

Shrub Evaluation at Stephen F. Austin Gardens[©]

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INTRODUCTION

Stephen F. Austin (SFA) Gardens is a collector's garden, one that adds hundreds of new taxa each year to the plantings. Those that survive, perform well, and impress visitors make their way into propagation, promotion, and distribution. This program has introduced and promoted numerous plants through a wide range of print and electronic media, many of which have made an impact in the nursery industry, well been documented in past IPPS Proceedings.

STEPHEN F. AUSTIN GARDENS

Stephen F. Austin Gardens comprises 128 acre (58 ha) of on-campus property at Stephen F. Austin State University (SFA), Nacogdoches, Texas. Stephen F. Austin Gardens is the umbrella organization responsible for the activities, growth, and development of five gardens. Representing the oldest plantings, the 10-acre (4.5 ha) SFA Mast Arboretum was initiated in 1985 and includes the horticulture facility of the Agriculture Department. The Ruby M. Mize Azalea garden is an 8-acre (3.2 ha) garden of primarily azaleas, camellias, and Japanese maples that was dedicated in April, 2000. The 42-acre (19 ha) Pineywoods Native Plant Center (PNPC) was dedicated by Lady Bird Johnson in April 2000. The newest land resource, SFA's Recreational Trail and Gardens was dedicated in March 2010 and comprises 68-acre (31 ha) acres of mostly undisturbed forest. As the result of a donor with a vision, SFA Gardens is now home to the Gayla Mize Garden, a 8-acre (3.2 ha) spot in the SW portion of SFA's Recreational Trails and Gardens, which is directly across University Drive from the Ruby M. Mize Azalea Garden. This newest garden has allowed SFA Gardens to revisit shrub and small flowering tree evaluation in a big way. Stephen F. Austin Gardens enjoys four full time employees and two half-time employees, all funded by a combination of state and external grant funding.

Shrub evaluation at SFA Gardens is scattered across gardens and landscapes. In most cases, shrubs have been placed in what we hope is an appropriate environment. For the most part, the azaleas are under high pine canopy shade. Dry loving shrubs and small trees are placed in full sun, often on a mild berm to improve drainage. Not everything is perfect. In too many cases, shrubs brilliantly placed 20 years ago are now swamped by their neighbors. Many never reveal their potential, something we deal with by pruning, moving the plants to a better location, or just letting them languish. While the list of shrubs in the collection is huge, this paper focuses on those that have performed well and are already well known in the market place.

AZALEAS

Azaleas are major nursery and landscape shrubs in the South. Since the first plantings in Fall 1985, SFA Gardens has grown the collection to include over 8,000 azalea plants, which is comprised of more than 550 species and/or cultivars. That collection is documented (see website) and mapped. In the last decade, nothing has stirred the azalea industry more than the phenomenon of repeat blooming. While the major spring azalea bloom show at SFA Gardens is mid-March to mid-April, there have long been cultivars that bloom at other times of the year. Since the late 1990s, reblooming azaleas have grown from only six to over 76 cultivars that are part of various branding programs. First to impact the market and now with 28 cultivars, Encore[™] is the oldest brand, perhaps one of the best known brands in all of Horticulture. All begin with the word 'Autumn', which also imprints the plant into the buying public's mind. More recent participants include (1) the Proven Winners[®] brand, the BLOOM-A-THON[®] group (six cultivars); (2) Garden

Debut's® REBLOOM™ group (nine cultivars); (3) the Gardener's Confidence Collection, BLOOM-N-AGAIN®, which features 28 cultivars; (4) HGTV's Always Azaleas™ (five cultivars); and, finally, (5) JBerry Nursery's Dejavu Bloom™ series (five or six cultivars) which will be released in 2014. Our count tells us there are over 80 patented or trademarked azaleas, all touting reblooming, flower color, and habit qualities.

Deciduous azaleas are now a major focus at SFA Gardens and our goal is simple: to have the best collection of deciduous azaleas in the South. This is a more coherent group to work with and our collection now includes over 162 taxa on trial. They are characteristically truly fragrant, lose their leaves during the winter, and feature blooms before the leaves emerge. We have long promoted deciduous azaleas as worthy of greater use. Once fully established after several years, we find them to be very drought and heat tolerant and rarely devastated by the impact of lacebugs, a common pest in southern USA landscapes.

