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**NEWSLETTER NO. 13, JAN 1995**  
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**NOTES FROM THE GARDEN**

A giant gift for procrastination led to this record tardy submission. This is the thirteenth update during the Arboretum's trek from 1986 to the present. My apologies and I will try to be better! Before I come up with a better excuse, let's dive into a busy newsletter. At this writing, I have just returned from a semester-long sabbatical September 1 - December 12, 1994, in Raleigh, North Carolina. I had the wonderful privilege of working along side Dr. J.C. Raulston, Professor of Horticulture and Director of the ten-acre North Carolina State University (NCSU) Arboretum. This was a terrific experience and will be detailed later. At the SFASU Arboretum, we have new theme gardens, new plants, new student projects and a lot to report.

**THE GREAT FLOOD OF '94**

A bold exclamation mark on the last year would have to be "the great Texas flood of '94." News of the event came to me in a rather 90's kind of way: E-Mail. I had just returned from two days in and near Charlotte, North Carolina, touring arboretums, botanical gardens and nurseries and visiting with horticulturists. I switched on the computer and started through a stack of e-mail messages. The first few were amazing in their brevity: a series of howling E-mails from students pecking a "WAAAAAAAAAH!", "HELLLLLLLLLP!", or "GOD SAVE US!" onto the screen and then pushing the send button. While these weren't exactly reassuring, the e-mail messages that followed began to shed some light on the matter. Colleagues, eager to rush bad news to me, wrote, "LaNana Creek Rules!", "SFASU Arboretum Moves South!", "Considering another vocation? Try Wetland Restoration!", and "Arboretum donates hundreds of ties to the Intramural Field!" Isn't it curious the great joy that some folks take in rushing disaster news to a recipient; good news always comes by ground transport? As the water began to settle, our situation became a little more clear. During all this, I was, of course, a model of peace and tranquility . . . while not happy, I felt we would come through just fine, lose a few plants, sure, but certainly survive. We did lose some special plants; most of these were young plants in a new sandy raised bed with no ground cover. Our *Corylopsis* collection was swept away and is now near or in the Gulf of Mexico. We lost a healthy *Cornus kousa* 'Milky Way', *Michellia skinneriana*, and a few uncommon, yet replaceable plants. We did have a number of trees bent flat to the ground. A couple of our National Arboretum hollies were swept all the way to Starr Avenue, rescued by students, dragged back to the shade house, cut back dramatically and reset in their original hole.

Gardens are amazing in their resilience. True gardeners are the same. In spite of floods, hail, bitter cold, waves of weeds, blistering heat, high winds, tornadoes, tree falls, and never-ending

droughts, truly passionate gardeners never give up. If anything, the great flood of mid-October, 1994, reinforced my opinion that flood plain gardening is a manageable challenge. You just have to understand what's involved. A mid-October, 1994, visit with Dr. Larry Mellichamp, Director of the University of North Carolina Arboretum at Charlotte, North Carolina, brought the message home. Larry is in charge of a wonderful ten-acre arboretum that took a heavy blow from Hurricane Hugo. Great numbers of huge overstory trees (pines, oaks, sweetgums) were blown down in the hundred mile per hour gusts. His initial reaction to the disaster was a giant wave of despair; the garden was finished, over, kaput. A \$17,000 FEMA disaster grant and six months of chain sawing and removing brush led to the realization that only two trees in the planted collection had been lost. The rest survived, albeit many missing a limb or two. In fact, Larry now feels that the event gave them some much needed sunlight and that the garden benefitted greatly in the long run!

Floods are a different kind of challenge. LaNana creek is no doubt meaner and faster than she used to be. Giant expanses of concrete in the city and "better drainage" in the watershed now force the stream to deal with more water than ever before. Channelized sections, like the one adjacent to the arboretum, speed water flow out of the city but increase bank erosion and increase problems downstream. Our strategy is basically a learning experience. Each flood teaches us something. Plants nearest the creek catch the greatest rate of flow. A planting of tupelos and mayhaws several years ago have long since been swept away. However, by promptly trimming lower limbs, trees can avoid catching a wave of vegetative trash (limbs and leaves) that builds and adds pressure. Trees and shrubs away from the main channel need only deal with submersion and the possibility of being "floated" out of the soil. The water itself is usually not a killer; it's oxygenated and over the tops of plants for only a brief period (less than twelve hours in all events, so far). Floods in mid-summer, when temperatures are high and plants respiring greatly, would not be so kind and sensitive plants might succumb to lack of oxygen in the root zone.

Structures are another problem. This latest event has reinforced the importance of tying garden pieces to the ground! Even with these kind of precautions, floods can shake up a garden. Our general procedure has been to drill rail road ties and drive three-eighths inch rebar about two feet into the ground. We still lost ties. Three feet would have been better. Benches and decks need even firmer anchorage. Deep set posts need concrete. The deck in the shade garden shifted a bit and floated on one side: a real challenge to repair. Thanks go out to all the Hort students, Ms. Shelley McReynolds (my teaching replacement during the fall, a Msc Horticulture graduate, and the graduate student wing of arboretum protection: Ms. Erin Smith, Ms. Susan Lindley and Jason Singhurst. After the flood, the students promptly took control of the situation and in the right order. Many of our young trees and shrubs had a strong lean; some were laid flat with roots exposed. Under the stubborn direction of Ms. Erin Smith, all of the trees were propped up, straightened and the soil mounded and tamped about the crown. All survived, even one a couple of eight-foot hollies floated all the way down to Starr Bridge; students retrieved, drug the poor specimen all the way back to the arb and popped it in the ground, right where we had planted it in 1988. Persistence?

## **THE DAYLILY GARDEN**

The daylily garden rests just to the south of the glass greenhouse and is a project of the SFASU Arboretum and the local chapter of the American Hemerocallis Society. In the fall, the



garden received a facelift: an attractive bronze plaque at the entrance and a new floor. The paths between the railroad tie framed beds were smoothed, a weed barrier was set and two inches of crushed granite was applied to the site. While a bit on the coarse side, the paths will be easier to maintain and we are working toward a trail of paving stones to "smooth" out the area. Thank you, Daylily Society! Delores Jones and Jean Barnhart have put in many hours developing this daylily showcase. Most important, the fountain that serves as the central feature in this garden is actually working. After one plumbing, pumping, and overflowing problem after another, Susan Elking and Mario Grabar have finally managed to massage the water feature into a dependable, albeit unusual, art piece in the garden. I'm actually starting to like the darn thing! While in North Carolina, I delivered several slide programs that included images of the arboretum; one image was of the fountain surrounded by beds of blooming daylilies, the wind creating a mist of water droplets in the background. I had one architect in the audience that commented after my program that the piece was interesting, eclectic, eye-catching and in immediate need of associated vegetation to achieve structural harmony. I'm not exactly sure what that means, but we intend to bring plants into that hardscape. A new feature is a pergola that separates the daylily garden from the herb garden. This feature, designed and built by students in a Landscape Plant Materials class, defines and divides these two special theme gardens. A recent addition is a line of *Magnolia grandiflora* 'Bracken's Brown Beauty', a dwarf southern Magnolia that we intend to keep sheared to form an unusual screen on the southern boundary of this theme garden.

## **THE HERITAGE GARDEN**

The long term goal of this garden is to display the old pioneer plants of Texas. While we often have departed from this mission and have left the character of the period to park a snapdragon or a petunia or two, I am determined to reconstruct the mood a little better in the future. I often receive questions about the collection of antique roses that grace this garden. The cedar shake roofed pergola is slowly being covered by six rambunctious old climbing roses. The six are 'Old Blush climber', 'American Beauty climber', 'Zelarine drontin', 'Cherokee', 'Eglantine', and finally, the most vigorous of the group a 'Lady Banksia' rose. Just to the east of the pergola is a special rose, 'Westmoreland', a gift from Jack Potter, Swarthmore Arboretum, Pennsylvania . . . planted into this garden three years ago. Brent Pemberton, Texas A & M University research scientist, has confirmed that this variety has shown great promise in east Texas and is going to be included in more extensive trials. We have been impressed by the durability and beauty of this fragrant, highly black spot resistant rose. We intend to propagate this cultivar and distribute it to interested nurseries and plant enthusiasts for testing.

