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Friends of the Stephen F. Austin State University Arboretum

NEWSLETTER NO. 9, MAY, 1990
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Welcome back to the Arboretum Newsletter! OK, OK, I know I've set some kind of record for "lateness-in-a-mailout" of an arboretum newsletter. I can only offer my usual and very lame excuse; the arboretum keeps us way too busy. I think you will be surprised at just how much real growth the arboretum has made in the last nine months. We have a number of new gardens and have made great strides in taking care of those that have been established in year's past. Readers of this newsletter can enjoy three new columns that I hope to keep alive in the years ahead: 1) Notes from the Herb Garden, 2) Notes from the Bog and 3) Notes from the Perennial Border. All three pieces were authored by arboretum volunteers. They are devoted plant enthusiasts and have been an essential part of the arboretum's development. This newsletter chronicles arboretum happenings since September, 1989.

ARBORETUM HAPPENINGS

NOTES FROM THE GARDEN: The mid-winter lows on December 21-23, 1989 caught all of us by surprise. Colder than the December, 1983, deep-freeze and certainly a lot drier, this winter's arctic blast has left a lasting impact on many plants in the east Texas landscape. The plunge to zero degrees fahrenheit on December 22nd and to five the next morning was a challenge for even our native botany. After all, the 1983 low of seven was a hundred year record. One precept that will certainly be given a good test is the opinion that cold is more damaging to plants under dry soil conditions. We certainly had that in Nacogdoches. Coupling that problem with a brisk twenty-five to thirty mile per hour wind and you have the makings for a real test! One thing for sure: the arboretum has yielded a bounty of plant hardiness data this spring.

The big news at the arboretum in 1989 would have to be the weather. The year will go down as one of the strangest on record. After an unusually mild winter (low of 16° F), our region of east Texas was rocked by a record late freeze on April 11, 1989. That arctic blast easily wiped out much of the peach and blueberry crop in east Texas. A very wet June was followed by a long mild, dry spell that lasted until the hard freeze of December 21. A mid-October hard freeze, a month earlier than the average, caught all of Nacogdoches off guard. At the arboretum, we did manage to run the sprinkler system in zones where we thought it would do the most good: vegetable plots, newly set plants, the bog, etc. That worked well. The key to sprinkling for freeze protection is to generate about 70 to 90 gallons per minute per acre. Turn the system on at 32°F and don't turn it off until the ice has melted away. One should design a sprinkler system that has good overlap even in a light wind and blooms should be hit by droplets at least two times per minute. Protection into the low twenty's can be expected if the described conditons are met.

There were some substantial plant losses and some exciting survivals that still have me scratching my head with wonder.

Unexpected survivors with little to no injury included Euschapis japonica, Myrospermum sousanum, Quercus grisea, Quercus canbyi, Taxodium mucronatum, Araucaria araucana, Sophora viscifolia, Glyptostrobos lineatus, Quercus polymorpha, rhizophylla and other Mexican oaks. The Azalea collection involving ten hybrid "groups" came through unscathed. Except for our hardy native, Callicarpa americana, most of the beauty berry collection froze to the ground. Viburnum tinus froze to the ground as did Viburnum suspensum; both have recovered well from the crown. Viburnum luzonicum lost all of its foliage but quickly releafed early in February. Viburnum obovatum came through unscathed as did all of the natives. We did lose several of the Machilus trees in the collection, the survivors pushing from below the ground in early May. Itea illicifolia, the holly-leaf sweetspire, was lost. A late November planting of a collection of Ardisia japonica varieties was severely damaged but few cultivars were totally lost. Except for Hypericum Na43, the Hypericum collection froze back to the crown.

Not surprising was the hard blow taken by many of our landscape standards. Pittosporum froze to the ground all over campus; survivors will take years to recover. Loquats, even in protected sections, froze back to major scaffolds. Indian Hawthorns were less affected. Photinias, variegated privets, and the junipers were unscathed.

DAUGHTERS OF THE TEXAS REPUBLIC GIFT: Ms. Nell Hoover of the Daughters of the Texas Republic informed me in an April letter that a gift of two thousand dollars was being earmarked to our arboretum effort. This is a great gesture and I'm confident that our first year's effort will be an excellent "seed" for future funding. The Daughter's gift to the arboretum requires that we focus on education and plant heritage. The funds will be used to design, install, and maintain a model garden that displays the plants utilized in the late 1800's and early 1900's in Texas. What kind of plants were common then? Hollyhocks, cosmos, nasturtiums, flags, Rose-of-Sharon, old roses and a number of deciduous shrubs would have to be included. I will be doing the research for this interesting project this summer; we will begin the installation in January, 1991. We intend to set aside about five thousand square feet in an area just to the west of the Herb Garden. Hopefully, we can generate a cedar rail fence, rock paths, and other garden structures to give the garden just the right nuance.

AMERICAN SOCIETY FOR HORTICULTURE SCIENCE MEETING (ASHS): One of the great joys associated with horticulture and education is running into students with a passion for learning and plants. At the ASHS conference this year in Little Rock in early February, 1990, I had a horticultural judging team that walked away with five of six potential first places. While not completely related to the Arboretum, I just had to put the newspaper clipping in. Let's call it "tooting the arboretum's horn."



Staff photo by Hardy Meredith

We are the champions: The Stephen F. Austin State University horticulture judging team recently walked away with five of six possible trophies at this year's southern regional American Society for Horticulture judging contest. Under the direction of SFA Agriculture Professor David Creech (left), teammates include Douglas Hines, Jan Callison, Scott Reeves and Lori Hutson (not pictured).

In regional meet

Sentinel Feb 18, 1990

SFA Horticulture students blow others out of saddle

By EDWARD GATELY
Sentinel Staff

Four horticulture students at Stephen F. Austin State University "blew Texas A&M University out of the saddle" last week by taking top honors at a southern region American Society for Horticulture Science team judging contest in Little Rock, Ark.

"At last year's awards banquet, in front of 350 of my colleagues, the speaker announced 'and the number two high-scoring individual is Scott Reeves from Stephen Foster University,'" said David Creech, professor of horticulture at SFA. "At the awards ceremony this year, the speaker not only got our name right, he had to repeat it six times."

This year's team members Reeves, Jan Callison, Douglas Hines and Lori Hutson walked away from the competition with first place team, first place high-scoring individual (Reeves), second high-scoring individual (Jan Callison), first place woody identification and judging, first place greenhouse identification and judging, and first place fruit judging.

"They had to identify the species of 50 out of 100 plants," Creech noted. "The fact that our arboretum is right outside the door helped us. Walking away with top honors got our name out in front."

The competition included woody plant identification and judging, greenhouse and tropical foliage identification and judging, fruit judging and vegetable judging. In addition to Texas A&M, the SFA team's competition included Texas Tech University, Oklahoma State University, Louisiana State University, the University of Arkansas and other schools.

"At A&M, they have internal competitions and they pick the best to be team members at this competition," the professor noted. "It felt good that we were able to come up with a good team."

"We knocked A&M out of the saddle," Hines said. "Being able to identify the plants is important, and having good resources works to our advantage. One of the reasons I came here is because SFA has an arboretum."

No other university involved

in the horticulture contest has an arboretum, Creech noted, adding other horticulture professors have to travel in order to train their students with plant identification.

"All we have to do is walk outside and the plants are right here," he said. "Southwest Texas State University will be getting an arboretum soon. Our arboretum will be an advantage to us for a long time."

Mississippi State was second high-scoring team and Texas A&M took first place in vegetable judging.

"In the fruit and vegetable judging competition, you have to determine the quality so you have to have an idea of how fruit should look," Creech said. "Our team took all of the plants to Little Rock, laid them out and went over them again and again. The fruit competition was really the hardest."

Why is plant identification important?

"We are plantmen and we need to know plants," the professor noted. "The arboretum acts as an advantage in getting our students in love and involved with plants."

ENTRANCE GATES, BRIDGES, GRAVEL, AND THE LANANA CREEK TRAIL: Three entrance gates, carved by Art graduate student, Ms. Susan Elking, are positioned on the east side of the Agriculture/Art parking lot. The 12 foot long, 12" X 12", treated beams are eye-catching garden pieces and will soon be the perpetual home of several vine specimen. A great boost for the arboretum, the SFASU administration approved a project that will allow the LaNana Creek trail to proceed north from Starr Avenue. The LaNana Creek Trail project is now poised to make giant strides. For the last two years the arboretum has provided scores of container-grown pines, oaks, magnolia, and other species to the legion of volunteers commanded by Dr. Abernethy's enthusiasm. In spite of floods, high waters, wooden bridge wash-outs and bank/trail erosion, the LaNana Creek trail is impressive in its ultimate potential. Dr. Bill Long, Agricultural Mechanics, tackled the construction of four metal foot-path bridges that will be placed over the ravines and ditches that feed into LaNana creek from the arboretum and intramural field. The bridges were built by students in Dr. Long's Agricultural Mechanics class. Vic Shepherd, tackled the arduous task of moving the cumbersome pieces (up to 40 feet long) into place. A gravel trail will soon be spread from the Starr Avenue bridge north along the eastern edge of the Intramural field and the arboretum, all the way to the College Avenue bridge.

