was probably the first to introduce this species to the US in 1994 and has a tree of that original introduction, now nearly 10m (33ft) tall, in his collection. My plant has been in the ground at MGA for five years and, after a slow start, has grown to 4m (13ft) in height, but has yet to bloom. Gary Knox has been growing one at his home near Quincy, Florida (zone 8b), for the past 14 years. This tree, now 8m (26ft) tall and nearly as wide, has been blooming every May since 2002. Outside of being present in the two NAPCC collections at Atlanta Botanical Garden (ABG) and JC Raulston Arboretum (JCRA), Mo-to magnolia is conspicuously absent from most private and public gardens in the Southeast.

Those of us who attended the 2009 Magnolia Symposium in Guangzhou, China, in May 2009 had the rare privilege of seeing *M. kwangtungensis* in the wild at Nankunshan Forest Preserve in central Guangdong province. Of the seven magnolia species we saw there, none drew as much attention (and camera shutters) as Mo-to, with its twigs, petioles, buds and flower bracts all elegantly garnished with that extraordinary indumen-

tum. Clearly, this magnolia deserves a greater presence in Southeastern gardens. Hopefully that will be remedied soon. Mo-to would likely be hardy to zone 7b.

Magnolia yuyuanensis

This species is often lumped into *Magnolia fordiana* as it is in Magnoliaceae in Flora of China, Vol. 7 (Xia et al., 2008) and probably most of its early introductions into North America were labeled as such. However, many botanists maintain *Magnolia yuyuanensis* separate from *M. fordiana*, based on its more glabrous plant parts, the color of the ripe twigs (yellowish-brown vs. reddish-brown), the shape of the leaf apex (caudate or acuminate vs. acute), its longer peduncles, smaller size of its outer tepals and color of outer tepals (greenish and/or pinkish vs. pure white). Based on these differences (Kumar, 2006) and after examining specimens of these taxa grown in the US, I tend to agree.

With its white flowers and red-purple stamens, *M. yuyuanensis* is similar to *M. conifera* and *M. kwangtungensis*, but it differs in that the short-peduncled flowers are always upward-facing and are usually a bit larger, 13cm (5in) in diameter when open flat.

In the garden, *M. yuyuanensis* can be very effective because of its tropical-looking foliage. The upright and dense pyramidal form coupled with the long narrow leaves – often positioned in false whorls at the ends of the branches – is evocative of the mango tree (*Mangifera indica*). Native from northern Guangdong northeastward to Anhui and Zhejiang, *M. yuyuanensis* is the most northerly distributed evergreen magnolia in eastern China, so, not surprisingly, *M. yuyuanensis* has proven to be one of the hardiest of the Asian evergreen magnolias that can be grown in eastern North America. It has been growing for many years in the "Asian Valley" of the US National Arboretum (zone 7) while another has prospered for the past six years in Overland Park, Kansas (zone 6), with minor leaf burn occurring only after a few days of slightly below zero° F (-20°C). Of the several *M. yuyuanensis* that we have at MGA, our oldest, planted in 1997, is now 7.5m (24ft) tall and has been flowering every May since about 2002. The species is well represented in eastern NAPCC gardens (although some of these under the name *M. fordiana*) and it continues to be available in the trade. Likely hardy to zone 7a or 6a, *M. yuyuanensis* should be tried in protected sites of colder parts of zone 6.

[Note: Its close relative, *M. fordiana*, is occasionally marketed in the US, and I've been growing it at MGA since 2006. Though it has grown vigorously to 4m (13ft) in five years, the leaves burn slightly in years when temperatures get as low as -12°C (10°F). Besides being less hardy, *M. fordiana* has distinctly wider leaves and has a more open spreading habit than *M. yuyuanensis*.]

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***Magnolia changhungtana* (*Manglietia pachyphylla*)**

This rare endemic of central Guangdong province in China came to MGA via seed sent to me from South China Botanical Garden in 2001. Three seedlings were produced. Two were planted at MGA in 2003 and the other is now part of the NAPCC inventory at ABG. *M. changhungtana* is listed under the Red List status EN b2ab(I,ii,iii) (Cicuzza et al. 2007). For a time it was confused, and sometimes lumped, with *M. crassipes*, a similar but much smaller-growing species from Guangxi province.



The author poses with a bloom of *M. changhungtana* at South China Botanical Garden, Guangzhou, China. (photo by Anita Figlar)

M. changhungtana has performed outstandingly at MGA for the past seven years with one plant reaching 4m (13ft). It is similar to *M. yuyuanensis*, except the leaves are thicker and bigger (similar in size/shape to those of some *M. grandiflora*), and the flowers are much larger, to 20cm (nearly 8in) when open flat (see photo). With these qualities and demonstrated hardiness at MGA, *M. changhungtana* would appear to have significant potential for cultivation in the Southeast and beyond. Propagation is currently underway.