## **IRIS GARDEN**

The Iris garden rests on the southeast corner of the herb garden and 1994 has been a great expansion year. Dr. Don Curtiss, a business professor and Iris enthusiast, has been slowly feeding the arboretum a great collection of Bearded Irises. We settled on this area for the collection because of the sharp drainage and its close proximity to our collection of Louisiana Iris. We used a thin foundation of sandy loam, adjusted the pH with limestone and applied a thin layer of bark mulch. According to Dr. Curtiss, Bearded Iris rhizomes appreciate being slightly exposed and should never be planted too deep. Here's the list of varieties (not counting about ten unknowns!):

Acapulco Gold	Edith Wolford	Parade
Aztec Treasure	Erleen Richeson	Peking Summer
Beautiful Vision	Everything Plus	Perfect Interlude
Beyond	Extravagant	Persian Berry
Bold Accent	Feminist	Pink Confetti
Breakers	First Interstate	Playgirl
Bride's Halo	Star Admiral	Pontiff
Broadway	Focus	Prancing Pony
Brown Lasso	Fresno Flash	Rancho Rose
Butter Pecan	Full Tiede	Ride the Wind
Catalyst	Going My Way	Riverboat blues
Chanteuse	Heavenly Angel	Ron
Chief Quinaby	Hindenberg	Samurai Warrior
China Dragon	Iris cristata 'Vein Mountain'	Santana
Chinese Treasure	Jesse's Song	Skating Party
Cinnamon Girl	Kilt Lilt	Smoke Rings
City of David	Lady Friend	Spring Dancer
Color Splash	Lake Placid	Stitch-n-time
Columbia blue	Land o' Lakes	Story book
Coral Sunset	Latin Hideaway	Sultan's Palace
Court Magician	Lord Baltimore	Theater
Creative Stitchery	Lullaby	Troll
Crowd Pleaser	Magic Man	Truly
Crown Sterling	Modern Classic	Twice Thrilling
Dazzling Gold	Nordic Kiss	Vanity
Dover Beach	Nuscat Ramble	Victoria Falls
Dusky Challenger	Orange Celebrity	Wedding Candles
Edge of Winter	Ovation	

\* Special Note: December 15, 1994, walk-through revealed significant losses (miscommunication with work-study workers led to overzealous 'lifting' to get plants out of the bark).

While it wasn't an iris, we did receive another special gift: the Amaryllis collection of Dr. Victor Bilan. Dr. Bilan, College of Forestry, passed away in 1993. SFASU lost one of the great professors on campus. An enthusiastic plant lover, Dr. Bilan was an adventurous horticulturist, always willing to try a new plant. As a matter of fact, I accused Dr. Bilan of being a "closet horticulturist." The collection was housed in the Forestry greenhouse and was in poor shape when we received it, having suffered from a few months of neglect and lack of a curator. Amaryllis, *Hippeastrum* spp., is a native of South Africa and a popular bulb in the south. The plant performs best in full sun to part-shade and needs a well-drained, fertile, moist soil. The plants repeat quite well in the south and can endure severe cold spells if well-mulched. The species needs an extended rest period during the winter for maximum performance. In Northern regions the bulbs should be mulched with pine straw to three or four inches. Amaryllis needs to be lifted and divided every four or five years and the side bulbs can be used to increase a colony. It is important to set the bulbs so that the crown is above the soil line; deep-set plants will not flower and may die. The plant is not



a fast grower and can take from two to three years to begin flowering. The primary interest in this plant lies in the showy red-to-pink-to-white-to-mottled blooms that appear in the spring, often before the foliage has emerged. We placed our collection just to the north of the Louisiana Iris and look forward to many years of showy blooms and distinctive garden foliage. Enjoy.

## THE DRY GARDEN

Still one of my favorite gardens, the Dry Garden rests on the southern fringe of the Art building and is home to many different dry-loving species. This is probably one of the easiest gardens to maintain. We tackle the area with a good weeding two or three times during the growing season, head back perennials when needed to force reblooming, sprinkle a little limestone over the garden to keep the pH up and that's about it. While many of the plants are from Mexico, central and west Texas, some of the plants come from more eastern regions of the country. For instance, *Conradian canescens* continues to be a stellar low-maintenance performer with a great wave of blooms in early March. This plant is being used in two locations in the Arboretum as an edging: at the front entrance bed of the shrub and color garden on Wilson Drive and in the "roadrunner" bed (named because of the two steel sculptures that dominate the plant colony). Other strong performance plants in the Dry Garden include the Mexican Buckeye, *Ungnadia speciosa*, a shrub-like tree that sports brilliant redbud-like blooms in the spring. Two oaks, *Quercus rhizophylla* and *Quercus polymorpha*, have now achieved scale and size. In addition to these known oaks, we are also growing a number of *Quercus* spp., essentially unknown species from Mexico's San Madre Oriental mountain range, a kind of "Mecca" for oak hunters. Near the west end of the Art building foundation planting is *Chilopsis linearis* 'Bubba', a Paul Cox selection from the San Antonio Botanical Garden that features magenta/lavender blooms that peak in early summer. *Sophora davidii*, with its heavy cloak of white blooms and ferny foliage, is showy but needs to be moved to a drier spot. We have a rare form of Texas mountain laurel, *Sophora secundiflora*, that enjoys grayish-green leaves, a gift of Doremus Nursery, Warren, Texas. Several *Penstemon* spp. have become well-established and provided quite a show this summer; 'Husker Red' looks to be the champion in terms of toughness and attractive foliage. We have a fastigiate oak from Mexico, a gift of Yucca-Do Nursery owned by John Fairey and Carl Schoenfield. The tree has reached about six feet and appears to be gaining strength after a very slow start. I really like Eve's necklace, *Sophora affinis*, a tree that sports graceful foliage, showy blooms and interesting form. Just to the west of the "Roadrunner" bed is a *Quercus oglethorpe*, an endangered oak from the dry panhandle of Florida. *Acer grandidentatum*, the Bigtooth maple, is doing well and our particular tree originated from seed collected from an area in central/west Texas known as "lost maples," so named because this extant colony is a long way from the same species out near Big Bend. The bigtooth maple is small statured and in its native habitat it is known for brilliant fall color; however, in the Arboretum, the species has not provided us with a spectacular show. Even more exciting from a botanical point of view is the good health of about a half dozen *Ilex decidua*, small trees from the mountains of Mexico that are counterparts to our very own native. They are grown from seed and we should be able to determine which are males and which are females in the coming year. Finally, one of the rares plants in the dry garden is *Chionanthus pygmae*, the dwarf fringe tree from Florida, reported to make a small bush in its native range.

## THE HERB GARDEN

The Herb Garden rests on the south side of the polyethylene quonset greenhouse and is a cooperative project with the Herb Society of Deep East Texas. The garden is framed with Vetiver, *Vetiveria zizaniodes*, a fragrant cousin of the familiar pampas grass so widely used in east Texas landscapes. The roots yield an oil used in perfumery. Native to tropical India, Vetiver is commonly grown in large fields and burned at season's end to simplify root harvest; the plant's roots are often woven into mats called khus-khus. Vetiver makes a fine landscape plant. Our plants, used as a screen, reach seven to eight feet tall each year and have no winter hardiness problems. Late last winter, rather than cut the plants back to the ground, we decided to burn the plants, a very popular move with the students that generated a lot of excitement during the event. The plants literally exploded into flames and quickly burned to the crown. Plants rebounded quickly in the early spring. The screen produced an inflorescence in the fall, probably due to the excessively mild fall and lack of killing frosts. We will be keeping a watchful eye on this development . . . ever vigilant if the plant decides to occupy new ground.

One interesting plant that generates a good response from our visitors is *Rosa* 'Petite Scotch Pink', a tight tiny-leafed rose that blankets itself with pink blooms in the spring. A gift several years ago from the NCSU Arboretum, we have been quite impressed with the plants performance in two white pots. The plant is certainly tough. As you might suspect, we have been known to forget watering every now and then.

## THE SHADE GARDEN

This area enjoyed only subtle development until the spring of 1994. Ms. Erin Smith, our newest graduate research assistant, and Shawn Geiman, an undergraduate senior in horticulture must be given much of the credit for planting many new plants and for tending the garden. A new twenty foot by twenty foot deck was added, tied gracefully into the slope and over the stream that drains the parking lot to the west. The new feature serves as an excellent outdoor classroom and has become popular with many folks who want to picnic, gather with friends, or just relax. In fact, we have had two outdoor weddings take place in the last few months, an exciting and natural event for any arboretum. We intend to capitalize on the natural beauty of this spot by planting larger colonies of showy plants. The undulating surface of the shade garden provides an interesting topography; the area is really fill dirt dumped from an excavation of the Ag pond many years ago. The soil is a bit on the heavy side and not the best to work with. With a little sand and bark mulch, however, we have carved out an interesting garden for rest, quiet contemplation, and cooling shade. The area has been an outstanding home for Impatiens, the foundation of color for this garden and excellent companions to the many woody and herbaceous plants that call this spot home.

