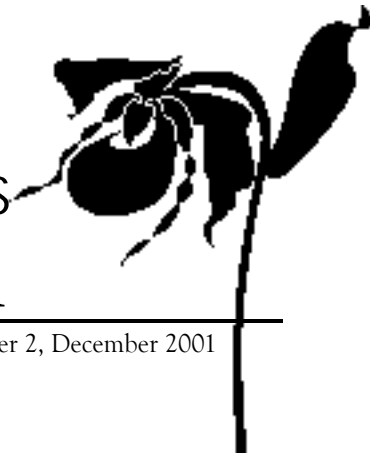




Happy Holidays



ILLUSTRATED FLORA OF EAST TEXAS NEWSLETTER

An Illustrated Texas Floras Project ♦ Volume 2, Number 2, December 2001

State of the Flora



George Diggs began his summer residency at BRIT with one goal in mind: to write the treatments and keys for the grasses of East Texas. And, this he did. Over 45 grasses were added to the species list, bringing the total to 413 species, subspecies, and varieties. Some of the grasses already on the list, formerly at the species rank, were reduced to varieties, and conversely some varieties were raised to the specific level. All of the latest journals and publications were consulted to give the most up-to-date information. Voluminous specimens from the BRIT herbarium were poured over and studied in an attempt to create accurate and useable keys specifically designed for the East Texas grasses. The last family that needs to be treated is the sedge family or Cyperaceae. George will take time during his winter break from Austin College to tackle this family along with help from Barney Lipscomb (his area of expertise). Much of the work on this family, however, has been done through the generous contribution of the key and treatments of its largest genus, *Carex*, by Stan Jones.

Several families have now reached the point where they are ready to be sent to experts in the field for review. The fern/gymnosperm portion of the manuscript has been sent out for review and some of the smaller families will go out soon. These include the families Alismataceae composed primarily of aquatic plants such as the arrowheads, the Potamogetonaceae or pondweeds which are also aquatic, and the Hydrocharitaceae

which includes the aquatics, *Hydrilla*, *Egeria*, and *Vallisneria*.

One of George's students, Cole Weatherby, joined us this past summer as a research assistant. He proved to be quite an asset. His most obvious accomplishment was the revamping of the *Illustrated Flora of East Texas* webpage found at: <<http://www.easttexasflora.org>>. The page can also be accessed through the BRIT website: <www.brit.org>. Navigate from the main page to the research page and click on the highlighted text. Cole redesigned the graphics and added several new components to the webpage. Now, you can access the monocot species list for East Texas and the keys and manuscript to the ferns and gymnosperms of East Texas. And just recently he has put up the **entire** *Illustrated flora of North Central Texas*. All of these are in PDF format, and require the use of Adobe Acrobat 5.0, which can be downloaded from the East Texas website. He assisted George in the herbarium and on field excursions. He also began work on an appendix dealing with the important timber trees of East Texas. And last, but not least, Cole got a good head start on the master list for the East Texas dicots.

The East Texas team feels that they are on schedule for the 2003 completion date for the first of the two-volume set which treats ferns, fern allies, gymnosperms, and the monocots.

Botanicus Trivialis (from <uselessknowledge.com>)

The average daily growth of a bamboo plant is 35.4 inches.

The average pollen grain is less than the width of a human hair and can travel as far as 400 miles and up to two miles high in the air.

The cashew tree is related to the American poison ivy and poison sumac.

The deadliest plant in the world is the castor bean plant. It is estimated that the protein, ricin, found in the castor bean plant is 6,000 times more poisonous than cyanide.

It takes 4,000 crocuses to produce a single ounce of saffron (composed solely of the stigmas). Saffron is used to color and flavor foods, and was formerly used as a dyestuff and in medicine.

Species Spotlight

Corallorhiza wisteriana Conrad

Common name: spring coralroot

Orchidaceae (Orchid Family)

I still remember the first time I discovered spring coralroot in the field. It was about 15 years ago along Bonita Creek on the western edge of Nacogdoches. It was an early, gray spring day. Walking along a raised bank of the creek, I came upon its singular, reddish stem thrusting through the crisp, oak leaf litter. Being new to the East Texas flora at the time I did not know what it was but I knew it was something very special. Though rather small, this one only about six or seven inches tall, and comparatively drab in its muted red-brown tones, the flowers were exquisitely delicate. They were in hues of red to purple on a diffuse, off-white background. At that time I knew nothing about this subtle little gem found in East Texas.