HYDRANGEAS

In 1997, SFA Gardens began an effort to collect a wide range of *Hydrangea* taxa and place them into a side-by-side trial. By 2005, we had accumulated over 250 taxa. With our usual enthusiasm, we measured plant height and width, number of blooms, size of blooms, and date of the bloom show. We used groups of three visitors to rank their top picks, came up with a "top ten", and thought we had the situation nailed. The best cultivars included 'Ami Pasquier', 'Mariesii Perfecta' (syn. 'Blue Wave'), 'Nikko Blue', 'All Summer Beauty', 'Frillibet', 'Europa', 'Goliath', 'Bläuling' (syn. 'Bluebird'), 'Preziosa', 'Beauté Vendômoise', 'Souvenir du President Paul Doumer', 'Bailmer', 'Endless Summer™ hydrangea', 'Blushing Bride', and 'David Ramsey'. Then in 2007, we listed those cultivars producing blooms later in the season: 'All Summer Beauty', 'Decatur Blue', 'Endless Summer', 'Penny Mac', 'David Ramsey', 'Blaumeise', 'Fuji Waterfall', and 'Twist n Shout'.

In 2006, a virtual flood of new cultivars entered the market picture, most patented and trademarked to one brand or another. In 2012, Michael Dirr provided a fine treatment of hydrangea breeding and advancement (Dirr, 2012a) and noted the increased pace of cultivar releases. At SFA Gardens, it became almost impossible to keep up and we decided to abandon the idea of evaluating new hydrangeas. We took a break. That is, until 2013, when Allen Owings of Louisiana State University, Hammond, Louisiana, and I decided to take a look at only the new cultivars. The plant evaluation program at LSU, Hammond, is a young one, and this garden is growing fast and smart. Allen and I knew we could secure plants from nurseries and plant an even-aged set of three plants at each location. That project is under way and it hasn't taken long to realize that the market is packed with new cultivars.

There are over 95 new cultivars of lace cap and mop head hydrangeas since 2006 that tout reblooming as a key attribute, and most fall under the umbrella of a major brand. Brands include Endless Summer® (Bailey), Forever & Ever™, Cityline™, Edgy™, Everlasting™ (Plants Nouveau), Mystical™, Hovaria® (Kaleidoscope®), Japanese Lady Series (Halo™, Frau™, and Angel™), Let's Dance™ (Spring Meadow), Next Generation™ (Ball Ornamentals), and Showstopper Hydrangeas™, a series promoted by HGTV which includes eight varieties. While it's hard to imagine the improvements, future breeding projects might include better flower shedding, more reblooming, and burgundy foliage color.

CRAPEMYRTLES

Another standard shrub and small tree that remains a major commodity in the southern USA is crape myrtle, purported to exceed 50 million dollars at the wholesale level. I remember when the Texas market only included red, pink, and white, period. The "red" was usually a cultivar called 'Watermelon Red' which was not red, but nearly so. Everything changed in the 1950s with the introduction of *Lagerstroemia fauriei* by John Creech. Many of those early seedlings are still with us. One patriarch, now named 'Bayou

View', rests on a Timberline Avenue in Shreveport and is a magnificent single trunk specimen with a 2.5 m (8.3 ft) circumference at breast height. This specimen is derived from the first seed distribution from the U.S. National Arboretum. 'Townhouse' and 'Fantasy' originated at the JCR Arboretum in Raleigh, North Carolina.

Many Texas horticulturists contend that Lynn Lowrey introduced the first hybrid, 'Basham's Party Pink', which was found as a seedling near a *L. fauriei*. This superseded the introductions by Donald Egolf of the U.S. National Arboretum's breeding program. That program resulted in 25 excellent introductions, the Indian Tribe Series, with 'Natchez' and 'Muskogee' the first introductions that are still fine trees in the landscape. Later, 'Chickasaw' and 'Pocomoke' were introduced as the first true genetic dwarfs. In Oklahoma, Dr. Carl Whitcomb, Stillwater, bred 'Whit II', Dynamite® crape myrtle (true red) and 'Whit IV', Red Rocket® crape myrtle (true red), which are both 3-4.6 m (10-15 ft) upright large shrubs, or small multi-stem trees. The last decade has seen a proliferation of cultivars under the ever increasing presence of branding. The compact Dazzle® series, a Filligree™ Series from Fleming's, an Early Bird™ series, a Barnyard Collection™ introduced through McCorkle Nurseries, and Plant Introductions, Inc. has introduced the Magic series, Coral, Plum, Purple, and Red. Purple Magic may be the best purple flower on the market. There are others. In 2012, Dirr provided a thorough and comprehensive treatment of the history of *Lagerstroemia* breeding to 2012 (Dirr, 2012b).