The shade garden got a boost with a donation of 150 holly ferns from Mr. Wild of Martinsville, Texas. Holly fern, *Cyrtomium falcatum*, is a highly popular evergreen fern in our region. The plant needs a loose, organic, moist and fertile soil for best performance. While I have seen specimens over three feet tall, the plant normally reaches a foot or two. The plant can be divided about every three years. 'Butterfieldii', 'Compactum', and 'Rochfordianum' are reported cultivars that we do not have in the collection. *Liriope muscari* 'Silver King' has been a stellar performer. We have the following Japanese maples, *Acer palmatum*, cultivars doing well in this special garden: 'Takinogawa', 'Pendula Julian', 'Yezo nishiki', 'Ukon', 'Akaji nishiki', 'Oshio-beni', 'Shishio



improved', 'Deshojo', 'Shojo shidare', 'Beni crasa' (?), 'Seiryu', 'Ueno homare', 'Superbum', 'Ruby Lace', 'Katsura', 'Otohime', 'Harusame', 'Waterfall', 'Chitoseyama', 'Shigure bato', 'Japanese Sunrise', 'Pixie', 'Ukigumo', 'Itame nishiki' (?), 'Sanguineum', and 'Koshimino' (those cultivars followed by a question mark are possibly misidentified or drastically misspelled). Cultivars of Japanese maple in Asian valley, hundred yards to the north: 'Hikasayana', 'Nomura', 'Laceleaf', 'Sangokaku', 'Butterfly', 'Dissectum Crimson Queen', 'Oshio-Beni', 'Kingsville Variegated', 'Burgundy Lace', 'Shindeshojo', 'Orida Nishiki', 'Ogon Sarusa', 'Nuresagi', 'Hikasayama', 'Hogyoko', 'Tana', 'Bloodgood'. We have five cultivars of *Ardisia japonica*, a short-statured ground cover, doing well in shade. One, in particular, has been outstanding: *Ardisia japonica* # 804 (a Brookside Nursery number). A gift from the NCSU Arboretum, the variety is vigorous, glossy, and has steadily expanded to fill an area about six feet by six feet. *Magnolia macrophylla*, the bigleaf magnolia from Louisiana and states further east, has found a happy home in this shady spot of the arboretum. I measured one leaf that was twenty-seven inches long! *Kadsura japonica* 'Fukurin' and 'Chirimen' are two glossy leafed variegated vines that appear to have great promise in our region. *Acer japonicum* 'Green Cascade' and *Acer henryii* are two maples from Japan doing well. *Ilex decidua* 'Warren's Red', *Ilex serrata* 'Bonfire' and *Ilex* X 'Redsprite' are outstanding, well-adapted varieties. *Pachysandra terminalis* 'Green Sheen' is a glossy leafed ground cover that appears to have promise in our heat. Other interesting plants in this garden include *Ilex vomitoria* 'Fleming's Upright' and 'Lowrey's Bigleaf', *Aspidistra elatior* 'Asahi', *Malaviscus drummondii* 'Alba', *Ruellia* X 'alba', *Trachelospermum asiaticum* (NCSU), *Deutzia gracilis*, *Hydrangea quercifolia* 'Snowflake', *Styrax japonica* 'Pink Chimes', *Stewartia malacodendron*, *Rhododendron* 'Red ruffles', 'Coral Bells', and 'Dorothy Gish', *Mahonia fortunei*, *Itea yunnanensis*, *Acer capitata*, *Hammamelis* X *intermedia* 'Arnold's Promise', *Foresteria acuminata*, *Ilex verticillata*, and *Ilex opaca* 'Hawkings'. A new addition, *Acanthopanax sieboldiana* 'variegata' was rescued from a mountain of weeds in the perennial garden; how it survived, I have no idea, but survive it did. It's a gorgeous shrub with tiny thorns and creamy white leaf margins, I have high hopes for this plant as an outstanding candidate for shade and part shade gardens in Texas. No doubt about its stout disposition and stubbornness to survive. We proved that. Finally, Doremus Nursery donated five *Rhododendron* 'Amy' azaleas, a late spring bloomer named after Amy Carter.

## THE ELKING ENVIRONMENT

The rock garden just to the south of the daylily garden is the Master's of Fine Arts thesis exhibition of Ms. Susan Elking, a long-time friend and one of the hardest working young ladies I have ever met. Susan's thesis goal was to take one of the ugliest areas on campus, an unsightly and weedy drain, and turn it into one of the most beautiful spots in the arboretum. By any stretch of the imagination, she accomplished that goal. Most remarkable to me is the fact that she did this without a significant budget. Most of the materials were donated. One hundred and fifty tons (six rip-rap semi truck loads!) of limestone rock pavers were provided by Tom Crossett of Brazos Point, a limestone rock quarry near Cleburne, Texas. Trucking was provided at a greatly reduced rate. Railroad ties came from the Texas State Railroad, courtesy of Curtiss Pruett. Garden lighting was generously provided by Elliott Electric of Nacogdoches, Texas. Susan's partner in this construction project was Mario Grabar. Mario deserves a big thank you for all the work; there's no telling how many countless hours went into this tedious, back-breaking project.

The list of donors to this garden are numerous and include: 1) Mrs. Lucille Brewer, Cleburne, Texas, 2) Mr. Mario Garbar, Nacogdoches, Texas, 3) Mrs. Delores Jones, Nacogdoches, Texas, 4) Mr. Peter Loos, Conroe, Texas, 5) Mr. Alan Ward, Douglas, Texas, 6) Mr. Mark Norman, Douglas, Texas, 7) American Supply Co., Nacogdoches, Texas, 8) Atlas Tank Lines Co., Gary Wommack, Terminal manager, Dallas, Texas, 8) Bendco Bending and Coiling Co., Inc., James Friery, President and Ricky Friery, Vice President, Pasadena, Texas, 9) Brazos Point, Inc., Division of Centex Corp., Tom Crosset, Vice President, Hal Reichenau, Technical Service Representative, Fort Worth, Texas, 10) Doremus Nursery, Warren, Texas 11) Economy Metal Works, Houston, Texas, 12) Elliott Electric Supply, Inc., Bill Elliott, Owner, John Jasper, Lighting Manager, Nacogdoches, Texas, 13) Gray-Bar Service Co., Inc., Mario Grabar, Owner, Houston, Texas, 14) LaFarge, David Dyson, Cleburne, Texas, 15) Native Texas Nursery, Tim Kiphart, Sales Manager, Austin, Texas, 16) Texas Railroad Commission, Joe Barnard, Manager, Transportation Audit, Austin, Texas, 17) Southern Pacific Railroad, Nacogdoches, Texas, 18) TreeSearch Farms, Scott Reeves, Propagation Manager, Houston, Texas.

From the University side, support came from 1) Dr. Dan Angel, President, 2) Dr. Janelle Ashley, Vice-President, Academic Affairs, 3) Mr. James Harkness, Director, Physical Plant, 4) Mr. Bob Rogers, Grounds, 5) Mr. John Rulfs, Associate Director, Physical Plant, 6) Mr. Victor Shepherd, Transportation, Physical Plant, 7) Mr. Tommy Wells, Supervisor, Mechanical and Electrical Maintenance, Physical Plant, 8) Dr. Bill Long, Professor, Agricultural Mechanics, 9) Dr. Ray Worsham, Director, Intramurals, and 10) the SFASU Horticulture Club.

## **CLEARING THE NORTH WOODS**

Another project initiated since the last newsletter is the thinning of the dense north woods. This two-acre pocket is a privet-infested degraded forest. Shawn Geiman, Horticulture senior, is the central figure tackling this project with some valuable help from Bob Rogers in Grounds. While there are some outstanding specimen oaks, pines, river birches, sweet gums and one giant cottonwood present, the bulk of the forest is made up of willow, ash, tallow, thorny locust, Japanese honeysuckle, Smilax, and a heavy cover of privet. In our area of east Texas, four invasive exotics often find a firm foothold on disturbed land: Japanese honeysuckle, tallow tree, mimosa, and privet. Our goal is to eliminate these, keep the plants from returning and plant the area to our ever-increasing collection of rare, unusual and uncommon landscape plants.

## **THE "CHALLENGER MISSION" MONUMENT GARDEN**

The Telephone Pioneers of America approached the Arboretum in the Spring of 1993 about the possibility of placing a memorial monument dedicated to the memory of the seven astronauts lost on the Challenger mission. After a little discussion, the idea was accepted. The monument was dedicated in July, 1993, after a hasty design and installation. The monument is now framed by a quarter-moon railroad tie-framed bed featuring seven 6' beech trees. Having to plant in the middle of summer would never be my choice with any plant and a beech has a poor reputation for establishment unless sited properly. Weekly waterings saved the day and while growth in 1994 was discouraging, we should look forward to any interesting setting. We intend to "pleach" the beeches into a wall that frames the monument. Pleaching is the interweaving of branches to create a hedge



or arbor. The Bois d'arc beams that comprise the two garden benches in this area were taken from an old home spot over one hundred years old in Shelby county, Texas..

There are a number of interesting "natives of the southeast" plants in the collection: *Hamamelis X intermedia* 'Arnold Promise', three *Clethra alnifolia* varieties, a variegated *Liquidambar styraciflua*, and three *Ilex glabra* cultivars.

## **SABBATICAL TO THE NORTH CAROLINA STATE UNIVERSITY ARBORETUM**

The following is a quote taken from the NCSU Arboretum Update, vol. 8 (3): 1-2, a piece that notes the reasoning for selecting this particular arboretum as a spot to land for a sabbatical.