Spring coralroot is so called because it usually flowers in April; secondly, as can be seen by the illustration, its roots are somewhat coral-like. In fact, the generic name means coralroot. This species was named after its discoverer Charles Jones Wister (1782-1865). A feature that distinguishes this plant is its mode of nutrition.



from: "Flora of Texas" vol 3, C.L. Lundell and collaborators, Texas Research Foundation, 1961

Corallorhiza wisteriana

Unlike the majority of flowering plants, coralroot has no chlorophyll and instead of photosynthesizing its food it is a mycotrophic saprophyte (obtains its food from dead organic matter with the help of fungi). It is one of 15 species of coralroot found in temperate regions, all of which are saprophytes. It can vary from about four to 15 inches tall and the flowers measure about half an inch.

It is one more example of that exotic family, the orchids, that can be found in East Texas.



BRIT Bits

—Robert George traveled to Longview in November to give a presentation on identifying grasses to the Northeast Chapter of the Native Plant Society of Texas. He was very warmly received and cared for. Anyone wishing to have a speaker, for his or her organization, on identifying grasses can contact him at <rgeorge@brit.org>.

—The Tyler Chapter of the Native Plant Society of Texas made a visit to BRIT on November 17th to tour the herbarium (almost one million specimens) and botany library (75,000 volumes). Before leaving they donated a book to the library. So you can make that 75,001 volumes!

—Two new species of *Liatris* (gayfeather) named by botanists at BRIT—

Guy Nesom, research botanist at BRIT, and **Bob O’Kennon**, a BRIT associate researcher and board member, named the two new species. *Liatris aestivalis* and *Liatris glandulosa* are both found in North Central Texas. *Liatris aestivalis* also extends into south central Oklahoma. These *Liatris* species were each named for one of their most distinguishing characteristics. *Liatris glandulosa* is distinguished by its stalked glands, and *Liatris aestivalis* is distinguished by its early flowering time in the summer (“aestivalis” means ‘pertaining to summer’) as opposed to the fall for other species.

—Books received in the BRIT library

Stuart Gentling and Scott Gentling. 2001. **Of Birds and Texas**. (ISBN 0-292-72834-4, hbk.) University of Texas Press, P.O. Box 7819, Austin, TX 78713-7819, U.S.A. (Orders: <http://www.utexas.edu/utpress>, 512-471-4032). \$75.00 hbk., 228 pp., 50 color plates, 28 color remarques, 8 figures.

Of Birds and Texas is a smaller edition of the original elephant folio limited edition published by the artists in 1985. It is an extremely personal work, if that word can be used of two people. They have written essays detailing the history of this publication and their fascinating research on John James Audubon to whom the folio edition was dedicated. In addition each plate is accompanied by a brief explication of their own relationship to the subject of the painting. The volume was meant to read and so includes an essay, *Self Portrait with Birds*, by the nature writer, John Graves. But the paintings are the focus after all. Naturally there are color differences between the folio edition and this one, but the accessibility of the book more than compensates for any loss. The emotional identification of the artists with the landscapes and birds and the careful attention to detail make each painting memorable.

The book is an exceptional tribute to Audubon.

—**Ruth Ginsburg**, Botanical Research Institute of Texas, 509 Pecan Street, Fort Worth, TX 76102-4060, U.S.A. Extracted from *Sida* 19(4). 2001.

Barbara Joe Hoshizaki and Robbin C. Moran. 2001. **Fern Grower’s Manual**. Revised and Expanded Edition. (ISBN 0-88192-495-4, hbk.) Timber Press, 133 SW Second Ave., Suite 450, Portland, OR 97204-3527, U.S.A. (Orders: www.timberpress.com, 800-327-5680, 503-227-2878, 503-227-3070 fax). \$59.95, hbk., 624 pp., 50 color photos, 165 b/w photos, 826 line drawings, 8 1/2" × 11".

This is a compendium of fern and fern ally information. It has illustrations and descriptions along with cultivation tips. It is organized by scientific name and should satisfy both the amateur and scientist alike.