Since 2012, nothing has excited the crapemyrtle industry more than dark burgundy foliage cultivars. Since the introduction of *Lagerstroemia* Delta Jazz™ ('Chocolate Mocha') (PP 21,540) there have been 10 new cultivars enter the market place with burgundy foliage that lasts throughout the season. 'Chocolate Mocha' features small flower heads of bubblegum pink, an upright stature, and leaves best described as often cupped and less than attractive. In full sun, the cultivar is relatively free of disease, but in part shade conditions we have observed significant powdery mildew. The genes of this cultivar led to five Black Diamond™ cultivars (JBerry Nursery) with flower colors ranging from red to white to blush. To confuse things a bit, Ebony Crapemyrtles and Black Diamond Crapemyrtles are the same clones under different names. Black Diamond 'Pure White' is 'Ebony & Ivory', 'Best Red' is 'Ebony Flame', 'Blush' is 'Ebony Glow', 'Crimson Red' is 'Ebony Fire', and 'Red Hot' is 'Ebony Embers'. That was followed by the release of four dark-foliaged Delta™ cultivars by Plant Development Services, Inc. (PDSI), Loxley, Alabama. Plant Introductions, Inc. has introduced two patented dark-foliaged cultivars 'Midnight Madness' and 'Moonlight Madness'. These are in the first year of trials at SFA Gardens and at LSU, Hammond, Louisiana.

Crapemyrtles are a major commodity in the South. From very few selections in the market place, there are now hundreds to choose from. Cultivars vary in ultimate size, from small shrub to large tree, flower season and color, form, and, in recent years, foliage color. Nothing has boosted the crapemyrtle world more than burgundy foliage color. Future improvements might include dark foliage color on superior dwarf forms like 'Cherry Dazzle'. The recent advent of *Lagerstroemia* scale, beginning in McKinney, Texas, a few years ago, and now found in east Texas, Louisiana, and recently in Memphis, Tennessee, suggests a research focus on cultivars resistance and pest control. In November 2013, as part of a U.S.D.A. scientific exchange team, we viewed the impact of *Lagerstroemia* scale in Beijing, Nanjing, and Kunming, China. In some cases, plants were reduced to pitiful specimens. Scientists at one location remarked that they had long had the scale, but the impact had gotten worse in the last 2 or 3 years. Some even speculated that this was a new form brought in on USA hybrids cultivars.

OTHER SHRUBS WITH OPPORTUNITY

Most species of beautyberry are drought resistant and extremely durable deciduous shrubs. *Callicarpa americana* berries, a key fall and early winter feature, are available in various shades of dark purple, lavender, pink, and white. There are numerous purple-berry forms of *C. americana* and I suspect most are derived from local provenances with little to no selection work. However, there are several white-berry forms that are in the

trade (we have three) and there are differences in sun tolerance of the berries. For pink berries, there are two genotypes. One is the original 'Matt's Pink', a clone found in the Davy Crockett National Forest by Matt Welch, one of my former students. The other is a form found by this author along a roadside near Stonewall, Louisiana. They seem identical. When seedlings are allowed to fruit, we do find progeny with a good mix of purple and pink berried forms. We have a small trial of several hundred seedlings in full sun and hope to make an advanced selection in the next few years. *Callicarpa acuminata*, the Mexican beautyberry, features a larger more pubescent leaf and dark purple to almost-black berries. *Callicarpa dichotoma* 'Duet' is a superior variegated beauty berry released by the National Arboretum which has proven to be extremely stable and features very clean foliage. *Callicarpa dichotoma* 'Shiji Murasaki', Wine Spritzer™ beautyberry is a new variegated form. Several relatively unknown beautyberries are in our testing program. While I have long admired *C. kwantungensis*, it has not made a big mark in our garden. It features dark foliage with attractive white blooms and berries but has proven to be quite drought-sensitive in our east Texas climate. In the right spot, moist and part shade, it is a truly special plant. *Callicarpa longissima* is a rarely encountered drought-tolerant Asian species that has performed well at SFA Gardens. It is robust and becomes a large plant to 3 m (10 ft) in a few years featuring showy lavender blooms and white berries. We have just acquired *C. salicifolia*, another Asian species, featuring pink flowers, dark green glabrous foliage, and a small shrub that appears to have excellent habit. Breeding goals would be more showy blooms, denser branching, and better habit and, perhaps, fall color.