Those of you that are interested in a better understanding of what educated communities are doing with watershed management should pick up a May, 1990 issue of National Geographic. Many small and large cities have found that protecting the running water that moves through our lives can yield many, many dividends. We are lucky that Nacogdoches is uniquely positioned to make a strong "greenbelt" statement in this region of east Texas. The city is blessed with floodplain woodland that promises to be a major attraction in our community. There are excellent specimens of numerous species and the creek meanders through floodplains of varying width providing numerous vistas of points of significance. The fact that all of this lies adjacent to a perpetual academic institution makes the task a bit easier and certainly more sensible.

It is difficult to not keep returning back to the weather this spring. The floods of April and May never let up. While one might expect the LaNana in our area to leave its bank once every three years, this year found our flood plain tested three significant times this spring. The deluge of May 31, 1990 drove the LaNana into the arboretum all the way to the Agriculture Parking lot. In terms of damage, it could have been a lot worse. Those of you that visit the arboretum know that a LaNana flood plain to the Ag/Art parking lot means that much of our collection must deal with water over their heads. We are fortunate that the creek, once out of its banks, moves slow enough through the garden to not wreak too much havoc. Our two woodland glen wooden bridges were badly tossed about. The entrance gate beams just laid at the southeast corner of the arboretum but not set found their way to the middle of the intramural field. Bill Long's bridges, in place but not secured to

the ground, caught a lot of debris but weathered the current well. Most tested were the species tacked into the edge of the LaNana Creek flood way. The mayhaws, tupelos, and willow species that line the bank's edge stayed underwater for nearly a day!. Once the torrent reduced itself the second day, it was easy to tell that with a little clean-up most of the collection would come through fine. We did lose a great deal of bank in one section. The railroad ties in the bog area got badly shoved around. There were three or four visible erosion scars created in the arboretum. The vegetable plots on the north end experienced over one foot of water but suffered only minor damage. The plot lacks a great deal in terms of dealing with surface drainage and the topsoil is a bit too tight but will with a little adjustment it will be a great horticultural soil (surface drainage improvement + organic matter additions). The Funk's 'G-90 sweet corn rows that line our collection of Ilex cultivars was, of course, flattened. A couple of irrigation risers bit the dust to a raging current and debris buildup. I was surprised and pleased that nearly all of the bark mulch (i.e. Asian valley) remained in place. In many areas it appears that we gained a bit of soil.

Key lessons to the floods and our arboretum's management:

TIE EVERYTHING TO
THE GROUND
THAT WE WANT TO KEEP

REGIONAL HEMEROCALLIS SOCIETY MEETING: The Southern Region meeting of the American Hemerocallis Society (the Daylily Society) met on May 26, 1990, in Nacogdoches at the Fredonia Inn. Over 200 enthusiasts attended the conference and toured local gardens. The arboretum was host to four busloads of plant enthusiasts. Each group was given a 45 minute walk-through of the arboretum. A special treat for the visitors was our nearly complete Stout Medal collection, the best of each year since 1950. That unique collection is temporarily sited on the northeast face of the Agriculture building. We will set aside a more appropriate location this fall. Jean Barnhart, Emmie Peacock, and Delores Jones are due thanks for their help with our daylily collection and display.

In mid-June, the arboretum received news that we were to be an official daylily display garden for the American Hemerocallis Society. As a result of the regional meeting in Nacogdoches and the work of our local daylily enthusiasts, a special daylily garden will be designed, installed, and partially maintained by the society. We have set aside the area just to the south of the glass greenhouse. The gardens will display not only the stout medal collection but other significant collections as well. The goal is to plant and maintain approximately 1000 varieties.

PROGRESS OF THE TURF PLOTS: Dr. Alhashimi's turf plots on the southeast corner of the arboretum were designed and prepared by his turf management class. The plots will test a wide range of turf varieties that Dr. Alhashimi has accumulated from Texas A & M University scientists.

A DRY GARDEN: The hot exposed south face of the Art building is now home to a xerophytic garden. The garden will test plants for their ability to deal with a minimal irrigation regime. Various desert woody and herbaceous perennials have been planted in the 8' X 120' raised foundation bed. Railroad ties were used to define the "dry border" and were the generous donation of Curtis Pruett, Superintendent of the Texas State Railroad, Rusk, Texas. Sandy loam soil and pine bark compost was tilled to a depth of 12 inches and limestone added to raise the soil's naturally low pH. Many of the plants are the results of our collection trips to Mexico and west Texas. In addition, several upland sand species have been selected from east Texas. Plants of interest include Mexican salvias, coreopsis, marigolds, and a unique dwarf Ruellia. Yuccas and agaves are well represented. Two Dasylirion species have been planted (one has not been identified and may be a new species). All the area needs is an old wagon wheel and a cow skull or two to finish the western flavor of the garden. I'm not sure Art is ready for that, though.

ANNUAL MEETING OF THE AMERICAN ASSOCIATION OF BOTANICAL GARDENS AND ARBORETA (AABGA): This professor and two graduate research assistants (Chuck Martindale and Rick Rankin) enjoyed a week-long trip to Seattle, Washington and the annual AABGA Conference, June 25 - July 2, 1990. This meeting was jam-packed with interesting presentations, educational events, and horticultural tours. The first impression one gets of Seattle is that the residents are people truly caught up with horticulture. Of course, that may be because the climate is so generous to plant growth and gardening is a little more easy than in the hot south. Even in July the temperature rarely rises above the 90° mark and nightly lows dip into the fifties. Chuck's accepted paper was titled, "A proposed plant sanctuary." The twenty-five minute slide presentation outlined the history of his project, described the essential ingredients involved in a site analysis and detailed the management strategy to preserve the unique ecosystem that lies adjacent to an intensive blueberry enterprise. The blueberry field derives its irrigation water from the perennial stream that originates in the proposed nature conservancy site. Chuck's thesis project was funded by the landowners of a special ecosystem only ten miles from Nacogdoches. The S.B. Hayter trust grant promises to lay a foundation for preserving the plant and hydrologic uniqueness of the watershed.

The Conerence's focus this year was: Working with Plants. Oral presentations included slide lectures on collection displays, plant collections and their uses, display and use of rare plants, audience research, ecologically responsible restoration, human issues in horticulture, rain forest conservation, plant propagation facilities, the latest in computer technologies, video landscape

simulations, a garden's mission and management, how mission defines policy, writing a mission statement: a holistic approach, and many other topics of interest to Directors of botanic gardens and arboreta and to any plant-oriented enthusiast.

Rick Rankin and I participated in an all-day arboretum computer mapping and inventory workshop. The details of AutoCad and LandCad software mapping procedures were described by some of the leading experts in the United States. Most impressive was the integration of plant inventory databases with mapping procedures. One of the most difficult problems facing arboreta and botanical gardens is keeping up with plant materials and their progress in gardens. Current projects at the larger gardens often involve grants of over one million dollars! Imagine the problem of Arnold Arboretum at Harvard University, Massachusetts with over 12,000 species and one hundred years of record-keeping. The card files that housed the years of information have been transferred to a computer database (BG-Base) and is now being integrated with a mapping program. The arboretum has been surveyed from the air and from the ground and plant location coordinates generated. The project has taken five years and is not complete yet. The goal is to framework a system that will allow constant yearly updates, allow visitors to immediately locate any plant on the four-hundred acres and provide an ongoing mechanism to keep up with difficult to manage inventories. In the future, a visitor to Arnold will be able to request, for instance, a listing of all the Ilex species and a map that highlights their location. Many arboreta will be able to exchange information through a universal network. As arboreta slowly take on the role of curators of the world's diminishing germplasm, such a system is a must.

Some of the tours during this conference included the Washington Park Arboretum and the Center for Urban Horticulture (part of the University of Washington), many of the best gardens of Seattle and south of Seattle, and one of the largest medicinal/culinary herb gardens on the west coast.

The Washington Park Arboretum is an awesome collection of 5500 different kinds of woody plants spread over two hundred acres. The focus is on plants that can grow in the Puget Sound area. Northwest natives mingle with species from around the world. Tremendous collections of maples, oaks, Philadelphus, Sorbus, and Rhododendrons are pocketed here and there in this woodland park. Most plants are well-signed and some of the special gardens include a winter garden, a woodland garden, a Japanese garden, a Rhododendron glen, and an Azalea way. Any plant enthusiast will find the collection inspiring and an excellent example of city/university cooperation.

The Center for Urban Horticulture was founded in 1980 through the joint efforts of University officials and Seattle-area horticulturists. By 1984 it had built and occupied new quarters at Union Bay, on the eastern edge of the University campus. In 1988 it joined the University's College of Forest Resources. The Center continues to grow and develop while carrying out its three fold mission; scientific research, graduate and undergraduate education, and public outreach. Included in this mission is the management of plant collections and programs in the 200-acre Washington Park

Arboretum. Current topics of research include: influence of urban microclimates on the growth and development of street trees, basic mechanisms that integrate the growth and functioning of roots and shoots and the effects of root-zone stress, the testing of plants of Chile for landscape utility, climatic factors that predict success of landscape plants, technology for micropropagation of landscape plants, and public perceptions and use of urban plantings.