“When my university approved my request for a one-semester sabbatical, there was really only one place I wanted to go: The NCSU Arboretum . . . and for lots of reasons. The size, scope and academic budget realities of the NCSU Arboretum are very similar to my own. I felt the chance to work with Dr. J.C. Raulston and the NCSU Arboretum folks was an opportunity to jump at. I have long been convinced that, as far as new woody plants introduction programs go, J.C. Raulston has created a masterpiece worth emulating. I've always admired the terrific impact the NCSU Arboretum has on the economy of the state's nursery industry and the look and feel of North Carolina gardens. The distribution of rare, unusual and new plants far and wide is the benchmark of the NCSU Arboretum. A hand-in-hand approach with the nursery industry is really unparalleled in the U.S. It's different and it works. It's hard to explain how wonderful it's been over the years to get a surprise J.C. Raulston gift box of rare and unusual plants. The fact that so many are now outstanding specimens in the SFASU Arboretum makes the whole “Raulston idea” that much more dynamic. Now that nurseries and plant enthusiasts are finding their way to our garden for cuttings and ideas, I'm a believer. To be honest, there are no arboretums with the kind of “let's spread our plant wealth around” philosophy that the NCSU Arboretum has pioneered. The NCSU Arboretum makes it work. As far as I'm concerned, arboretums, nurseries and landscape contractors need to take a hand-in-hand approach to new plants, new landscape philosophies, and coordinated promotion strategies. Besides a Texas-sized truckload of exciting new plants, I plan to take back a fresh outlook, some real plans for the near future, and a long-term strategy for the SFASU Arboretum.”

Teacher, writer, philosopher, researcher, friend . . . J.C.'s grasp of woody plants is firmly founded on a passion to test a very wide diversity of woody trees, shrubs, vines, herbaceous perennials and ground covers. The NCSU Arboretum is a cornucopia of interesting, unusual and rare taxa . . . a hands-and-knees kind of garden - presented aesthetically with many special plant collections and theme gardens. The backbone of what makes this happen is people: Tom Foley, Assistant Director, graduate of NC State Horticulture, serves as the right-hand man to J.C.; Tom, directs 140 volunteers, sets up events, manages much of the correspondence, and handles daily disasters, crises, and details. Newell Hancock (Technician), is a long-term player at the Arboretum, having played a key role since the beginning of the Arboretum in 1975. Newell is in charge of the cultural care of the living collection in the Arboretum (9.7 acres), propagation, and record-keeping. Valerie Tyson (mapping and plant acquisition database), handles the difficult task of keeping track of all the wonderful plants that enter the test gardens. Catherine Knes-Maxwell is in charge of Development. There are others - student workers, interns, and, of course, volunteers. An active



garden volunteer core of 140 members is organized in curator roles and as docents (tour guides). The garden is a beehive of activity. There are twenty-three members on the Board of Advisors, representing the nursery industry, landscape architects and contractors, and university personnel. The current goal is to "Raise the Roof", build a horticultural education center, a building designed to hold offices, lecture rooms and the office of the Garden Clubs of North Carolina. A 1.8 million dollar capital campaign has just been successfully completed and a second phase is underway to raise another million to build the building, change parking and road access and move several old buildings to another location on the Horticultural Farm.

The sabbatical included visiting over thirty arboretums and botanical gardens, about that many nurseries, and racking in 1000 new slides. North Carolina is vigorous. The NC ornamental horticulture industry is very robust with great increases in sales in the past year. A healthy landscape design, installation and maintenance industry embraces diversity. The following is a list of some of the highlights of the trip.

UNC Bot Garden at Chapel Hill, NC. Must stop. Conservation ethic, herb garden is well-interpreted, a "prairie" that gets random fire treatments, a terrific educational center.

The Norman Beal Garden of 2324 New Benn Aveune, Raleigh, NC . . . private collector, keen plantsman, great garden layout on about two acres.

Attended several lectures by Dennis Wood in the School of Design. History of Design. Disturbing.

The private garden of Charlie Keith, Chapel Hill, NC. Unbelievable collection, orchard-like layout on twenty acres . . . excellent specimens of many rare taxa.

UNC Botanical Garden at Asheville, 151 Weaver Blvd and adj to UNC -Asheville campus (704-282-5190). Woodland garden, nature trails, some interpretation, excellent collection of natives. Educational center.

The North Carolina Arboretum, Asheville, NC. George Briggs, Director. The newest "giant" Arboretum in NC with a rather powerful name. There are 55 public gardens in NC, many of them arboretums and botanical gardens. This one is a 400-acre hills of NC Arboretum that receives outstanding state support. The visitor's center is worth the trip alone. Under development (for too many years), the gardens are limited to a small swath around the visitor's center. Horticulture facilities open to public and are state of the art. Many millions of dollars has gone into this project. NC Department of Transportation is building straight-off-the-interstate access. Expect ten million visitors per year once established.

NC Hill Country Experiment Station, Asheville . . . interesting collection around the Research and Extension Center main building. Two great horticulturists: Tom Raney and Mike Birr 704-684-3562.

Biltmore Estate, Asheville, NC. A must stop for those that enjoy getting a perspective on those of us who have no need for humility. The castle, the grounds, and the education of it all takes a solid

day.

Reynolda Gardens, part of Wake Forest University, Winston-Salem, NC. Tobacco money built the estate . . . now under a renovation plan. Terrific walled garden.

Greensboro Arboretum, Bicentennial Garden and the Bog Garden in Greensboro, NC. A real surprise. The Greensboro Arboretum, a county arboretum, displays plants for their landscape use: shrubs for full sun, shrubs for shade, small flowering trees, ground covers for sun, etc.

State Fair Grounds is the creative product of Tony Avent when he was in charge of the grounds. Now the proud owner of Plant Delights, a top mail-order nursery, Tony was a whirlwind of activity as a grounds keeper. While some might have been content to just keep the place mowed (after all, this is a state fair grounds), Tony chose to plant everywhere with a wide paintbrush. Lots of diversity, many, many rare specimens, great use of structures to find that special micro-climate that allows the growth of tender types, a must stop.

Participated in the annual distribution of plants to the "Friends of the NCSU Arboretum." Five hundred "Friends" lining up for thousands of rare plants, mostly in four-inch pots. Event began at 9 am; folks had started lining up at the gate at 7 am, and the whole event was over in 9 seconds. TV, news and lots of fun. Terrific.

Private garden of Edith Eddelman, Durham, NC, the designer and curator of the NCSU Arboretum perennial border and the designer of many borders. Spunky use of art, nothing wrong with humor in the garden. A busy, small yard that has to be seen to be believed.

UNC at Charlotte Arboretum and greenhouse complex. Director Dr. Larry Mellichamp has championed a really special program at the UNC at Charlotte. The ten-acre arboretum, seven of which are steeply sloped, forested and brimming over with an excellent collection of "natives and Rhododendrons." A real treat, the greenhouse complex is under the loving attention " The remaining three acres were a surprise. Intense, excellent paths and. has Visited the UNC at Charlotte Arboretum and greenhouse complex. Director Dr. Larry Mellichamp showed me around. Larry is Director of a ten-acre garden, seven of which is a natural area, steeply sloped and wooded, that features native plants and Rhododendrons - one of finest collections of Rhoddies in the south. The other three acres is very impressive, crushed gravel paths and a wide variety of Landscape plant materials. One of largest Liquidambar styraciflua 'Rotundilobas' is have seen. Other neat plants: Abies firma, Abies orientale, Dragon eye pine, others. Chinese garden has a neat moon gate and is very well done. Hugo in 1988 was a hard blow

Daniel Stowe Arboretum at Belmont, NC which is just a bit south and east of Charlotte (hwy 85, south on 273, west on 279, arb on left about a mile). Mike Bush, Horticulturist, Bill Steele, Director, and Larry Lineberger, their computer man.

The Zoological Gardens at Asheboro, NC. Virginia Walls is doing a terrific job as horticulturist for the hundreds of acres dedicated to this 1990's designed new zoo (910-879-7400). This may be the number one zoo in America when all the theme areas are in. Right now, North America and Africa

are almost complete. A "modern" zoo, the confinements are large, interesting, and well-interpreted. A Sonoran Desert and greenhouse conservatory exhibit featured many healthy southwestern plants that are also doing well in our very own dry garden.

Participated in all day NCSU Arboretum Board of Advisors (23 members) retreat, Camp New Hope, west of Raleigh. A facilitator, led the group through a series of discussions designed to discover what is really "special and unique" about the NCSU Arboretum and how can the board insure those attributes and qualities in the future."

**SandHills Horticultural Gardens**, SandHills Community College, 2200 Airport Rd. Pinehurst, NC 28374 (phone 910-695-3882). What a surprise! To be candid, I didn't expect the degree of class act horticulture before I visited the gardens. After all, this is a small community college with about thirty majors. However, the place is bubbling over with an exciting variety of exceedingly well-maintained theme gardens. The chief reason: Fred Garrett, Director of the Horticultural program and the Gardens, has doggedly spearheaded the garden's development with lots of help from outside-the-college funding. Patricia Joseph is curator of the endowed Ebbersole Holly Garden, perhaps the best collection of *Ilex* species on the east coast (over 400 taxa!). The place oozes horticultural enthusiasm and many unusual woody specimens have achieved scale and character. A must stop in North Carolina. Theme gardens include a Rose Garden, Conifer Garden, the Sir Walter Raleigh Garden, the Hillside Garden, the Fruit and Vegetable Garden, and the Desmond Native Wetland Trail Garden (the latter has an exquisite catwalk - a \$49,000 project). Twenty-three acres total with about half developed. Open every day. Designed, constructed and maintained by the Hort Program. The program has a new golf green and new emphasis is being placed on turf. The horticultural facility is comprised of three small glass houses and one polyethylene quonset greenhouse.