Vitex agnus-castus, the chaste tree, is a large shrub or small tree that has been much maligned across the southern USA for many years. The main feature is a summer bloom of bright blue, pink, or white blooms. The species is woody in the southern USA and an herbaceous perennial in more northern regions. We have six blue-flowered cultivars in our collection and find all of them to be good performers. 'Montrose Purple' and 'LeCompte' are most attractive. The first light pink-flowered variety, 'Salina Pink', was introduced several years ago by Greg Grant, the Research Associate at SFA Gardens. That cultivar was used as the foundation for finding the first true pink flowered form, 'Flora Ann', which is becoming more common in the trade. L.E. Cooke has introduced four new chaste tree cultivars, and one, 'Cooke's Pink'™, features pink flowers. At this stage, the plant looks very similar to 'Flora Ann'. Breeding goals would include dwarf forms, dense branching, and more flowers.

Ilex vomitoria 'Scarlet's Peak' is destined to become a standard across the South. Introduced by Dan Batson of Green Forest Nursery, this yaupon is classically columnar and reliably produces a crop of clean bright red berries. It is a great improvement over 'Will Fleming Upright', which is a male with no berry show and plagued with a rather unkempt habit as it ages. Since first encountering this plant several years ago, we have concluded that 'Scarlet's Peak' is destined to be a leader in the yaupon market. It's unique, offering a much needed columnar red berried shrub to the market, something that has not existed before.

Distylium, the isu tree, is perhaps best referred to as the evergreen witch hazel. Stephen F. Austin Gardens is home to several large specimens of both *D. racemosum* and *D. myricoides*. We have promoted and distributed for years an interesting variegated form, 'Mr. Ishi's variegated'. 'Vintage Jade', 'Blue Cascade', and 'Emerald Heights' are three recent introductions to SFA Gardens. They have similar habits, but vary in height from a few feet to 5 to 6 ft tall and wide. These cultivars are the result of Mike Dirr's breeding program in Georgia, crosses of *D. racemosum* and *D. myricoides*. They are adapted to the heat and dry times of SFA Gardens and provide a neat and clean non-invasive shrub useful as a screen or grouping where its foliage and form can be appreciated up close.

Dirr lists about 50 cultivars of *Loropetalum chinense*, Chinese fringe flower (Dirr, 2009). The burgundy foliaged cultivars 'Blush' and 'Burgundy' were the first burgundy foliaged cultivars introduced in the early 1990s. We have a fine old hedge trimmed and trained into quite striking large multi-stem shrubs. We have many specimens in the

gardens that are over a decade old and performing beautifully. When in bloom, few flowering shrubs can compare. The foliage is always attractive year round. They were remarkably resilient during the heat and drought of 2010 and 2011. We have lost a few large plants over the years due to a sudden death. In most cases, we've concluded that a drainage issue was the likely cause. In other cases, we did not know. Many of the older touted as dwarf or modestly dwarf are proving to be quite large with time. I have strolled under large old *Loropetalum* trees in China. Given a few hundred years, this plant can be a giant. *Loropetalum chinensis* 'Sparkling Sangria' is our most recent acquisition.

Edgeworthia chrysantha is a rarely encountered shrub that deserves greater use. This deciduous shrub typically reaches 2.4 m (8 ft) or taller and is usually slightly wider than tall. Large strappy leaves lend a tropical look to the plant. The key feature is winter bloom which occurs after the leaves have fallen. The foliage drops in mid December to reveal attractive bark and the large terminal flower buds. The flower buds open slowly from mid-December to early March and produce a fragrant show of pendent white or yellow flowers. The orange-red form, *Edgeworthia chrysantha* 'Red Dragon' (syn. 'Akebono') on the market is less fragrant. Mike Dirr reports that a hybrid of the large tetraploid form and the shorter diploid form exists and should be entering the market in the future. One obscure fact associated with the plant is a cultural one that I've observed in public gardens in China. The branches of *Edgeworthia* are very pliable and can easily be tied into "love knots" that continue to grow unabated. This is a favorite practice for young people in love and newlyweds.