On the campus and just across the street from the historic Anderson Forestry building is one of the largest culinary and medicinal herb gardens in the northwest. Laid out in a long and winding fashion, the garden is only slightly hidden behind a plant screen of mixed shrubs and small trees. Herbs are arranged in small well-labeled communities in 5' X 12' raise beds with brick walkways only four feet wide to encourage human interaction. The meandering patchwork of herbs and an occasional bench or garden piece makes this garden a special place on campus.

The South Seattle Community College Arboretum is situated on a bluff at the northernmost edge of campus, overlooking Elliot Bay, with a panoramic view of the downtown Seattle Skyline (6000 16th Ave SW, Seattle (telephone: 206-764-5809). The 12-acre site was established in 1978 adjacent to several hundred acres of city greenbelt. The arboretum is essentially the product of two enthusiastic horticultural professors and students. Steven W. Nord (telephone: 206-764-5336) is the arboretum coordinator and was brimming over with pride as the AABGA groups came through. Rightly so, because one of the most exciting developments for this young arboretum is the creation of a Chinese garden in association with Seattle's sister city, Chonquing. After a long search in the Seattle area, this community college was chosen by a Chinese design team for a multi-million dollar garden. The arboretum will be a part of and directly associated with this ongoing development project. Special features of the arboretum include the entry gardens, sensory gardens, a demonstration rose garden, a gazebo garden, water conservation gardens, and an excellent demonstration of composting, extremely well interpreted (this city recycles everything). The arboretum was initiated with a \$230,000 grant from the city to build a garden with special emphasis for the handicapped. From that start, numerous foundations, garden clubs, and private donors have emerged to create a truly special place in the northwest.

Lakewold Gardens is brimming over with unique history and the the ten-acre site overlooks Gravelly Lake in Lakewood, just south of Tacoma, Washington (Telephone: 206-584-3360). In 1907, Mr. and Mrs. Alexander purchased the porperty and hired the Olmstead brothers to design the perimeter fence, gate and brick walkway. The Griggs family purchased the property in 1924 and in 1938 the property was soldy to Corydon Wagner Jr. The Wagners recruited the talents of Thomas Church in 1953, one of America's foremost landscape architects. Church's contributions to the garden were many. He designed a swimming pool in a quatrefoil shape and added numerous formal and informal garden features. In 1987, a group of interested citizens determined that the gardens should ultimately be made available to the public in perpetuity. Mrs. Wagner

graciously made a gift of the entire estate to the newly-formed, non-profit organization, the Friends of Lakewold, with the stipulation that an endowment fund be raised to assure the continuing maintenance of the gardens. The fund drive was successful and the dream became a reality. The gardens were made available to the public in April of 1989. The garden is blessed with many rare and unusual tree specimens, all arranged in a pleasing and tranquil setting.

One of the most delightful tours of the entire trip was a trek through the Carl S. English, Jr., Ornamental Gardens at the Hiram Chittenden Locks, 3015 NW 54th street in Seattle. Led by an outspoken and articulate horticulturist, Arthur Lee (author of the book, Trees of Seattle), we were given an opportunity to absorb the beauty of old, rare, and unusual specimens including some very uncommon species of Aesculus, Acer, Cornus, Cryptomeria, Cercidiphyllum, Quercus, Prunus, Rhododendron, Stewartia, Styrax and many others. This is definitely a must stop for horticulturists willing to take their time wandering through a collection. A paper by Kathy Mendelson, Botanist, and Michael Fleming, Horticulturist, in 1981, lists the entire collection and provides location coordinates for the garden. While many plants are in poor shape and the care has been switched to color beds and a rose garden, the guide is a good start and is available from the Center for Urban Horticulture.

Seattle's Freeway Park, while not jam-packed with diversity, is certainly one of the strangest five acre gardens in the world. Built above one of the busy freeways, the thirteen million dollar garden is an example of creativity and amazes any who visit. I was amazed at the forty-five dollar per square foot cost. With over twenty thousand cubic yards of topsoil, five hundred large trees and two thousand shrubs, one finds it hard to believe that the entire garden is supported by steel and concrete above the hustle and bustle of downtown freeway traffic. There are four water elements in the garden with fountains moving over twenty-seven thousand gallons per minute. The fountains provide the white "noise" that masks the sound of traffic below. The garden is an engineering marvel and testimony to the city's commitment to horticulture.

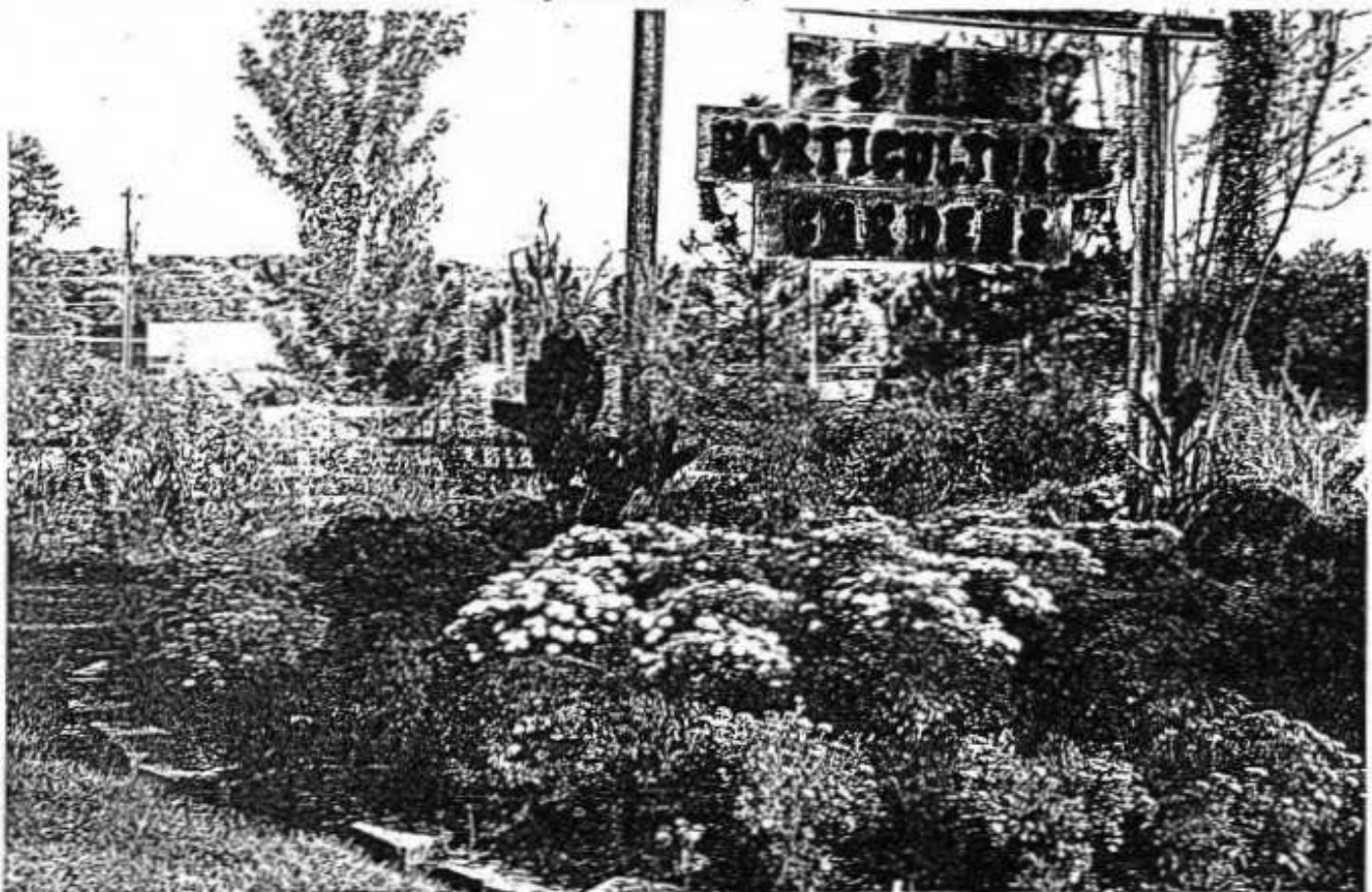
One of the most impressive stops was the garden at the Rhododendron Species Foundation, Weyerhaeuser Way South, Federal Way, Washington (telephone: 838-4646). This 24 acre botanical garden displays one of the largest collections of Rhododendron species in the world (not hybrids or cultivars). At the same location is an outstanding collection of bonsai, the Pacific Rim Bonsai Collection, a gift to the public from Weyerhaeuser.

Of course, I couldn't resist the opportunity to collect cuttings of plant material for our own garden. We managed to get permission from the Washington Park Arboretum and from the Wells-Medina Nursery, a retail nursery with a wonderfully diverse collection of landscape plants (8300 NE 24th St, Bellevue, telephone: 454-1853). Ned Wells, the owner and a delightful nurseryman, was very generous in allowing us to cruise the nursery grounds, snips, labels and poly bags in hand. We gathered cuttings of Magnolia, Spiraea, Wiegelia and many others.

ON THE ROAD

Arboretum A Learning Haven For Students and Visitors

By Diane Morey Sitton



Each year horticulture students at Stephen F. Austin University set out thousands of plants at the university's arboretum. Photos courtesy of SFAS Arboretum.