Attended my first International Plant Propagator Society conference, Athens, Georgia.

Tour of the University of Georgia campus led by Dr. Mike Dirr.

Bus to Georgia Botanical Gardens - tour by Dirr and then a reception, snacks and drinks.

Robert Lyons, Director of the Horticultural Gardens, Department of Horticulture, VPI, Blacksburg, VA 24061-0327 (phone: 703-231-5783, FAX 703-231-3083 and email relyons@vt.edu); Associate Professor in the Horticulture Program. Neat display garden, wide assortment of well-signed woody ornamentals.

Swanannoa Marble Palace and Sculpture Garden on Rt 250 about four miles from Waynesboro, VA. Part of the University of Science and Philosophy. 703-942-5161.

Colonial Williamsburg at Williamsburg, Va. Telephone: 804-229-1000 ext 2751.

Norfolk Botanical Gardens, Azalea Garden Road, Norfolk, VA (804-640-6879) (FAX 804-853-8294)

Monitcello. - near Charlottesville, Virginia, Highway 53, telephone: 804-295-8181. Eight dollars



admission. Jefferson's home with a view . . . fascinating trek into the mind of an analytical and philosophical founding father: great attention to clocks, writing, education, and, of course, agriculture. It is in the garden that Jefferson found the most peace and self-satisfaction. The grounds are exceedingly well-interpreted. Interesting quotes: "The Hyacinths and Tulips are off the stage, the Irises are giving place to the Belladonnas, as these will to the Tuberoses, as your mamma has done to you, my dear Anne, as you will do to the sisters of little John, and as I shall soon and cheerfully do to you all in wishing you a long, long good night," and, "no occupation is so delightful to me as the culture of the earth, and no culture comparable to that of the garden . . . But though an old man I am but a young gardener." The gardens served as a barometer for Jefferson to the seasons. His penchant for time, clocks, for recording everything, even included daily notes on temperature and windspeed. Jefferson's roundabout walking garden was unusual for the time, a kind of outdoor laboratory. He found the garden intimately balanced with the "workhouse of nature . . . clouds, hail, rain, thunder, all fabricated at our feet." The absence of formality is evident. Gone are the straight lines of clipped boxwood, an indication of Jefferson's interest in the latest, informal style of landscape design, which he had admired during his visit to English gardens in 1786. The gardens also served as a stage in which Jefferson interacted with his family and friends. It was in his garden that he felt most satisfied and happy. There are two main elements to his flower garden: 1) about twenty oval beds in direct proximity to the house, each with a different flower and the roundabout flower border. The gardens included the common and the rare. In fact, Benjamin Barton , a noted early American botanist, gave tribute to Jefferson by naming a rare, woodland wildflower in his name: *Jeffersonia diphylla*, the twinleaf. Barton wrote that the tribute was inspired by "Jefferson's knowledge of natural history . . . especially in botany and zoology (which) is equalled by that of few persons in the United States." Plants in the garden included sweet william, the double white-flowering poppy, the Columbian lily (*Fritillaria pudica*), the cardinal flower, tulips, hyacinths, and anemones. While the oval beds displayed great variety, he wished for more and in an 1807 letter to his granddaughter, Anne, he wrote, "I find that the limited number of our flower beds will too much restrain the variety of flowers in which we might wish to indulge, and therefore I have resumed an idea . . . of a winding walk . . . with a narrow border of flowers on each side. This would give us abundant room for a great variety." The flower gardens were not cared for by slaves, but by Jefferson's daughters and granddaughters, who were often assisted by an elderly slave. Ellen Randolph recalled the heyday of flower gardening at Monticello: "I remember well when he first returned to Monticello, how immediately he began to prepare new beds for his flowers. I was too young to aid him, but my sister was his active and useful assistant . . . The roots arrived, labelled each with a fancy name. There was Marcus Aurelius, and the King of the Gold Mine, The Roman Empress, and the Queen of the Amazons, Psyche, and God of Love, etc., etc., etc. Eagerly and with childish delight, I studied this brilliant nomenclature, and wondered what strange and surprisngly beautiful creations I should see rising from the ground. Then, when spring returned, how eagerly we watched the first appearance of the shoots above ground. What joy it was for one of us to discover the tender green breaking through the mould, and run to grandpapa to announce, that we really believed Marucus Aurelius was coming up, or the Queen of the Amazons was above ground . . . Then when the flowers were in bloom, and we were in ecstasies over the rich purple and crimson, or pure white, or delicate lilac, or pale yelllow of the blossoms, how he would sympathize in our admiration, or discuss with my mother and elder sister new groupings and combinations and contrasts. Oh, these were happy moments for us and for him!" Jefferson was mesmerized by all things horticultural. He occasionally took visitors on tours of his "pet trees," especially the recently

introduced species like the copper beech, mimosa, and ginkgo. At least five trees planted in his lifetime have survived: two tulip poplars, a sugar maple, a European larch, and a red cedar. Mulberry row, the plantation road lined with mulberry trees, was the center of light industry at Monticello. In 1796, there were seventeen buildings, including a stable, joinery, blacksmith shop, nailery, utility sheds, and dwellings for the slave and free labor force. Today, all that is left is a workmen's cottage, ruins of the joinery, and part of the stable. The vegetable garden was massive for the time, a two acre two football field long expanse on a sunny hillside bench terrace. There he cultivated over 250 varieties, including twenty varieties of English pea, believed to be his favorite vegetable. The Grove was another of Jefferson's early plans for the top of the mountain. He envisioned a pleasure ground where "the canvas at large must be Grove, of the largest trees trimmed very high, so as to give it the appearance of open ground." The essential American garden, he said, "may be made without expense . . . We have only to cut out the superabundant plants."

Special mail-order nurseries visited during the sabbatical:

**Camellia Forest Nursery**, PO Box 291, Chapel Hill, NC 27516 (919-967-5529). Catalog: \$2. Mei and David Parks, owners. One of my favorite specialty nurseries. Terrific germplasm from China via Dr. Cliff Parks, husband of Kai Mei and a professor in the Department of Biology at UNC, Chapel Hill. Probably the most exciting Camellia germplasm in the U.S. rests here. A recent expedition by Cliff Parks to south China promises all kinds of exciting plants.

**Niche Gardens**, 1111 Dawson Road, Chapel Hill, NC 27516 (919-967-0078). Kim and Bruce Hawks. Catalog \$3. Be careful with this catalog! It may be harmful to your budget. A terrific listing of rare and unusual natives and exotics. The display garden at the nursery is worth the visit. Eclectic, peaceful, always interesting, a hands-and-knees kind of garden. A surprise at every turn.

**Plants Delight Nursery**, 9241 Sauls Road, Raleigh, NC (27603) (919-772-4794). Owners Tony and Michelle Avent. Certainly a trend-setter mail order nursery. Tony has established himself at the forefront of the new, the zippy, the unusual and built a class act, two-acre display garden at their home and nursery. During my four-month stay, I found myself at the nursery five times . . . each time I left, I was forced to mutter that I needed to return. Easy to understand why: Four thousand tax on two acres. A plant here and a plant there kind of evaluation garden. Serves as an evaluation tool and as a "stock block" for the nursery. The catalog is a hoot. Tony pioneers humor in everything he does. His latest catalog cover features a Hosta behind bars with the caption "America Held Hosta" and a small warning that reads, "Warning: The Horticulture General has determined that opening this catalog may cause anxiety, hysteria, and excessive drooling." It does.

**Holbrook Farms**, Asheville, NC

**Woodlander's, Inc.**, 1128 Colleton Avenue, Aiken SC 29801 (803-648-7522). Bob Mackintosh and Bob MacCartney. Packed to the brim with the rare and unusual, natives and exotics. Catalog \$1.

**Goodness Grows**, a retail and mailorder nurser begun in 1977 by Marc Richarson and Richard Berry. PO Box 311, Highway 77 North, Lexington, Georgia 30648.



**Yucca Do Nursery, PO Box 655, Waller, TX 77484 (409-826-6363).** Catalog \$4. While not on the east coast, I wanted to insert this exciting Texas mail-order nursery. John Fairey and Carl Schoenfeld operate one of the most exciting collections of new woody and herbaceous germplasm in the U.S. This mail-order nursery is young and has great promise. The catalog is intended for the sophisticated gardener and features many plants available only from the nursery. Plants from Mexico, unusual seedling variations, mutations, special selections and a plethora of very rare herbaceous stock is on hand. Tim Kiphart, a former SFASU Horticulture major, and keen plantsman has been recently hired to take on much of the horticultural responsibility. Hooray!

## **THE THREATENED PLANTS OF EAST TEXAS**

Jason Singhurst is a graduate research assistant working on a project to locate, map and analyze the associated vegetation of approximately 180 endangered plant communities. This interesting project was funded by a University Research Council at SFASU and involves the cooperation of several agencies, including the Texas Parks and Wildlife Natural Heritage Program and the Texas Nature Conservancy. The location and vegetative data is being entered into ArcCAD, a GIS package for the PC. The goal of the project is to document the location of endangered plant communities and to monitor their change over time.