Charles R. Hart, Tam Garland, A. Catherine Barr, Bruce Carpenter, and John C. Reagor. 2000. **Toxic**

Plants of Texas. Integrated Management Strategies to Prevent Livestock Losses. (no ISBN listed, TAES B-6105 12/00). Texas Agricultural Extension Service, P.O. Box 1209, Bryan, TX 77806, U.S.A. (Orders: <http://texaserc.tamu.edu>, 888-900-2577, 979-862-1566 fax). \$20.00, spiral bound, 247 pp., color photos, 5 1/2" × 8 1/2".

This is a must-have for anyone with livestock in Texas. Each plant treatment is replete with two to three or four color photographs of the plant at different stages of development or at different magnifications. Information includes distribution and habitat, toxic agent, livestock signs, and integrated management strategies.

Jill Nokes. 2001. **How to Grow Native Plants in Texas and the Southwest. Second Edition.** (ISBN 0-292-75573-2, hbk.). University of Texas Press, P.O. Box 7819, Austin, TX 78713-7819, U.S.A. (Orders: <http://www.utexas.edu/utpress>, 512-471-4032). \$60.00 hbk., 566 pp., 30 watercolor plates, line drawings by Kathryn Miller Brown, 6" × 9".

This is a bible when it comes to propagating the native flora in the Southwest. This second edition is a beautiful example of an author's passion for, knowledge of, and expertise in native plants. The first edition that was published in 1986 has acted as the foremost guide for nurserymen, scientists and laymen trying to grow species of plants that are native in the temperate climate of Texas and the Southwest.

This second edition has been significantly expanded as far as the number of species addressed, covering approximately 75 new along with the original 350 trees, shrubs and woody vines. Some of these species are from the subtropical southern part of Texas; a region apparently left out of the first edition. Other revised sections of the book are those that give the user precise instructions on gathering and storing seed, seed germination, planting, vegetative propagation and transplanting. The bulk of the book consists of the propagation techniques

for the genera and species. Both editions are well illustrated but the new edition includes photographs showing working examples of nursery methods that are described in the text. One of the best parts of the work is the group of beautiful watercolor plates that illustrate the characteristics of 30 species. This book is not only a guide for greenhouse and nursery workers but also a field guide for anyone wanting to identify a plant that has been found in the wild that could be considered for ornamental applications. This publication sets high standards for horticulturalists for many years to come.—**Justin Allison**, FNA Administrative Assistant, Botanical Research Institute of Texas, 509 Pecan Street, Fort Worth, TX 76102-4060, U.S.A. Extracted from *Sida* 19(4). 2001

BRIT is very fortunate to have friends like Vern Wesby. Through the authorship of Susan Sander and the watercolor paintings of Vern's beloved wife (Marie), the world has a beautiful collection of botanical watercolor paintings of Marie C. Wesby in the recent publication of the book, **A Treasury of Texas Flora: The botanical illustrations of Marie C. Wesby** (2001). Thank you Vern for your generosity in placing a copy in the botanical library at BRIT.

From a collection of more than 300 watercolor paintings highlighting the abundant display of Texas wildflowers, 117 species are included in the book. The paintings are grouped by seasons and include plants that are familiar, rare and the "overlooked." A short description brings together information on the natural history and cultural heritage of each species. "Hopefully, the text will spark a curiosity about the stories associated with the plants and their names, from their "discoverers" to their uses by people and wildlife, as well as the special places they inhabit."

If you need a little inspiration, check out the magnificent beauty of the unique treasure of Texas' wild plants in this book. —**Barney Lipscomb**
Extracted from *Iridos* 13 (1). 2002

Limelight

Barney Lipscomb



Barney's association with BRIT began before it WAS BRIT. First, however, he graduated from Cameron University in Lawton, Oklahoma in 1973. Afterwards he earned his Master's degree from The University of Arkansas, Fayetteville, in 1975. He then began his career as herbarium botanist at Southern Methodist University. Two years later he became the assistant editor of *Sida, Contributions to Botany*, a scientific journal then published by SMU, and in 1983 he became editor. In 1987 he, along with Dr. William F. Mahler, founded *Sida, Botanical Miscellany* a scientific occasional devoted to a single writing. Finally, also in 1987, he along with others founded BRIT as a nonprofit organization to receive the SMU herbarium and Botany library. Since then he has played an important part in many aspects of BRIT. He holds the Leonhardt Chair in Texas Botany, has served as an Assistant Director, Head of the Library, continues as Head of Press (which still includes editing of the two *Sida* publications), and still makes time for outreach to the public in the form of lectures and various presentations. His specialties include the flora of Texas and in particular the genus *Cyperus*. He has authored several journal articles and also serves on the North Texas Poison Control Center Board and as a consultant. He has spent time in the field in various parts of the U.S., Mexico, and Central America. He also plays an important part in the Illustrated Texas Floras Projects, assisting in many aspects of the production of the floras.