In 1985 the landscaping plant materials class at Stephen F. Austin State University in Nacogdoches took on the task of landscaping the grounds surrounding the agriculture building. The project marked the beginning of the SFA Arboretum which, today, encompasses nearly eight acres and is home to more than 2,000 species of plants and trees.

As the first arboretum at a university in Texas, the grounds are designed, planted and maintained by horticulture students. It also ser-

ves as a working/learning environment for students of agriculture, biology and forestry.

"The best way to learn plants is to work with them," says Dr. David Creech, Department of Agriculture professor. "Each student is assigned up to 1,000 square feet. They are required to seed the annuals in the greenhouse, plant the seedlings in a pleasing design and maintain their area. The first semester the students put out 10,000 bedding plants. The second semester they plant annuals in pockets around the established

trees and shrubs. They are creating beds of annuals in the bottomland.

"The student of horticulture at SFA has a real advantage. Not only is the Arboretum located next to the agricultural building, but the site is blessed with sloping hillsides, a fertile bottomland, a creek and two woodland glens. This variety of habitat provides the setting for a wide range of plant materials," Creech notes.

Students aren't the only ones to benefit from SFA's horticulture programs. The work and research

done there is of interest and benefit to gardeners throughout the state. Visitors to the on-campus site can observe and evaluate plants ranging from ferns to cacti; from camellias to pines. The bog garden, located at the southeast corner of the property in the LaNana Creek bottomland, is home to sweet bay magnolias, honeysuckle, azaleas and numerous types of hibiscus. Catchfly, inkberry holly, pale pitcher plants and other wetland species also are within view from the wooden cat-

walk which crosses the area.

"The East Texas bog was initiated in spring 1989. The plants are small, but they are thriving and multiplying in their new home," says Creech.

While the bog garden occupies the wettest spot in the Arboretum, the Mexico/West Texas garden occupies one of the driest. In addition to newly discovered species, the collection includes yucca, agave, alligator bark juniper, Mexican buckeye and western soapberry. Desert

willows, dogwoods and redbuds are included as well.

Except for the towering pine and oak trees already on the site, the Asian Valley is filled with trees and shrubs native to China, Japan and Korea. Many were introduced into the United States as a result of National Arboretum plant expeditions taken in the early 1980s.

"We have 52 varieties of Japanese maple, which is the largest collection (by varieties) in Texas. There are over 1,000 varieties available, mostly in Japan. These trees have color in spring and fall. They are tough in East Texas, although they are subject to windburn in July and August," says Creech. The Japanese maples are interplanted with azaleas, including southern indicas and kurumes.

Other collections include 52 creeping junipers, presented as a gift from North Carolina State University, and 12 English boxwoods (*Buxus sempervirens*). "The boxwoods came from the Mount Vernon Ladies Association of the Union. Inside the shipment was a note that read; 'The cuttings that make these English boxwood plants were taken from hedges planted during George Washington's time, November 1798,'" recounts Creech.

A Stout Medal series of daylilies, a gift from premier daylily breeder Jean Barnhart of Nacogdoches, lines the eastern wall of the agriculture building. The collection consists of the best variety selected each year by the American Hemerocallis Society, which has presented the award since the 1940s.

A large herb garden—funded, installed and maintained in part by the Herb Society of Deep East Texas is one of the newest additions to the Arboretum. The first phase, which includes raised beds, brick work, benches and a sundial, was constructed in September 1989. Eventually, the herb garden will occupy 10,000 square feet. The test gardens include culinary and medicinal herbs. A special bed will be set aside to display and evaluate native Texas herbs.

Native flowers and other plants are displayed near the agriculture building in a garden designed in the shape of the Texas. Wild foxglove, scarlet penstemon, cardinal flower

Before and After



The Arboretum is designed, planted and maintained by students. These shots show a "before and after" look at the central gardens. Each student is assigned up to 1,000 square feet of garden. They seed annuals in the greenhouse, plant the seedlings and maintain their area.

and Texas bluebonnets are favorites used in the planting.

"In the last five or ten years arboretums have begun to focus on conservation and propagation of rare and endangered plants. This is because the environment has been so dramatically degraded in the last ten years. About 10 percent of the plants in the United States are on the rare, threatened or endangered list. Since there are approximately 30,000 species north of Mexico, this

means 3,000 or more plants are threatened," Creech notes.

"Although the destruction of the Brazilian rain forest is attracting the most attention, we have problems in our own backyard. We are wiping out plant communities right and left. Wetland communities are under the greatest threat.

"Arboretums are beginning to generate a lot of interest, energy and outside support in their efforts to save the plant heritage of this

country. That is one of the mission statements of this arboretum. We are going to concentrate on natives of East Texas and we are going to pay particular attention to those natives that are threatened in their home," states Creech.

The adaptation of new landscape plants for East Texas is another goal set by the SFA Arboretum. "Our plant palette is very limited. We rely on about 20 shrubs for our landscaping needs when there are literally thousands of shrub and plant specimens that can be used in East Texas," says Creech.

According to Creech, the habit of landscaping homes and buildings with evergreen hedges around the



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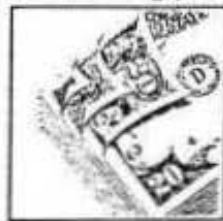
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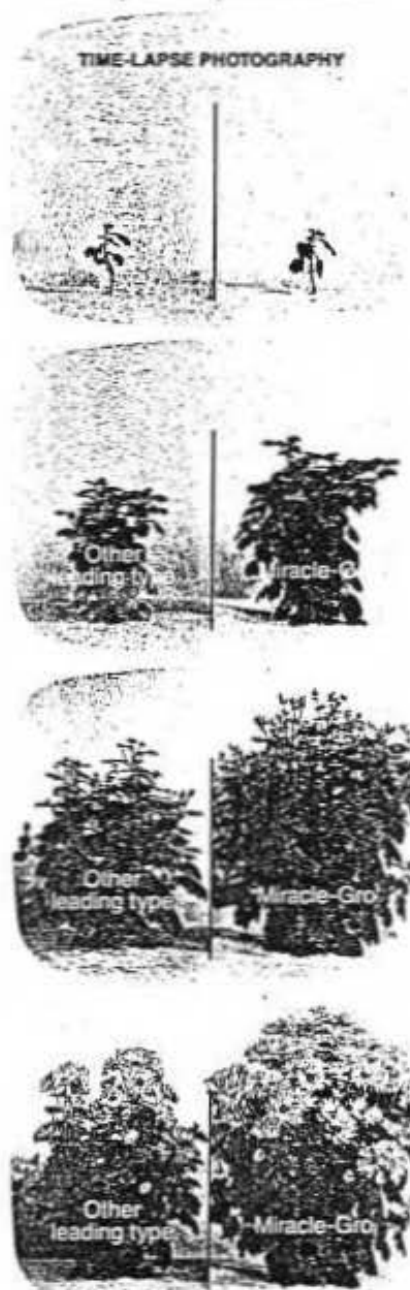
Students of horticulture at SFA grow 20,000 plants each year in greenhouses adjacent to the arboretum grounds. The plants are used to beautify the grounds and as fund raisers for student trips and projects.

foundations is a carryover from early pier-and-beam construction. "At one time almost all the houses in East Texas were pier and beam. They stacked up rocks, put logs across them and built a house. The underpinning of the house was exposed, so people planted evergreens to camouflage it.

"At the Arboretum we want to demonstrate and encourage diversification. A sprinkling of deciduous shrubs that produce flowers at different times of the year is an attractive alternative to a row of evergreens. Deciduous shrubs and

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Beautiful white blooms decorate the pearl bush (*Exochorda racemosa*).

evergreens can be interplanted for another effect," explains Creech.

In addition to introducing students and visitors to a myriad of plant materials, the Arboretum is a demonstration ground for horticultural techniques such as the mixed screen concept.

According to Creech, the screens are filled with trees, shrubs and occasional groupings of herbaceous perennials, annuals, groundcovers and vines. Large species of trees are planted closely together. When they are several years old, some will be removed and used as landscape specimens. A new tree can be planted to fill the screen or the spot can be left unplanted to give neighboring trees room to grow.

"A narrow living screen not only separates different garden vistas, it also serves as a low-cost resource for the campus replanting effort. The screens will simplify the task of mowing. While the screen is growing it contributes its own beauty to the landscape," says Creech.

The mixed screen approach also is being used to control erosion along LaNana Creek, which borders the eastern edge of the Arboretum. In this location, however, the screen of trees and shrubs will not be robbed for specimen plants.

"Although the creek normally runs less than 10 feet wide, occasionally heavy rains cause it to leave its banks. When the Arboretum accessed the land, the

banks were virtually cleared. Our approach to secure them was to overplant. We used tupelo, sweet bay magnolia, willow, swamp chestnut and other moisture-loving species. The mayhaw is a stream-loving type that will provide our understory foundation along the creek. It makes a further contribution by producing flowers and fruit," says Creech.

One of the most exciting new projects undertaken by the SFA Arboretum is its joint cooperation with the City of Nacogdoches and the Nacogdoches Chamber of Commerce in developing the LaNana Creek Nature Trail. This 2-1/2-mile trek stretches past the Arboretum into downtown Nacogdoches. The Arboretum is providing plant materials for the reforestation along the way. Upon completion the trail will offer exercise stations and picnic areas.