### **FEDERALLY ENDANGERED SPECIES:**

- Hymenoxys texana* (Texas bitterweed)
- Lesquerella pallida* (white bladderpod)
- Spiranthes parksii* (Navasota ladies-tresses)
- Hibiscus dasycalyx* (Neches River Rose mallow)

### **STATE ENDANGERED SPECIES**

- Abronia macrocarpa* (large-fruited sand verbena)
- Trillium recurvatum* (Prairie trillium).

### **STATE THREATENED SPECIES**

- Brachyeltrum erectum* (Bearded short-husk)
- Cypripedium kentuckensis* (Southern Lady Slipper orchids)
- Parnassia asarifolia* (Grass of Parnassus)
- Phlox nivalis* var. *texensis* (Texas trailing phlox)
- Rhynchospora miliacea* (millet beakrush)
- Scirpus divaricatus* (Elliot's bullrush)
- Talinum rugospermum* (Flame flower)

### **Texas Organization for Endangered Species (TOES) "WATCH" SPECIES:**

- Bartonia texana* (Texas bartonia)
- Brazoria pulcherrima* (Centerville Brazos mint)
- Leavenworthia texana* (Golden yellow-eye)
- Macranthera aurea* (Houston macranthera)
- Polygonatum biflorum* (Great Solomon Seal)
- Trillium pusillum* var. *texanum* (Texas trillium)

## **FERNS AND HERBACEOUS FLOWERING PLANTS OF EAST TEXAS**



SFASU Biology Professor Elray Nixon retired in 1993, a great loss for east Texas botany. Author of numerous publications and the "Bible," *Trees, Shrubs, and Vines of East Texas*, Dr. Nixon made many strong contributions to our understanding of the natural vegetation of east Texas. This was no small task. There are 2,300 native species in east Texas which represent 40% of the state's native plant palette. In fact, Nixon alone has analyzed the vegetation in over 250 plant communities. Dr. Nixon is working through a final edit of a soon to be great resource: *Ferns and Allied Species of east Texas*. From the draft of that work, he extracted the following breakdown of the vegetation of east Texas:

#### Ferns

15 families  
38 species (taxa)

#### Monocots

25 families  
623 species (taxa)

Poaceae	243 species (taxa)
Cyperaceae	198 species (taxa)
Liliaceae	41 species (taxa)

#### Dicots

74 families  
1177 species (taxa)

Asteraceae	245 species (taxa)
Fabaceae	135 species (taxa)
Lamiaceae	51 species (taxa)
Scrophulariaceae	51 species (taxa)

#### TOTAL

114 families  
1838 species (taxa)

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**CREATING A BORDER . . . TEXAS STYLE** (the following is a reprint of an article by the author that appeared in the Native Plant Society of Texas Newsletter).

Adapting an old-world gardening style, the perennial border, to east Texas conditions can be more than just a challenge . . . it can be downright discouraging. Texas-sized droughts, cold fronts, heat spells, drenching rains and floods are a part of the menu and can test the best gardener's patience. That's not to say it can't be done. In fact, few gardening strategies can match the benefits of a well-established border. Seasonal color, a collage of textures, shapes, shadows, symmetry and, ultimately, easy maintenance are all undeniable attributes of a well-established border.

First, what defines a border? Classically, a perennial border in the old world tradition is ten to fourteen feet wide with a hedge row backdrop, often evergreens sheared to a smooth, somewhat formal style, a "frame for the picture." The border can be as long as the gardener's enthusiasm. General themes include a preponderance of herbaceous perennials to the point that some "purists" look with disdain on the border that's home for a few annuals, or an occasional woody shrub, or a patch of clumping grass. In general, plants that reach a tall stature are given a place at the back of the border, medium-height plants placed in the middle, and the low-growers are given a spot at the front. Gardeners commonly aimed for season-long color and a variety of plant textures to provide interest. Some prefer a hot to cool to hot color approach (from one end of the border to the other). Others aim for the reverse. Some don't care. Combining colors can create an argument. While the yellow of *Coreopsis* against a backdrop of the purple of *Liatris* or *Salvia* may delight some, others may find the combination repugnant. Borders create garden interest and viewer opinions. The perennial border is what the gardener leads it to.

The SFASU border has been an education. About 120 feet long and 12 feet wide, the border's backdrop is *Viburnum nitidum*, the Shiny Viburnum, an underutilized native shrub of east Texas woodlands. We are keeping this line sheared and topped at about 6 feet. The border began as a class project in a Landscape Plant Materials class and is always in evolution. Over six years, we have learned a few tricks that work and some that don't.

Give your plants a space of their own. By planting good-sized colonies of a particular variety, maintenance is less and competition more easily handled. Trying to cram too many species or special varieties into too little an area is a common mistake. The plants are often small at planting and it's difficult to imagine the kind of spread some species demand for good performance. We've learned that the perennial border is not the place to spot plant a new or special plant; we've lost many of them in the jungle of mid-summer growth. We now have a special area to develop stock plants for propagation purposes. In the border, we are moving to 25 square feet per species with some species allotted more.

Time your maintenance. Really, a perennial border is low maintenance . . . once it's well-established. The first year is the key year. That may mean timely irrigations and weeding. We work our 6 year old border three or four times per year. With hand snips, light weight gloves, and a couple of enthusiastic students we can finish the job in just a few hours. Pull a few trumpet creepers, sweetgum and redbud seedlings, wipe out a patch or two of carpet grass, beat back the *Salvias* and cone-hats, and spruce up the plants here and there with a snip or two. We do rely on Roundup along the front edge of the border and an occasional application of Poast or Fusilade (grass-killers) as spot applications when the bermuda gets a little robust. We bark mulch after the final weeding in the early fall.

Run with the ones that work. Outstanding natives in the arboretum border include many of the *Salvias*. *Salvia coccinea* is now available in pink, white, salmon and red and is always dependable for color. We deadhead the *Salvias* with hedging shears to get through a colony quickly. *Salvia leucantha* lays on a great fall display of purple and white and deserves a spot at the back or mid portion on any border. *Salvia greggii* can make an interesting part of any border; with many colors available, this woody can be pruned back at the end of the season and will return with

renewed vigor the following year. *Liatris* needs a sunny, dry spot - pick any of the natives and run with them. We have found *L. pycnostachya* an outstanding show piece when in bloom and an interesting spot of architecture when it's not. *Echinacea purpurea*, purple coneflower, makes a sturdy colony after a couple of years and is easy to contain. Ours comes from a nearby native population. *Ratibida columnaris*, the conehead, needs only one introduction to the border . . . then it's there to stay. The gardener needs to capitalize on its robust persistence and ability to bloom several times per year if cut back at the end of each blooming period. *Anisicanthus wrightii* and *insignis*, the Texas firecracker plant, is at home in east Texas but needs a dry spot in the border. Columbines have done surprisingly well in a shady spot of the border, both *Aquilegia canadensis* and *hinckleyi*. *Asclepias tuberosa*, butterfly weed, puts on a great show in August and September, loves a drought, but has been one of the most difficult to establish in the border. The ox-eye daisy, *Chrysanthemum leucathemum*, is native to northeast Texas, makes a tight one-foot clump and deserves a spot at the front of the border. Shasta daisies, *Chrysanthemum maximum*, can be prodded into several waves of bloom by frequent deadheading and are another front-of-the-border colony. *Coreopsis grandiflora* is available in several improved cultivars, needs frequent deadheading, and can't be beat for dependable blooms. We use a good bit of *C. lanceolata*, Golden Wave, and have found this southeastern Texas native to be competitive and reliable over six years. We use *Helianthus maximillani*, the Maximillian daisy, at the back of the border; the plant reaches over six feet, lays on a coat of bright yellow flowers in the fall and needs something in front of it to lower stems that tend to lose their leaves. Standing cypress, *Ipomopsis rubra*, is a self-seeder and is kind of our "weed of choice" but it's easy to pull and not difficult to maintain; we have a collage of color forms: red, yellow, cream, and splotted. We use several *Lantana* species and cultivars to fill space, crowd out weeds, and provide summer/fall color. We are using a white and red form of Turk's Cap, *Malvaviscus drummondii*, and one plant can make a "colony" by summer's end. Several native species of *Physostegia*, the obedient plant, do well. There are plenty of phloxes to work with. There are many others that look promising.

While the SFASU border changes from year to year, the framework remains much the same: plenty of natives, color, texture and garden interest. With easy maintenance and low input characteristics, this gardening style deserves a wider audience and greater use.

### **CHINESE TRUMPET-CREEPER, *Campsis grandiflora***

Our native trumpet-creeper, *Campsis radicans*, enjoys a wide range across the south and is known for its summer into fall blooming period. This deciduous native vine sports orange to scarlet-red blooms and several varieties have been named. 'Flava' displays bright yellow flowers and 'Praecox' features scarlet blooms. 'Speciosa' provides a shrubby, compact plant with less vigor. 'Judy' is a yellow-flowered form from Woodlanders nursery in Aiken, South Carolina. The vigor of this native is often considered a major detriment. The vine can quickly overpower. Suckers can pop up almost anywhere and the vine is quick to latch onto anything within reach. Aerial roots cling tenaciously to brick and wood walls. However, when placed in a bright sun-lit spot, trained to a post and kept there, few vines are showier. There are several inter-specific hybrids of *C. grandiflora* and *C. radicans*, the most common of which is "Madame Galen" and 'Coccinea'. Both are quite vigorous under Texas conditions.