Photinia serratifolia (syn. *serrulata*) is a bullet-proof large Asian evergreen shrub of various forms. There are only a few cultivars on the market. The species is extremely drought tolerant. We are distributing plants propagated from a clone we named 'Akin', named after Sherwood Akin of Sibley, Louisiana. A long time nurseryman, Sherwood maintained that this shrub had better form. After a decade, our specimen is very clean and dense, football shaped, 3.7 m (12 ft) tall and 2.1 (7 ft) wide.

There are many other shrubs we've come to admire after many years. After many years at SFA Gardens, we admire *Agarista* (syn. *Leucothoe*) *populifolia* as a durable evergreen shrub with its pleasant relaxed branch arching. It is best in masses or as a screen and individuals in the right spot can become quite large. *Agarista populifolia* 'Taylor's Treasure', Leprechaun™ leucothoe PP#13347 is a plant of more subdued stature and should be utilized more in our region. We find *L. axillaris*, a low growing evergreen shrub, a superior performer in part shade if there's a modest irrigation during the summer. In our garden, 'Jenkins Form' is a beautiful plant. We have long admired *Gordonia axillaris*, the fried egg plant. The new hybrids of *Gordonia*, *Schima*, and *Franklinia* via Dr. Tom Ranney, North Carolina State University, Asheville, North Carolina, appear particularly promising. While only with us a few years, they appear surprisingly vigorous and early to flowers in part shade conditions. There are advances in gardenias and SFA Gardens has a fine collection. True dwarfs with clean foliage and good habit are here. There's an ever-increasing list of viburnums in our garden and we've reached the conclusion they are durable in the landscape, charming in flower, and have good foliage interest. However, in our region, while many do well in the landscape, they have yet to gain a big market share in Texas. *Mahonia* 'Soft Caress' and some relatives appear well suited to the garden. Trips to China have led me to admire a huge range of *Mahonia* species in China, Mexico and Texas. These are durable evergreen shrubs with flower, habit, and foliage quality attributes. While there is good opportunity for bispecific hybridization and other breeding strategies, the genus remains relatively unexploited.

CONCLUSIONS

Dr. Charles Hall, Ellison Chair, Texas A & M University, has coined the phrase "hypercompetition" to describe the acceleration of branding, patenting, and marketing of new plants as nurseries attempt to gain market share. Many psychologists contend that more choices may lead to a poorer decision or a failure to make a decision at all. Hall has referred to this as a kind of analysis paralysis, the process perhaps leading to rational

ignorance (when the cost of educating oneself outweighs any potential benefits). Dilution may not be the solution. As a long ago Horticulture student at Texas A&M University, I was trained with the mantra that new selections should be evaluated in many locations over many years before introduction. The current flood of new plant materials is bewildering. Nomenclature issues are complicated, a topic well covered by Tony Avent in 2012 (Avent, 2012). There's a relatively new trend to rebrand, remarket, and reintroduce cultivars introduced long ago. I am slowly concluding that University and other woody plant trialing programs may not be as relevant to the nursery market place as we used to be. By the time a new cultivar succeeds or fails in trials, the industry has already made a major market push or totally left the scene when a newer, more exciting and more fashionable plant arrives on the scene. For the consumer, it may not really matter one way or the other. To keep excitement high, perhaps we need to offer 96 reblooming azaleas in the market place.

Maybe 10 major brands of reblooming hydrangeas really is a good idea. Perhaps the industry will benefit from presenting customers with 11 different black leaf crapemyrtle cultivars. In the short term, there are certainly profits to be made by nurseryman able to position themselves. In the long term, perhaps we are creating customers confused by the barrage of new plants. I have concluded there's no relief in sight, and, perhaps, the only course is simply to just sit back enjoy the ride. After all, our mission at SFA Gardens remains the same: educate, entertain, evaluate, and enlighten. That we can do.

Old age, believe me, is a good and pleasant thing. It is true you are gently shouldered off the stage, but then you are given such a comfortable front stall as a spectator." — Confucius

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