Anyone wanting to tour the Arboretum, either as a prospective student or an interested visitor, may do so seven days a week, from sunrise to sunset. For more information on SFA's horticulture program or the Arboretum itself, write: Stephen F. Austin State University Arboretum, P.O. Box 13000, SFA Station, Nacogdoches, TX 75962. ★

About the Author: Diane Morey Sitton is a freelance garden writer and a frequent contributor to GARDENS AND MORE.

The following contribution is penned by an enthusiastic volunteer, Mr. Kurt Whiting. Kurt has a passion for herbs and visitors to this latest section of the arboretum will be surprised at the scope and diversity of this new garden. The herb garden is a cooperative project with the Herb Society of Deep East Texas and the arboretum.

NOTES FROM THE HERB GARDEN
by Kurt Whiting

The past year has brought about significant change to the Arboretum. One of those changes was the addition of a formal herb garden South of the poly and glass greenhouses. Two theme gardens are partially complete: a grey-green garden and a fragrant pathway. These two gardens comprise one-tenth of the total area allotted for the quarter acre herb garden.

The grey-green garden was started after the first Herb Conference in February, 1989 and a ground breaking in May, 1989. With the assistance of Katherine (Kat) Williams McReynolds, a TAMU licensed landscape architect and former SFASU horticulture graduate, a garden plan was developed (see newsletter no. 8, August, 1989). Two horticulture graduate students: M.S. candidates, Charles Martindale of Roundrock and Rick Rankin of Conroe get all of the credit for the excellent back-breaking installation job. A careful eye can catch some wonderful on-site modifications from the original design. The railroad ties used were the generous gift of Mr. Curtis Pruett, Superintendent of the Texas State Railroad in Rusk. Chuck and Rick cut, fitted and rebarred the ties, then, back filled with sand and decomposed hardwood mulch. The sundial featured in the middle bed is an "in-loving memory" gift of the R.K. Lowrey family and the granite that the sundial is mounted on came from a Llano, Texas quarry and was wrestled here by Carl May, an undergraduate in the Horticulture program. The initial planting began in September, 1989 during an Herb Society workday. A dozen herbs were donated by Taylor's Herb Garden in Vista, California, a similar number of plants were donated by Mary Wilhite of Blue Moon Gardens in Chandler, Texas and the remaining plants were purchased at a discount from Teas Herbs & Orchids in Magnolia, Texas. Placed on a high and dry level plot with a southern exposure, this xeriscapic garden, grouped by genus when possible, includes:

Artemisia absinthium wormwood
A. vulgaris mugwort
A. ludoviciana silver king
A. schmidtiana 'nana' silver mound
A. frigida fringed wormwood
A. stellerana dusty miller
Salvia officinalis 'Holt's Mammoth' Holt's Mammoth sage
S. o. 'Aureum' golden sage
S. o. 'Tricolor' variegated sage
S. farinacea Mealy Blue sage
Poterium sanguisorba salad burnet
Stachys byzantina Lamb's ear
Helichrysum angustifolium curry plant

Rosmarinus officinalis rosemary
R. o. 'Albus' white flowered rosemary
R. o. 'Lockwood de Forest' Santa Barbara rosemary
R. o. 'Tuscan Blue' Tuscan Blue rosemary
R. o. 'Arp' Arp rosemary
R. o. 'Collingwood Ingram' Wood rosemary
Thymus vulgaris
T. x citriodorus lemon thyme
T. x citriodorus 'Argenteus' silver thyme
T. glabrescens Loeuyanus thyme
T. pseudolanuginosus woolly thyme
T. praecox 'Aureus' golden thyme
T. p. arcticus Mother-of-thyme
Lychnis cordonaria rose campion
Santolina virens green santolina
S. chamaecyparissus lavender cotton
Teucrium chamaedrys dwarf germander
T. lucidum silver germander
Lavendula angustifolia English lavender
L. a. 'Hidcote' Hidcote lavender
L. a. 'Munstead' Munstead lavender
L. latifolia latifolia lavender
L. dentata French lavender
Pelargonium spp. scented geraniums

In the fall of 1989, I contacted Henderson Brick Company in Henderson, Texas and asked them to help us by donating paving brick for the grey-green garden. Jim McMillin, Buddy Gresham and Bob Miller responded in October by delivering, in two shipments, 3700 pieces of grey paving stone brick. This contribution was a great boost to the further development of the herb garden project. The paving project would become part of a special problems course for Ft. Worth junior, Jeff Oakley. During the spring, 1990 semester Jeff was instrumental in constructing the terraced walkway that leads, via gray gravel steps, into the LaNana Creek flood plain and the bottomland plant collections of the arboretum..

The hard freeze (near zero) in December, 1989 did little damage to the herbs and provided the much needed dormancy that plants require in winter. We did lift the scented geraniums before Thanksgiving to over-winter them in a greenhouse as we will also do with the lemongrass this fall.

In January, 1990 Jeff Oakley began laying the brick. I helped him with some of the labor and brick cutting as did some of his friends and two members of the Herb Society of Deep East Texas (Allega and David Hackett). At the same time, Jeff began building the terraced walkway from the grey-green garden. With the help of Charles Martindale and Rick Rankin, Jeff used railroad ties to construct the step forms that would later be back filled with sand, covered with a weed barrier and topped with 2 yards of gravel donated by Mr. Jim Jenkins, Plant Manager at Nacogdoches Ready Mix Concrete Company on February 9, 1990.

February, 1990 was a busy month for the herb garden. We placed two concrete benches within the grey-green garden donated by the North and Central Herb Society of Ft. Worth, Texas and Lane Furnaux of Dallas donated money used to purchase a statue of St. Fiacre. The statue will be permanently secured within the garden. Placques will be placed on these items at a later date.

The 2nd Annual East Texas Herb Conference and Herbal Bazaar was held on February 17th. Over 300 people attended the day long program with the proceeds benefiting the future expansion of the herb garden. I would like to thank everyone involved with this successful event (sponsors, speakers, vendors, friends and attending public) and I look forward to an even larger turnout next February.

In March, lattice was erected along the North side of the grey-green garden as a visual barrier from the polyhouse and to support roses that are to be added in the future. Charles and Rick made another trip to Rusk. They brought back 150 more railroad ties from the Texas State Railroad which will be used for future projects within the Arboretum. March the 10th was the scheduled Arboretum workday for the Herb Society of Deep East Texas. Angelina County Extension Agent Floyd Yancy was our guest. Heavy rains that morning delayed the planting of a fragrant garden along the terraced walkway until the afternoon but, by then, the labor force was limited. It took two weeks of spurted effort to complete the scented garden, which now includes:

Pelargonium spp. scented geraniums
Mentha pulegium pennyroyal
Achillea spp. yellow yarrow
Vetiveria zizanioides vetiver
Cymbopogon citratus lemongrass
Aloysia triphylla lemon verbena
Melissa officinalis lemon balm
Monarda citridora lemon mint
Tegetes lucida Mexican mint marigold
Anethum graveolens dill
Artemisia annua sweet annie
Chrysanthemum balsamita costmary
Anthoxanthum odoratum vanilla grass

I invite you to visit the Arboretum and enjoy the many changes that are in progress. The arboretum has been blessed by a great surge of visitors this spring. Numerous garden clubs and elementary and high school classes have been led through the wonderful collection of plants. These scheduled and unscheduled tours, over thirty in the last two months, have been led by myself, Dr. Creech, Rick Rankin, Chuck Martindale, and Scott Reeves. The Herb Society of Deep East Texas appreciates the opportunity to educate the public about this special part of horticulture.

Herb Conference successful

By EDWARD GATELY
Sentinel Staff

The second annual East Texas Herb Conference and Herbal Bazaar last weekend at The Fredonia hotel was well received by the more than 250 persons who traveled from around Texas and Louisiana to attend, said Kurt Whiting, founder of the Herb Society of Deep East Texas.

"We pre-registered 220 people, and sold a total of 270 tickets," he noted. "With the speakers and vendors, over 300 people attended this year's conference. We had three times, almost four times as many people this year as we had at last year's conference. We had people from Lubbock, Brownsfield, Houston, Dallas, Shreveport and many other cities here Saturday."

Several speakers made presentations during the conference, including Mayor Judy McDonald, Stephen F. Austin State University Agriculture Professor David Creech, Janis Teas of Teas Herbs & Orchids, Michael Soup Jr. of the Antique Rose Emporium in Brenham, Overton extension agent Marty Baker, herb educator Adell Campbell, Jane Hawley Bohlman with Nature's Acres Gardens, Dr. Donna Smith and Lonnie Samek.

"There were also many more vendors this year, with everything from plants to crafts, and door prizes," Whiting noted. "During the conference, 150 people showed up to tour the Stephen F. Austin State University Arboretum and the herb garden."

Interest in growing, cooking with and using herbs for medicinal purposes is increasing as indicated by those who attended the conference, he said. In addition to expressing interest in the arboretum and herb garden, several guests donated herb plants, which have been planted in the herb garden.