The Chinese trumpet-creeper, *Campsis grandiflora*, is a little more well-behaved. Less vigorous and without many aerial roots, the vine is easy to control and display. The most significant feature is the bloom. The corolla, unlike our native, is funneliform, distinctly flared and up to three inches wide. The color is a bit difficult to describe with bright yellow inside and tangerine-red petals. There's a hue of pink to the blooms. Flowers are in loose, large panicles. Many find the blooms reminiscent of petunias on a vine. The vine needs a full-sun position in the landscape, and appreciates even moisture and mulch during the establishment year. Cuttings taken from adult growth will callus but often fail to make a root system: a severe hardship for nurserymen. While easy to root from young juvenile cuttings, the plant often fails to bloom for several years which makes sales difficult. Hardy to Zone 7, the vine is considered relatively rare in the trade but is available through mail-order and specialty nurseries.

### **THE CROSS-VINE, *Bignonia capreolata***

The Cross-vine, *Bignonia capreolata*, is a wonderful native that ranges from east Texas to Florida and north to Virginia and Illinois. The vine deserves much greater use. Unfortunately, many Texans are familiar only with fallen flowers strewn across a forest floor. With tendrils tipped with tenacious holdfasts, the vine easily inches its way to the tops of the tallest trees. Only in the upper canopy where the sun is brighter does the cross-vine gather the energy to flower. While native to moist, shady woodlands, the cross-vine performs best in the landscape if given full sun. In a bright, sunny spot the vine takes on a heavy cloak of delightful blossoms. Flowers are tubular, attract hummingbirds and are commonly a scarlet-orange blending gradually into an orange-yellow throat. Uncommon in landscapes, 'Atrosanguinea', or the red flowering cross-vine is slightly different. This variety is blessed with bright scarlet blossoms. In full bloom, few flowering vines compare. Peak bloom is May-June but light sprinklings of flowers follow all the way to frost. A recently named variety, 'Tangerine Beauty', shows great promise and is new in our trials.

Establishing the cross-vine is not difficult provided a few rules are followed. The vine should be grown much like a Clematis; that is, the plant can be grown in the shade but the crown of the plant should be allowed to reach full sun. The cross-vine is not choosy for soil type but newly established plants benefit from mulching and summer irrigations. Once well-established, cross-vine can make it quite well on its own. Cross-vine is well-behaved, pest-free in most locations and easy to keep in bounds with an annual pruning. Easy to root, the vine can be started from semi-hardwood and softwood cuttings. Treated with rooting hormone and held under intermittent mist, rooting percentages approach 100% at six weeks. While not common in the nursery trade, the red flowering cross-vine is available from specialty nurseries and many mail order catalogs. Homeowners looking for a special vine with numerous attributes - glossy, evergreen foliage, a heavy show of color, and a care-free habit - need look no further than the red flowering cross-vine.

### **A GREAT GROUND COVER FOR THE SOUTH, *Ruellia brittoniana* 'Katie'**

Ruellias often grace old home and farmsteads throughout much of the south. Reaching two to three feet, they are commonly referred to as Louisiana petunias or some other local name. Available in white, lavender and pink-flowered forms, the species is a durable herbaceous perennial for Texas landscapes. 'Katie' is a bit different. Found as a chance seedling in a container at Lowrey

Nursery, Conroe, Texas, and named after the owner, Katie Ferguson, this little *Ruellia* is rarely taller than six to nine inches. Blessed with a wonderful cloak of four to six-inch long, elongate-linear leaves, the lavender petunia-like blooms are the most wonderful hue of lavender. Spaced at six inches to a foot apart, it doesn't take long for a planting to make a dense groundcover mat in a landscape bed. While this plant responds to good care and culture, one of the great strengths of the dwarf *Ruellia* is its ability to thrive under adverse conditions, sun or shade and in moist to dry soils. The northern limits for 'Katie' are unknown; in our region, 'Katie' was badly burned back to the ground, but quickly recovered. We have found, after the first year of establishment, that the species becomes dense and resistant to weed encroachment. Though a short-statured plant, I suspect that the plant literally shades out weed seedlings. A recent find, 'Katie's Pink', is a variegated dwarf *Ruellia* discovered by Scott Reeves of TreeSearch Farms, Houston, Texas. With leaves mottled a flecked, bronzey-pink, this latest dwarf is quite stable and provides a change in foliage color.

A member of the *Acanthaceae* family, there are about 250 species of *Ruellias* in the world found mostly in tropical America, Africa and Asia. *Ruellia brittoniana* occasionally escapes in the southeast. 'Katie' is not invasive, choosing only to strengthen its hold on the ground beneath a dense mat of foliage. The northern limits of this plant in Texas have not been fully established. While harsh winters burn the plant to the ground, the species reliably returns the following spring. One of our favorite combinations is a mix with white alyssum, a popular annual, into little pockets between the plants. The combination of dark green, lavender blooms and the white of *Alyssum* 'Snow Carpet' was a real show this past year.

## **GARDENING IS BIG BUSINESS**

According to the 1993 Gallup survey, U.S. households spent \$12.5 billion dollars on professional landscaping and lawn care services in 1993. The average household spending on landscape services was \$721. Lawn/landscape maintenance received the largest share of total homeowner landscaping dollars at \$6.4 billion, followed by landscape installation/construction at \$5.6 billion, and landscape design at \$381 million. The largest average household expenditures were on landscape installation/construction at \$2,971, followed by lawn/landscape maintenance at \$445 and landscape design at \$424.

Americans 50 and older accounted for nearly half of all expenditures on lawn/landscape maintenance services. The Western U.S. had the highest average expenditures on lawn/landscape maintenance services at \$536. Americans 30-49 years old accounted for 83% of landscape installation/construction; they also had the highest average spending in this category, \$3482. Homeowners in the south had the highest average spending on landscape installation/construction, \$6, 147. Women accounted for 70% of spending on landscape design services; their average expenditures in this category were twice that of men. The Mid-Atlantic region accounted for nearly half of all landscape design spending.

## **WOODY ORNAMENTAL EVALUATION PROGRAM:**

We are establishing a formal long-term woody and herbaceous plant evaluation program. It's certainly needed. While the public often views an arboretum as a tree and shrub park, arboretums



are much more than that. Arboretums are natural platforms for the long-term evaluation of new ornamental horticulture crops and new strategies for their production and promotion. The dollar value of the horticulture industry in east Texas is certainly big enough to justify more research, more extension, and more attention. The proposed project will develop long-term strategies that answer industry and community needs as they relate to ornamental horticulture. We are proposing that the ten-acre SFASU Arboretum, an outstanding horticultural physical facility and an excellent network of outreach resources be utilized as an umbrella for research and promotion projects that contribute to the diversity and health of urban horticulture in Texas.

There are no formal woody ornamental or herbaceous perennial evaluation programs in Texas. In the U.S., the premier programs are based at the Arnold Arboretum of Harvard University, the Saratoga Foundation in California, the University of British Columbia at Vancouver, B.C., the Chicago Botanical Garden, and the North Carolina State University Arboretum. In the Netherlands and Germany, extensive and excellent programs are heavily supported by growers and government. We are proposing that the SFASU Arboretum Plant Evaluation and Introduction Program follow a strategy similar to the North Carolina State University Arboretum, Raleigh, North Carolina. The North Carolina Association of Nurserymen (NCAN) has reported that the total economic impact of the NCSU Arboretum has been in excess of 10.8 million dollars per year at the producer level. We feel that the SFASU Arboretum is ideally suited for a long-term testing, evaluation, introduction and promotion program.

The SFASU Arboretum would, 1) establish a long-term evaluation program for woody trees, shrubs, vines, ground covers, ornamental grasses and herbaceous perennials, 2) enhance the Arboretum as a center for horticultural displays, as an outdoor living laboratory, and as a place with high visitor appeal, and 3) disseminate findings through the Texas Association of Nurserymen, Texas Greenhouse Growers Association, scholarly and trade publications, oral presentations, media and through annual field days.

The ornamental horticulture industry is based on a mix of products: containerized woody ornamental trees and shrubs, herbaceous perennials, ground covers, vines and greenhouse-grown flowering annuals and pot crops. The market place for woody ornamentals and herbaceous perennials is diverse, from small mail-order nurseries that specialize in producing small numbers of many types to large corporate nurseries producing containers in the hundreds of thousands. Most plant introduction programs are geared to large markets and high financial rewards. Yet, small growers make a contribution by growing specialized crops, appealing to retailers looking for the new and the different, and by widening the plant palette of landscapes. All sectors compete for shares in the ornamental horticulture market. In Texas, with the exception of the Rose Grower's Association, producers manage and direct their own marketing programs. On close inspection, east Texas enjoys unique comparative advantages over other regions of the state. There's no shortage of good, reasonably priced land and irrigation is often easily accessed at low cost from either surface or shallow well sources. Western regions of the state face painfully high irrigation costs, reduced groundwater supplies and increasing water quality problems. There's a ready supply of low-cost composted bark mulch, a high quality media and soil amendment. In terms of proximity to large markets, the region is just a few hours away from large population centers. There are no major problems in finding skilled and unskilled laborers. While there's plenty of room for optimism, there



are impediments. First and foremost, there are no long-term evaluation programs to test new woody and herbaceous plants, nor is there any formal effort in east Texas to evaluate promising cultural strategies. In fact, few nurseries are large enough on their own to maintain a strong research and development program. Instead, most nurserymen rely on research and development efforts that take place in other states or develop their own approach through trial and error. East Texas needs a long-term, centralized program to evaluate the performance of new landscape plant materials and new strategies that produce them on a competitive basis. The SFASU Arboretum is a natural platform for a woody and herbaceous ornamentals research, development, and promotion program. It is our contention that this is a timely union of SFASU Arboretum attributes and industry and consumer needs.