Priority will first be given to NAPCC gardens as these plants become available.

Magnolia delavayi

No need to further describe this long-cultivated and well-known species, but I've included it in this report, not because it has been proven widely hardy and established in the Southeast, but because finally at least some plants of *M. delavayi* are (precariously?) established here in the Southeast. After failing with my first nine attempts, I now have three thriving plants growing at MGA since 2006. One of these accessions even began to bloom in 2007 (just three years from seed). This year two plants, both 2m (7 ft) tall by 3m (10ft) wide shrub-like mounds, produced a total of 18 blooms. Three fertile fruits were collected, including one that was hand-pollinated with pollen of *M. virginiana*. Meanwhile, near Atlanta, plantsman Ozzie John-



M. delavayi in flower and fruit at MGA.

son has had similar success with a *M. delavayi*, which he planted around the same time; it too has been blooming each year for about the last four years. So the big question is how did these plants succeed? Considering the fact that *M. delavayi* typically grows around limestone outcroppings in its native haunts in Yunnan province, perhaps it has something to do the fact that both Ozzie and I had sited our plants next to the brick/mortar chimney bases of our houses – mine a north-facing spot and Ozzie’s an east-facing. Naturally, this situation will continue to be monitored closely.

Magnolia lotungensis



Male flower of *M. lotungensis* at J. C. Raulston Arboretum (photo by T. Alderton)

The last magnolia to be discussed here, *M. lotungensis*, is probably the only cold-hardy member of section *Gynopodium*. Being very closely related to the similar *Magnolia nitida* (and at one time considered a variety of it), *M. lotungensis* is distinguished from that species by its red-pigmented filaments (instead of creamy-white) and by the fact that *M. lotungensis* is an andro-dioecious species, which means that some individual trees produce reg-

ular bisexual flowers while others bear only male flowers (having tepals and stamens but no gynoecium).

As a cultivated tree, *M. lotungensis* gives us yet another very different, but striking, expression of ornamental presentation in a magnolia for the garden: thick, highly polished, petite, 5-10 cm (2-4in) long by 2.5cm (1in) wide, evergreen leaves in hues from crimson red (when young) to deep rich green. Moreover, this totally glabrous tree often has a strikingly columnar form, sometimes with a branch spread of only 1.5m (5ft) on a 6m (20ft) tall tree. Scattered throughout southern China from Guizhou and Guangxi provinces eastward to Zhejiang and Fujian provinces, *M. lotungensis* is largely sympatric with the range of *M. yuyuanensis*; thus, one would expect it to be nearly as hardy as that species. So far, the evidence suggests that it is. In Overland Park, Kansas (zone 6), one survived for five years before it was killed by that infamous April 7-8, 2007 freeze. Matt Strong reports that even when briefly exposed to slightly below -18°C (0°F), leaves were undamaged.

So far the biggest drawback to *M. lotungensis* has been its inability to flower as a young plant. In a previous report I gave on this species in 2007 (Figlar, 2008), I indicated that, “There are many plants in cultivation [in the

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Southeast]...but none has flowered yet, to my knowledge." Well, it turns out that in 2008 a ten-year-old plant of *M. lotungensis* growing at JCRA in Raleigh, NC, finally bloomed. According to Tim Alderton of JCRA, the tree is a male individual and is now about 6-7.5m (20-25ft) tall. In 2010, Dave Foss of Norfolk Botanical Garden reported that a similar sized, 10-year-old *M. lotungensis* finally flowered for the first time there as well. Interestingly, this flower proved to be bisexual, allowing the visiting Bill Smith to dab pollen on it! On the other hand, here at MGA our 9-year-old *M. lotungensis*, now at nearly 10m (32ft) in height, still has not yet flowered.

Although *M. lotungensis* is reported to be difficult (or impossible?) to root from cuttings, it grafts easily to understocks of *M. ×loebneri* and other members of section *Yulania*. For magnolia enthusiasts here in the Southeast, who have long wished they could grow the very splendid but tender *M. nitida*, *M. lotungensis* represents a major breakthrough in magnolia culture. Not only is it cold-hardy, but it just may be the hardiest magnolia discussed here, with the possible exception of *M. yuyuanensis*.

Summation

Obviously, we are still near the beginning of a long learning curve in our evaluation of these hardy evergreen magnolias from Asia (China and Vietnam). And there are many more to be tested, including the newly discovered *M. sapaensis* from northern Vietnam. As one can glean from these notes, while the results may look encouraging, it is disturbing that many of these magnolias are not widely available in the trade. In fact, some are probably even scarcer now than they were 5 years ago. It is hoped that this report will help to reverse that trend.

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