"I solicited a guest to donate 800 square feet of fragrant herbs to be planted next to the herb garden walkway," Whiting said. "We wanted to attract a large number of people, so we had to offer a lot. With the number of speakers there, everyone had to have learned something new."

The proceeds from the conference will be used to support the SFA herb garden and will cover some of the society's travel expenses, he noted.

back next year," Whiting said. "We're planning an even bigger conference next year, but we're probably not going to have as many speakers as we did this year. It was a long day. We're

also going to have it in the Nacogdoches Convention Center at The Fredonia hotel instead of in the Banita Ballroom so there will be more space for more vendors."



Staff photo by Hardy Meredith

Growing interest in herbs: As indicated by the more than 250 persons from around Texas and Louisiana who attended last weekend's second annual East Texas Herb Conference and Herbal Bazaar, interest in growing and using herbs in a variety of ways is swiftly increasing. Kurt Whiting, founder of the Herb Society of Deep East Texas (left), and David Creech, professor of agriculture at Stephen F. Austin State University, participated in the conference.

The Daily Sentinel, Nacogdoches, Texas,

Sunday, February 25, 1990

The following "Notes from the Bog" is a contribution from Mr. Peter Loos, a former student, employed by Will Fleming Nursery and Landscaping, Tomball, Texas. Peter is one of those rare students with a special passion for the native plants of east Texas.

NOTES FROM THE BOG

BY
PETER LOOS

A bog is a unique and uncommon type of wetland ecosystem. There are several factors that distinguish a bog from other types of wetlands. First, bogs are more like grassland prairies than forest wetlands or marshes. Wetland forests are usually called swamps. Marshes are coastal grasslands with high saline levels. There is water movement in a bog and it can drain away from the site or slowly seep into the soil. The poor water movement is sometimes caused by the meeting of two different soil types. This is a "hanging bog". The movement of water prevents the site from becoming stagnant, though the site remains wet most of the year. There are two plant species one can use as an identification tool when trying to determine if an ecosystem is a true bog: Pitcher plants (Sarracenia spp.) and sphagnum moss (Sphagnum spp.). Natural boggy conditions are uncommon in most home gardens but having an area like that allows the landowner to prosper with a garden theme accenting colorful bog plants. It is possible to create such conditions artificially in certain places but one must be able to duplicate numerous requirements with little room for variation away from the plant materials natural habitat.

The SFASU Arboretum bog garden began as a flood plain, winter-time mud puddle that was serving no purpose. At the time, I was an undergraduate majoring in Horticulture and minoring in Botany, due mainly to my interests in gardening with native plants. In December, 1987, while working on a special problems course in wildflower propagation I found I had spare time which would allow me to work on a side project. After getting Dr. Creech to agree on a "bog" project, I amended the soil in the puddle area with pinebark, peat moss, and a little sand. I tilled in each ingredient one at a time to get an equal mix with the native soil material.

This initial article will give a basic overview of what plants are in the bog garden area and how they were planted in relationship to one another. Future "notes" will discuss particular species or genera in more detail. Readers will be kept up to date on additions to the bog garden.

The bog garden is located on the southeast corner of the Arboretum and lies next to LaNana Creek. The south side of the bed

is backed by steep loamy mounds and is shaded and opens to the sun on the North side. Water drains into the bog from the north (same flow direction as the creek) down to swales which meet in the middle, draining through the back of the bed and out to the creek. By carefully managing the final drainway's overflow the level of water in the bog can be held at several inches for many days.

In the sunny, northern end are the meadow bog plants: Sarrezenia alata (pitcher plant), Coreopsis gladiata (bog Coreopsis), Marshallia spp. (Barbara buttons), Eriocaulon decangulare (pipe wort), Aletris aurea (Colic Root), Physostegia puchella (False dragonhead), Pignanthium spp. (Wetland mountain mint), Dichromena latifolia (white top sedge), Helianthus angustifolia (swamp sunflower), Muhlenbergia spp. (Gulf coast muhly grass), Liatris pycnostachya (Gayfeather), Hibiscus militaris (white and pink rose mallow), Hibiscus leucophyllus (Hibiscus swamp mallow), Viola spp. (scattered pockets of woodland violets).

As you wander further into the bed into the shade, I have set the bordering shrubs: Cliftonia monophylla (Buckwheat bush), Cyrilla racemiflora (Cyrilla, titi, or leatherwood - Texas and Alabama strains), Ilex vomitoria 'Will Fleming', Styrax grandifolia (Big Leaf Snowbell), Rhododendron oblongifolia (white swamp azalea), Ilex glabra (Inkberry holly), Ilex coriacea (Gallberry holly), Leucothoe racemosa (sweetbells leucothoe), Iris psuedacoris (Yellow flag iris), Crataegus brachyacantha (blueberry haw), Crataegus opaca (mayhaw), Viburnum nudum (possum haw viburnum), Viburnum nitidum, Sabal minor (palmetto), Magnolia virginiana var. australis (evergreen sweetbay magnolia). The catwalk that wanders through the bog was built by Chuck Martindale and Rick Rankin in the spring of 1989. A ring of railroad ties planted to sweetspires (Itea virginica) defines the bog garden's northern and eastern edge.

The garden needs to have a transfusion of ferns incorporated into the bed mostly under and around the shrubs. The bed border has been carried to the creek (east) and creates a large area in full sun, a prime location for a wetland Iris collection. Additions in the near future will include more native azaleas, wetland mosses, and native grasses.

The garden will receive new plantings of perennials, biennials, and annuals. In early spring, 1990, I added two species of Giant coneflower (Rudbeckia nitida and R. maxima), meadow pink (Sabatia campestris), winecup (Callirhoe spp.), bush pea (Baptisia shaerocarpa), False Indigo (Baptisia leucophea), Blue false Indigo (Baptisia australis), Gayfeather (Liatris acidota), Larkspur (Delphinium carolinianum), Single stem scurfpea (Psoralea simplex), St. Johns Wort (Hypericum alioides), Blue skullcap (Scutellaria integraefolia), Wild coss sunflower (Helianthus angustifolia X H. maximillian) and there will be many others bound to find a happy home in the Arboretum bog collection.

One of the most interesting plants in the the garden is also one of the most difficult to nurture outside of its natural habitat. The fact that our pale pitcher plants, Sarracenia alata are not only surviving but are thriving is one of the garden's biggest surprises and best successes. Pitcher plants are carnivorous (insectivores) herbs with tubular leaves and large, nodding flowers borne singly or in racemes at the end of a long stalk. Pitcher plants are classified botanically as being members of the Sarraceniaceae family (pitcher plant family) and according to The Audubon Society Field Guide to North American Wildflowers Eastern Region, the family consists of "3 genera and 17 species in North America and northern South America; in the U.S. all but one are in the east." A few species are grown as curiosities and collecting for this purpose threatens the rarest types. Several species are classified as endangered or threatened in many states. In general, the leaves are basal, long, commonly with a decorative opening to the tube. The fruit is a 3 to 6 chambered capsule, with the outer covering rough with short firm sharp projections. The seeds are numerous, warty, and winged on one side. The flower or inflorescence are radially symmetrical with the sepals numbering 4 or 5 and often petal-like; the five petals are accompanied by 12 or more stamens. All the parts are attached to the base of the ovary, which in turn is topped by an umbrella-like style. The flowering period is from spring to early summer (anywhere from March to June) with the native east Texas species flowering from March to April. The specimens in the bog tend to be somewhat later than that. I think this is due in part to the garden's location leading to a later dormancy in most of the other plant species planted as well (I'd like to point out the other seasons are also offset accordingly).

In the bog garden there are three specimens of Sarracenia alata from east Texas. There are also specimens of this species from three separate locations in southeast to south central Mississippi: south of Lucedale at the eastern state line, just outside of Picayune, and north of Picayune. The Picayune specimen has a variation in flower color in that it is a lighter yellow. The three specimens from east Texas were the first plants I placed in the garden. They were obtained for the garden with the help of fellow undergraduate student, Scott Reeves, who, along with Mark Bronstad, another Horticulture student at the time, helped make the original bed. The Mississippi specimens were added during the spring of 1989 and were obtained on a nursery-visiting field trip I took to Alabama with Will Fleming of Will Fleming Landscaping, Tomball, Texas, my present employer and an unrivaled plant enthusiast. On that same trip to Alabama were horticulturists Lollie Jackson and Joe Tate, both of Houston. Lollie owns a magnificent garden which contains many bog plants along with numerous other species and ecosystems represented around her property.

For anyone who would like to see a natural pitcher plant bog while in east Texas the Forest Service maintains one with a parking lot, trails, and catwalks outside of Warren, Texas. To get to it

from Warren, take FM 1943 approximately five miles east and look for the sign at the corner of an unpaved road on the right side and then again at the entrance to the parking lot. If coming from the other direction (east) look for the turn for FM 1943 one mile south of Fred, Texas.