**THE GRANT-WRITER'S LAMENT:** A friend of mine, Ms. Kris Rhodes of the SFASU Office of Research Services and Grants, found this interesting ditty on the Internet. I thought it might bring a chuckle to any grant-writer or community-minded citizen that has tried to move a project to fruition.

The Court of King George III  
London, England

July 10, 1776

Mr. Thomas Jefferson  
c/o The Continental Congress  
Philadelphia, Pennsylvania

Dear Mr. Jefferson:

We have read your "Declaration of Independence" with great interest. Certainly, it represents a considerable undertaking, and many of your statements do merit serious consideration. Unfortunately, the Declaration as a whole fails to meet recently adopted specifications for proposals to the Crown, so we must return the document to you for further refinement. The questions which follow might assist you in your process of revision:

1. In your opening paragraph you use the phrase "the Laws of Nature and Nature's God." What are these laws? In what way are they the criteria on which you base your central arguments? Please document with citations from the recent literature.
2. In the same paragraph you refer to the "opinions of mankind." Whose polling data are you using? Without specific evidence, it seems to us the "opinions of mankind" are a matter of opinion.
3. You hold certain truths to be "self-evident." Could you please elaborate. If they are as evident as you claim then it should not be difficult for you to locate the appropriate supporting statistics.
4. "Life, Liberty, and the pursuit of happiness" seem to be the goals of your proposal. These are not measurable goals. If you were to say that "among these is the ability to sustain an average life

expectancy in six of the 13 colonies of at least 55 years, and to enable newspapers in the colonies to print news without outside interference, and to raise the average income of the colonists by 10 percent in the next 10 years," these could be measurable goals. Please clarify.

5. You state that "Whenever any Form of Government becomes destructive of these ends, it is the Right of the People to alter or to abolish it, and to institute a new Government...." Have you weighed this assertion against all the alternatives? What are the trade-off considerations?

6. Your description of the existing situation is quite extensive. Such a long list of grievances should precede the statement of goals, not follow it. Your problem statement needs improvement.

7. Your strategy for achieving your goal is not developed at all. You state that the colonies "ought to be Free and Independent States," and that they are "Absolved from All Allegiance to the British Crown." Who or what must change to achieve this objective? In what way must they change? What specific steps will you take to overcome the resistance? How long will it take? We have found that a little foresight in these areas helps to prevent careless errors later on. How cost-effective are your strategies?

8. Who among the list of signatories will be responsible for implementing your strategy? Who conceived it? Who provided the theoretical research? Who will constitute the advisory committee? Please submit an organization chart and vitas of the principal investigators.

9. You must include an evaluation design. We have been requiring this since Queen Anne's War.

10. What impact will your problem have? Your failure to include any assessment of this inspires little confidence in the long-range prospects of your undertaking.

11. Please submit a PERT diagram, an activity chart, itemized budget, and manpower utilization matrix.

We hope that these comments prove useful in revising your "Declaration of Independence." We welcome the submission of your revised proposal. Our due date for unsolicited proposals is July 31, 1776. Ten copies with original signatures will be required.

Sincerely,

Management Analyst to the British Crown

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*INTERNET AND ARBORETUMS*

The World-Wide Web places Internet resources at the fingertips of non technical people. By using a point-and-shoot technology called hypermedia, the Web allows anyone to move seamlessly across the Internet. A program called a browser allows desktop computers to communicate directly

with other computers on the Internet. Popular browsers include Mosaic, Cello, and NetScape.

Most trips across the Web require only clicks of the mouse buttons, with no typing and no UNIX commands. For example, if I wanted to locate information on forestry, I would click the "Net Directory" button, and look for resources in the Virtual Library Index in Switzerland. Clicking on the word "Forestry" automatically retrieves from a computer in Finland a lengthy listing of related resources. From that list, I can link directly to the USDA or the Australian Environmental Resources Information Network, consult the tables of contents of recent issues of *Tree Physiology*, or retrieve pictures of gypsy moths. All this without typing a single keystroke!

Connecting to the Web is quite easy. Recent innovations make the Web available to just about everyone. A few months ago, only computers that were networked to an Internet node could run Web programs. Advances in high-speed modems and communications software, though, have virtually eliminated the networking requirement. With products like Internet In A Box (Spry, Inc.; [iboxinfo@spry.com](mailto:iboxinfo@spry.com)), anyone with a 386 PC, 4 MB of RAM, Windows 3.1, and a 9600 baud modem can use the Web.

Texas A & M Horticulture server: <http://128.194.43.18>

Missouri Botanical Garden: <http://straylight.tamu.edu/MoBot/welcome.html>

## **VOLUNTEERS NEEDED**

If you are interested or know of someone who might be, please let me know around the first of the year. The garden's growth has reached a point that we are having real problems keeping up with everyday chores: planting, weeding, and mulching. Just a couple of busy hands for a few hours every week or two would be of great help. We can assign an area, familiarize you with the plant material, help you get started and let you run with any ideas you might have to make that theme garden shine. While the "living laboratory for students" concept is a good one, we have pushed the envelope about as far as it can go with the size of our program. We need a core volunteer group to help us move this resource to the next phase. While the Daylily garden and Herb garden have an active volunteer corps, most of our theme gardens are in need of volunteer help. While in North Carolina, I have been taking notes on volunteer programs and am convinced we can do the same in Nacogdoches.



1. William C. Mulligan. 1992. **Rare and Unusual Plants**. Simon and Shuster, NY, NY. 224pp. Excellent photographs adorn this coffee table quality book and it's a real thrill to see so many plants featured that are doing well in the arboretum. Highly recommended for the adventurous gardener.
2. Thomas Pope, Neil Odenwald, and Charles Frying, Jr. 1993. **Attracting Birds to Southern Gardens**. Taylor Publishing Co., Dallas, Texas. 164 pp. This book is a must for the bird lover! Good overview of the resident and migratory birds that grace our gardens and the plants that help bird populations to thrive.
3. **Royal Horticultural Society Encyclopedia of Gardening**. 1992. Four volume set. The Stockton Press, 275 Park Avenue, NY, NY 10010 (ISBN 1-56519-001-0). This four volume set for \$795.00 is not for the casual gardener. With 3600 pages, this is not a field manual. This is one of those serious references for the gardener that wants to know everything.
4. Robert A. Vines. 1966. **Trees, Shrubs and Woody Vines of the Southwest**. University of Texas Press, Austin, Texas, 1104 pp. Another reference that should lie within easy reach of the complete horticulturist.
5. **The New York Botanical Garden Illustrated Encyclopedia of Gardening**. 1980. Garland Publishing, 136 Madison Avenue, NY, NY 10016. Thomas H. Everett (ed.). A ten-volume set, a reference for the got-to-have-it-all horticulturist.
6. Steven A. Spngberg. 1990. **A Reunion of Trees**. Harvard University Press, Cambridge, Massachusetts. This is an outstanding book that illustrates and describes all the drama and tragedy association with the discovery of exotic plants and their introduction into North American and European landscapes. The early plant expeditions into the wilderness of North America are reconstructed through the correspondence of these brave souls. Illustrated with a wonderful collection of line drawings, old photographs, and color monographs, the book brings life into the early excitement of new finds.
5. Elizabeth Wilkinson and Marjorie Henderson. 1992. **Decorating Eden**. Chronicle Books, San Francisco, California. 226pp. Described as a comprehensive sourcebook of classic garden details, this book includes a introductory, historical, albeit brief, review of garden design. From the formal designs that emerged in the prehistoric past along the Tigris, Euphrates and Nile to the varied landscapes of modern "American" gardens, the editors attempt to tie design concepts into the stream of time. From then on, the book dives into an alphabetical approach to design with an emphasis on structures, not plants. Topics begin with alleys and avenues, apiaries, arbors, aviaries and run all the way to walls, water (ancient uses), water (formal uses), water (Japanese uses), water (nautical uses), water surprises, weathervanes and whirlgigs, and wells. Exceedingly well illustrated, the book is excellent for anyone wishing to gain a historical perspective and find ideas for that special garden.
6. Delena Tull and George Oxford Miller. 1991. **A Field Guide to Wildflowers, trees and shrubs of Texas**. Gulf Publishing Co., PO Box 2608, Houston, TX 77252-2608. 344pp.