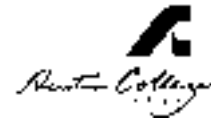
Do Your Cows Have "Staggers and Shivers"?

Festuca arundinacea Schreb., TALL FESCUE, an introduced grass, is now widespread in East Texas. This species was introduced as a cool-season hay/forage and is considered to be one of the most important cultivated pasture grasses in the U.S. (Burrows & Tryl 2001). It is now also used as a turf grass and in erosion control. However, it can be a problematic invasive weed in native prairies, where it steals the habitat of native plants. Livestock can also be poisoned by eating this species, with the resulting conditions variously called "fescue toxicity," "gangrenous fescue poisoning," "fescue foot," "summer syndrome," "summer slump," "summer toxicosis," "fat necrosis," or "staggers and shivers." The symptoms are similar to those produced by the ingestion of LSD-like toxic alkaloids in a rye fungus. In the case of FESCUE, a fungus growing within the plant tissue is at fault. This fungus has been identified as *Neotyphodium coenophialum*. There are many symptoms caused by the toxic alkaloids of this fungus including low weight gain, reduced milk production, intolerance to heat, and abortion. A number of these symptoms are caused by reduced blood flow to the skin and extremities—even gangrene and loss of extremities (e.g., loss of feet, tip

of tail, tips of ears) can occur (Kingsbury 1964; Clay 1988; Hardin & Brownie 1993; Weathers 1998; Yatskievych 1999; Burrows & Tryl 2001; Hart et al. 2001). Interestingly, the relationship between the fungus and the grass plant appears to be mutualistic (= both benefit). The infected plants have enhanced growth, more rapid germination, higher seed production, greater resistance to drought, and protection against herbivory. The fungus, on the other hand, grows within and receives nourishment from the plant, and is even spread inside the host plant's seeds. Infected fescue plants grow better and are preferred for such uses as lawns and turf (Clay 1988; Ball et al. 1993). They also make a seemingly "better" pasture. However, ranchers and land managers should be aware of the very real dangers to their livestock of a diet containing significant amounts of infected *F. arundinacea*. Ironically, it is exactly the same fungus infection that makes the plant grow so well and be so poisonous. This is just one example of the many complex interactions that have evolved between different species.--George Diggs References for this article can be accessed at: <http://artemis.austinc.edu/acad/bio/gdiggs/EastTX/pdf/ETliterature.pdf>



Illustrated Flora of East Texas
<http://www.easttexasflora.org>



A collaborative project of the
**Botanical Research Institute of Texas and the
 Austin College Center for Environmental Studies**

Below are the names of individuals who have made donations to the *Illustrated Flora of East Texas* Project since the last newsletter. Their generous support helps pave the way to the completion of this project.

Sara Beckelman
 Lynne Bender
 Nathan & Bettie Bibb
 Logan & Eleanor Damewood
 Heinz Gaylord
 Cinde Gilliland
 Gordon and Sarah Hultmark
 Gail Kahle
 Joann Karges
 Peg & Ben Keith

Bill Lindemann
 William F. Mahler
 Kathleen Moore
 Kathy Nemec
 Anne Newton
 Mary H. Prichett
 Lisa and Jason Spangler
 Temple-Inland Foundation
 Texoma Chapter-NPSOT

If you have any information, suggestions, or questions for the East Texas Project--
 Contact: Robert George, Project Assistant, Illustrated Flora of East Texas at:
 BRIT Phone: (817) 332-4441 ext. 11
 509 Pecan Street FAX: (817) 332-4112
 Fort Worth, Texas 76102-4060 e-mail: rgeorge@brit.org



BOTANICAL RESEARCH INSTITUTE OF TEXAS
 509 Pecan Street
 Fort Worth, Texas 76102-4060 USA

*Herbaria of SMU, BRIT and VDB
 Lloyd Shinnery's Collection in Systemic Botany*

Nonprofit Org
 U.S. Postage
 PAID
 Permit No. 3737
 Fort Worth, Texas