Always remember pitcher plants have a very sensitive habitat and do not tolerate improper conditions. They are rare, don't transplant well and should not be dug or collected in the wild. If you would like to try pitcher plants in your garden, purchase them from a reliable nursery source or collect seed and try to grow them yourself. I am presently propagating them from seed. The method I am using is the same as for most wildflower seeds. I take a shallow plastic flat and fill it with potting soil and on top I lay a thin layer of sphagnum moss pressed down and then scattered with seed. This is done in late fall (collect the seed in late summer and store in a dry, cool place until planting time). I collected my seed late, not getting to the wild bog until early November. The seed was cleaned and planted in late November, 1989. The plants germinated in late February and are doing well at this writing. Another method is recommended by Harry Phillips who states in his book, Growing and Propagating Wildflowers, that "the best media is a mix of equal parts peat and coarse vermiculite." He goes on to report that you should sterilize the plastic pot in dilute chlorine bleach. Water the soil in the pot with a fungicide (Benomyl) drench and allow excess water to drain through. Sow fresh seeds or stored seed on the top of the soil. Don't cover the seed; this could create problems when it comes time to separate seedlings. Place pots in a tray of water approximately 1/4 to 1/3 up the side of the pot. Don't water from overhead because splashing could cause problems. Allow a full year for seedlings to establish a good root system before transplanting. Remember the bog garden as well as the rest of the SFASU Arboretum is open year round. The pitcher plants are at their best in April and May. Happy gardening!

The following "Notes from the Perennial Border" is a contribution by Scott Reeves, a graduating senior in Horticulture. Scott and Doug Hine are responsible for the new 150-foot border that graces the woods on the southeast corner of the Agriculture/Art parking lot. Scott is preparing for his graduate work at Colorado State University and will be studying the adaptation of new garden perennials in their test plots. Doug is destined for a biology or horticulture master's degree at Stephen F. Austin State University.

NOTES FROM THE PERENNIAL BORDER

BY

SCOTT REEVES

With the end of spring and another semester, the Arboretum has blossomed into several new arenas with more accomplished in the last year than in several years before. Many of our hopes and dreams have been accomplished through special projects with Dr. Creech. Creech always says that the "Arboretum is a place for all to learn and grow" and I know that the last three years of my life have been well spent in the service of our botanical garden. My last contribution to the Arboretum has consisted of growing and propagating select perennials for a special informal border. Last fall, Doug Hine and I began propagating just about anything of rare and beautiful interest to us and before long, we were the proud parents of almost a hundred species of native and cultivated perennials.

Our quest began last fall as Doug and I planned to undertake a special topics course (Agriculture 475) in the Arboretum under Dr. Creech's supervision. We researched many seed and plant sources, finally deciding on a few vendors who specialize in native and rare cultivated plant materials. As the seed arrived from all over the nation, Doug and I soon realized what a tough chore lay ahead. We began sowing and were soon transplanting the collection into one gallon containers. The small plants were nursed through the winter in our greenhouse, pushed with fertilizer in late winter and set into the border in late March. The decision to go with one-gallon containers was made because it provided us with a chance to achieve a dramatic plant size and color effect in even the first year, something not always easy to do with a perennial border. As soon as March arrived, Doug and I moved the collection to the shade house to allow it to "harden" off a bit before setting plants into the border.

Starting back last fall, Doug and I began preparing the site. The bed was amended with about 50 yards of composted pine bark and about twenty yards of composted chicken litter, the latter to boost the fertility for the perennials to come. The mixture was tilled to about twelve inches and allowed to mellow during the winter.

Doug and I were concerned about the down-time (non-flowering time) of our bed, so we tried to spread the flowering times of the species over the total growing season: not an easy task! We accomplished this by using bulbs (daffodils, crocus, hyacinths, and tulips) while at the same time, offsetting with early and late-bloom perennials. The goal was to never have a period during the year when there wasn't something in bloom providing color.

It would be futile to discuss all of the species; they must be seen to be enjoyed and appreciated. A few are worth mentioning. Standing cypress, Ipomopsis rubra, has become one of my favorites. It is a native, thrives on dry, sandy sites and is three to five feet tall with flower spikes that are very eye-catching. The beautiful plant with red trumpet-shaped corollas should be in everyone's "dry" garden. Another species, new to me and now a favorite of Dr. Creech, is Silene armeria, Catchfly. This plant is a graceful sprawling perennial to two feet with long-lasting pink blooms in the spring. The foliage is soft and succulent and the plant can be described as graceful when planted in colonies of five to seven plants. The perennial bed has five species of ornamental grasses but our favorite is the Purple Fountain Grass, Pennisetum setaceum. Although this plant acts as an annual in our area, its graceful qualities could not be overlooked. The foliage is a maroon-crimson color with flower spikes of the same color arising on long stalks above the foliage. The plant is best served as a companion plant. It is often used to help give leaf texture diversity, while at the same time, providing graceful wind-blown motions among its neighbors. These are only three of many. With nearly one thousand one-gallon container plants, the perennial border will be an asset to the arboretum for years ahead.

Think about adding perennials to your garden. Yes, they do cost a bit more than annuals but they return years and years of beauty to the landscape. Once well-established in the garden, they can hold their own against weeds and need less care than newly established annual beds.

The following is an article by yours truly that appeared in the Native Plant Society of Texas News, May/June 1990, volume 8(3): page 3. It is reprinted here with their permission.

THE SWEETSPIRE - A NATIVE OF MERIT

Sweetspire, Itea virginica, is an underutilized east Texas native of much merit. Sadly, the performance of this plant in the first two or three years is no indication of what's to come once the plant is well-rooted in the landscape. In the nursery container, the plant is often a few straggly limbs blessed with a rather thin crop of unimpressive foliage. The fact that it thrives in the moist, seepy woodlands of east Texas hides this plants wide range of adaptation. It's true that plenty of water in the first year is essential to survival but, after that, the plant gets along quite nicely on only occasional waterings and generous applications of bark mulch.

Itea virginica is a member of the Saxifragaceae family and is one of perhaps fifteen species of evergreen or deciduous trees or shrubs and is the only species from North America. We have tested five other species at the arboretum and only Itea japonica has prospered. It offers no advantages over our beautiful native. Itea illicifolia (interesting holly-like leaves with very long inflorescences), yunnanensis, chinensis, and oldhamii have been finicky in the arboretum and their performance disappointing.

Sweetspire has a lot going for it; it's easy to maintain, has few insects and diseases, has a long four to six week conspicuous bloom period, and finishes off the season with a burst of red/orange foliage. If the winter is mild (15°F or greater), leaves remain persistent and showy. A Zone 6 plant, mid-winter cold is not a problem (our plants suffered no damage during the Christmas, 1989, plunge to 0°F). At the Arboretum, we have sweetspires in full sun and part shade. The plant has prospered in both locations but is denser and much more floriferous in full sun. The mound-shaped shrub is easily maintained at three to four feet tall and wide with only one or two annual prunings; heading back cuts encourage more terminal tips and, thus, more flowers. If bark mulch is plentiful, the plant quickly forms a dense thicket, is only moderately invasive, and then only if mulch is abundant.

Flowers are dense, upright, terminal, tassel-like spikes that vary from two to six inches long. In the Arboretum, 'Swarthmore' has provided deep-red fall foliage color. 'Henry Garnet' is harder to find and is blessed with long flower spikes. Both varieties are worth seeking. Further selections from the native stands of east Texas should enhance the plant's potential even further. The May-June perfumed blooms are white at first, then fading to an attractive cream. The plant is considered to be resistant to salt, drought, heat, and soil compaction problems. Leaves are alternate, simple, obovate to oblong obovate with fine bristle-like teeth and are aromatic when crushed. To maximize fall foliage color

intensity it is best to reduce nitrogen fertilization and allow a few dry spells in the fall. Root systems are shallow, lateral, and fibrous. Propagation is easy by cuttings almost any time of the year. The lateral root suckers can be pulled up and replanted in early winter: another easy way of expanding plant numbers. Like azaleas and blueberries, container plant root balls should be broken up prior to planting to encourage better soil/root interface contact.

In the landscape, the plant is best presented in small colonies. The plant is at its finest in the company of Snowbells, native azaleas, Clethras, and other woodland beauties. If possible, position plants on sandy stream banks or anywhere roots can reach perpetually wet soils. Pine bark mulch additions improve plant vigor and reduce water use.

While native to east Texas only, the plant can perform quite well in gardens further west if siting and soil preparation are carefully considered. High pH, tight soils should be given copious amounts of pine bark, compost and/or peat moss. For the gardener looking for something a bit different the sweetspire is worth the effort. The gardener patient enough to wait the three or four years for this plant to "fill out" will be blessed with a Texas native pouring out landscape interest in all the seasons.

The following is a paper by Mr. Rick Rankin, graduate research assistant in Horticulture. Rick's thesis project involves a site analysis and master plan for the SFASU Arboretum - a project that includes mapping the property on two-foot contour intervals and analyzing the soil, climate, and hydrology of the arboretum.

ALTERNATIVE NATIVE LANDSCAPE PLANTS
FOR EAST TEXAS
BY
RICK RANKIN

It is interesting that most of the trees used in east Texas landscapes are natives and most shrubs are not. The average landscape in our area will have an abundance of Photinias, Ligustrums, Azaleas, Boxwoods, etc.- most if not all of these coming from Asia. Typical shade trees in landscapes of East Texas include pecan, oaks, pines, etc.- almost all of them natives.

Traditions of our plant heritage appear to be the reason behind this dichotomy. Settlers were too busy worrying about survival to be concerned with landscaping their property. After security and some prosperity settled in, Americans were eager to surround themselves with familiar plants from their homeland. Showy, flowering plants were preferred for the home site and were not often available in the native flora. It was easy for early settlers to move small shrubs, cuttings, and seeds from one location to another.

If we can get non-natives that flower so brilliantly, you might ask why should we preserve native plants? The answers to that question, fall into two general categories:

* Ecological Reasons-

These have to do with how plants function in ecosystems. Extinction, the ultimate catastrophe for a species, is a one-way passage. Species are products of thousands or even millions of years of evolution. Once they are lost, replacement is so slow that, in the human time scale, it does not happen (Flint, 1987).

* Human Reasons-

Although we may not recognize the fact, our dependence on other species for food, shelter, and medicine is well known. It is not so well known or understood that we are also gripped by a psychic dependence on other species which make our surroundings familiar to us. In doing that, native plants give us a sense of protection, comfort, peace, and even inspiration. In the richness of their diversity they contribute to our human delight (Flint, 1987).

* Other Reasons-

Many native plants are more adaptive to the xeriphytic approach of landscaping once established.

Xeriscape (ZIR-I-SKAP) noun.

The conservation of water and energy through creative landscaping. From the greek word Xeros meaning "dry." Landscaping with xeriphytic plants have seven principles to follow:

1. GOOD LANDSCAPE DESIGN
2. USE MULCH
3. LIMIT LAWN AREA
4. CHOOSE XERISCAPE PLANTS
5. IMPROVE SOILS
6. WATER EFFICIENTLY
7. PRACTICE GOOD MAINTENANCE

There are many good reasons to xeriscape. Besides creating an attractive and less demanding landscape, a properly maintained xeriscape can conserve a considerable amount of water. Each year, Fort Worth area residents pour more than 11 billion gallons of water on their lawns and gardens, enough water to fill Lake Worth.

The cost of providing a safe and plentiful water supply continues to rise. The average Fort Worth resident's water bill more than doubles during the summer months of June to September. As much as 50 percent of this additional water is used to irrigate lawns and gardens. Landscape experts agree that a lawn can be maintained in an attractive and healthy appearance with up to 50 percent less water than is typically used.

Practicing the xeriscape principles will allow you to continue to have an attractive and pleasing landscape. Using all seven principles will result in the highest water savings. Not every principle can be applied to each landscape but by using those that do apply, you will save water as well as your time and money.

Establishing plants in new landscapes is not an easy task to do here in East Texas due to the varied climate of the region. One week the soils can be as dry as powder and the next week, they are totally water logged. When establishing new plants in the landscape, special attention must be given to soils and how they drain, plant quality, plant selection for certain locations, time of planting, watering and water quality, and insects and diseases.

Native plant communities are useful in many types of landscapes, including urban sites. Even when native communities cannot be reintroduced, native species are still useful. Natives best use in such situations may be in artificial but visually compatible groupings, combined with non-native species that are fitted to the site because of adaptation to similiar conditions in other parts of the world where they have evolved. In mixed (native and non-native) landscapes, we attempt to imitate or extend beyond nature's exemplary combining of plant species. "In selecting plant combinations, we set out to achieve in a mortal life span what has taken nature thousands of years to accomplish" (Flint, 1987).

To select favorite native trees and shrubs is no simple chore because all can be appreciated for what they are in their own surroundings: magnificent. The following list includes many natives that provide dependable growth and vigor, freedom from insects and diseases, and a long life span, and should bring happiness to the owner's heart.

AQUIFOLIACEAE

- Ilex ambigua Carolina holly
 Height: 6 - 12 feet
 Leaves: dark green (deciduous)
 Flower: white, April-June
 Landscape value: use as per deciduous holly, very uncommon in east Texas usually found here and there on very sandy soils in small plant communities, berry interest, excellent multi-stem specimen candidate.
- Ilex decidua deciduous holly
 Height: 7 - 15 feet
 Leaves: dark green, lustrous changing to yellow in the fall (deciduous)
 Fruit: orange to scarlet, September
 Landscape value: gaining in popularity, mult-stem specimen, red and orange berried cultivars available.
- Ilex glabra inkberry
 Height: 6 - 8 feet
 Leaves: lustrous dark green sometimes yellow green (evergreen)
 Fruit: black berry, September-May
 Landscape Value: wetland native excellent for foundation, hedges, masses, or as an accent plant
- Ilex verticillata coralberry
 Height: 6 - 10 feet
 Leaves: deep rich green (deciduous)
 Fruit: bright red, August-September
 Landscape Value: excellent for mass effect, water side and wet soils, needs male and female for fruit set, numerous cultivars now available that offer fall leaf color and berry diversity.

BIGNONIACEAE

- Bignonia capreolata cross vine
 Height: depends on structure, will climb 30 - 50 feet
 Leaves: dark green turning reddish purple in cold weather (semi-evergreen)
 Flower: orange to red trumpet shaped, April-June
 Landscape Value: excellent for covering a trellis or fence, place in full sun for most flowers; our red-flowering specimen on the bridge between AgArt parking lot and Hort facility is an eye-catcher.

Quercus lyrata overcup oak
 Height: 30 - 50 feet
 Leaves: dark green and leathery changing to tannin brown in fall
 (deciduous)
 Fruit: almost entirely covered, hence the name
 Landscape Value: good choice for difficult sites (flooding and
 slopes).

Quercus shumardii shumard oak
 Height: 50 - 70 feet
 Leaves: dark green and lustrous, turning orange in fall
 (deciduous)
 Landscape Value: very desirable due to unique leaf shape, works
 well as an accent plant, brilliant fall color.

Quercus stellata post oak
 Height: 40 - 60 feet
 Leaves: dark green, cross shaped with rounded edges (deciduous)
 Landscape Value: dense round topped crown with stout spreading
 branches.

Quercus incana bluejack oak
 Height: 12 - 30 feet
 Leaves: grayish green above, white below (deciduous)
 Landscape Value: small, nicely shaped tree for poor sandy sites.

Quercus michauxii swamp chestnut oak
 Height: 20 - 60 feet
 Leaves: dark green lustrous above, silvery white pubescent below
 (deciduous)
 Landscape Value: grayish flaky bark, heavy mast producer for poorly
 drained sites.

Castanea pumila Allegheny chinkapin
 Height: 12 - 20 feet
 Leaves: yellowish green above, white pubescent below (deciduous)
 Fruit: nut enclosed in a bur with spike like clusters
 Landscape Value: most trees form clumps resulting from repeated
 dieback and sprouting.

HAMAMELIDACEAE

Hamamelis virginiana witch-hazel
 Height: 20 - 30 feet
 Leaves: medium green changing to yellow in fall (deciduous)
 Flower: yellow fragrant, October-December
 Landscape Value: works well in a shrub border, near buildings in
 shaded areas.

HIPPOCASTANACEAE

Aesculus arguta Texas buckeye
 Height: 15 - 20 feet
 Leaves: rich green lustrous, 7-9 leaflets (deciduous)
 Flower: yellow 4-8 inches, March-May
 Landscape Value: stunning in early spring as leaves are unfurled.

Aesculus pavia

Red buckeye

Height: 10 - 20 feet

Leaves: dark green lustrous, 5 leaflets (deciduous)

Flower: red to white, March-May

Landscape Value: handsome tree in flower, best in full sun.

LEGUMINOSAE

Gleditsia triacanthos

honey locust

Height: 30 - 70 feet

Leaves: bright green changing to yellow in fall (deciduous)

Flower: greenish yellow, fragrant

Landscape Value: excellent lawn tree for filtered shade; 'inermis' is without thorns and much preferred.

MAGNOLIACEAE

Magnolia grandiflora

southern magnolia

Height: 60 - 80 feet

Leaves: lustrous dark green above, pubescent below (persistent)

Fruit: rose red

Flower: creamy white and fragrant, 8-12 inches, May-June

Landscape Value: handsome, worthwhile tree, needs room to develop.

Magnolia macrophylla

bigleaf Magnolia

Height: 30-40 feet.

Leaves: 12-32 inches long, 7-12 inches wide, bright green and glabrous above, silvery gray and downy below, (deciduous)

Flower: creamy white, 8-10 inches across, 6 petals, fragrant, June

Landscape value: A round-headed, cumbersome landscape specimen; needs to be positioned out of the wind; giant leaves main interest but flowers impressive as well; litter problems makes this a better woodland plant than a specimen for the well-manicured yard.

Magnolia pyramidata

pyramid magnolia

Height: 25 to 40 feet

Leaves: 6-8 inches long, bright green above, (deciduous)

Flower: 6-15 petalled, 4 inches in diameter, creamy white

Landscape value: a rare plant in Texas known only from one provenance on the Jasper/Newton county line. A slender tree with ascending branches; likes moist rich soils; works well along creeks or streams, adds flavor to the landscape with leaf and bark interest; worthy of reintroduction.

Magnolia virginiana

sweet bay

Height: 10 - 50 feet

Leaves: dark green above, white below (deciduous)

Flower: creamy white, lemon scented, May-June

Landscape Value: graceful small specimen tree, foliage is handsome in wind as it buffets the leaves exposing the underside.

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