ILLUSTRATED FLORA OF EAST TEXAS
NEWSLETTER
An Illustrated Texas Floras Project ◆ Volume 3, Number 1, June 2002

State of the Flora

Last January George Diggs and Robert George went on two excursions. First, they went to the herbarium at the Baylor University Biology department and later in January, to the Tracy Herbarium at Texas A&M University. Though relatively small, the herbarium at Baylor is excellent thanks to the work if Walter Holmes. It had several species that were not on the list to be included in the Flora. The Tracy Herbarium at A&M has about 200,000 specimens (making it the third largest in the state), 70,000 of which are grasses. George and Robert spent a couple of days there searching for and verifying various grass species for East Texas, and working with recognized Texas grass expert Steve Hatch.

The beginning of summer brings George Diggs back to Fort Worth. He will be at BRIT working for the next six months completing volume one of the *Illustrated Flora of East Texas*. Nearly all the taxa that will be included in the Flora, Volume One, have been treated. Only a few require more research before their inclusion is decided. George, amidst his academic duties at Austin College, has been working on the comprehensive introduction—a regular novella on the natural history of East Texas. Next comes the task of reading, rereading, and editing the manuscript, giving attention to the comments of the various reviewers and editors.

Robert George has begun the job of determining copyright status of the 1000+ illustrations for volume one and attending to the securing of necessary permissions from the appropriate publishers. Once the final species list is set, he will begin arranging the illustrations into individual plates for inclusion in the Flora. Robert also continues to work with Linny Heagy as she finishes up the last of the original illustrations for those plants never previously illustrated. These were often very geographically restricted, or rarely observed or collected plants. He is also working on some of the appendices: a list of conservation organizations, books for the study of native plants, and a list of sources for native plants in the East Texas area. He has most recently been finalizing the list of dicots in East Texas. A fairly accurate list of the dicots is needed to use in the volume one introduction since it will include summary data of all the plants, both monocot and dicots. It will include a tally of the number of families, genera, and species, and also numbers of native versus introduced species.

Cole Weatherby, one of George's students, begins his second summer at BRIT. He continues to work on an appendix of commercially important timbers of East Texas. Since it will include an extensive color photograph section, Cole plans to make several trips to East Texas to capture photographs in the field. In fact, just last week, Cole, George, and Barney made a trip to East Texas. They spent time in the field in the Big Thicket and also met with the folks at the National Forest Service.

Botanicus Trivialis *From UselessKnowledge.com*

Twenty thousand plants are listed by the World Health Organization as being used for therapeutic purposes.

The average mature oak tree sheds approximately 700,000 leaves in the fall.

The banana cannot reproduce itself. It can be propagated only by the hand of man.

The bark of the redwood tree is fireproof. Fires in redwood forests take place **inside** the trees.

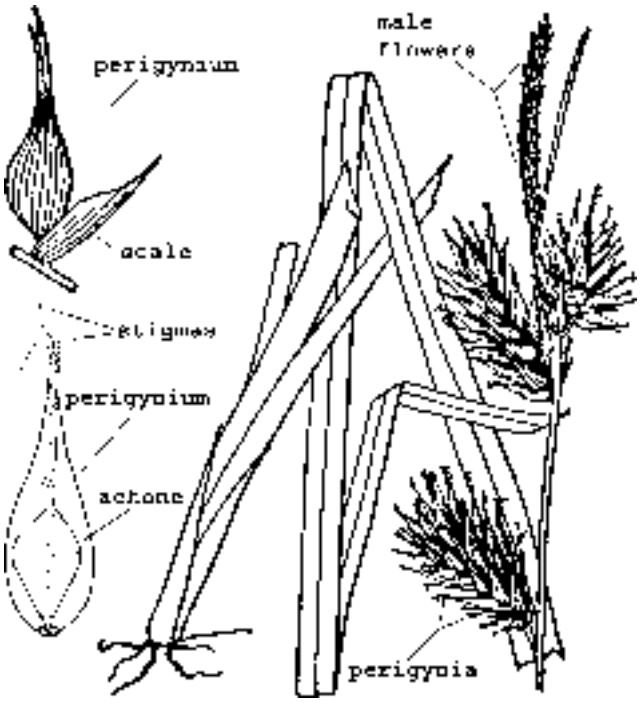
The Coco de mer, or double coconut palm of the Seychelles, bears the largest seed in the plant kingdom, weighing up to 60 pounds.

The Douglas fir, also known as Douglas spruce, is neither a fir nor a spruce, but a pinetree.

Species Spotlight

Illustration from: Britton, N. and A. Brown. 1923. An illustrated flora of the Northeastern United States, Canada and the British Possessions (2nd edition). Except: internal perigynium illustration by R. George (c) 2002

This issue's spotlight species is *Carex lupulina*- one of the sedges or Cyperaceae, a family of about 5,000 species worldwide, usually found in moist habitats. *Carex*, the largest genus in Texas (95 species), is enough to make even a professional botanist wince. To the nonbotanist and even the agronomist, it is often not distinguished from the grasses as a group. But the beauty of botany is in the details. As a group *Carex* is not that hard to recognize in the field as long as reproductive parts are present—and no one would try to identify a sedge from sterile material. First, we must distinguish it from the grasses. Though sedges in general have edges, i.e. have triangular stems, there are many that do not—grasses usually have round stems. However, grasses usually have two-ranked leaves (two opposing vertical rows of leaves) and sedges have three-ranked leaves (three vertical rows). Now, once we have determined we have a sedge we just have to identify it as a *Carex*. And, that's not so hard. In *Carex,* the pistil or ovary (and later the fruit, called an achene) is enclosed in a small sac called a perigynium and the three-parted stigma of the pistil emerges from the top (see illustration). Each perigynium also has a leaf-like scale attached at its base. The flowers are imperfect, i.e. either male (stamens) or female (pistils), in contrast to the other genera of sedges, with both sexes on the same plant (see



Carex lupulina

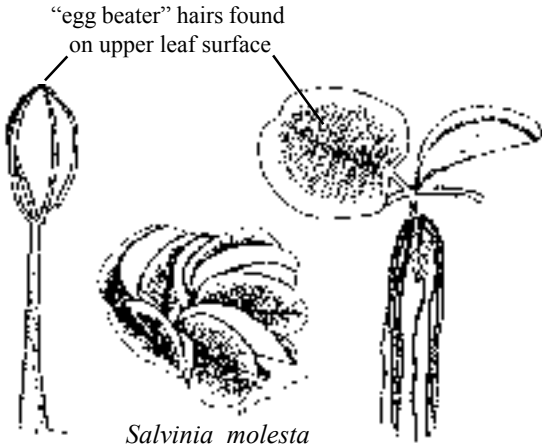
illustration). I chose our particular *Carex*, *Carex lupulina* because of the relatively large, conspicuous perigynia (more than 1 cm long). There are only three other species in East Texas with perigynia this large and with 25 or more per head. One of the others is also somewhat infrequent. So, next time you're out exploring, look around for the sedges in moist or wet areas. You may even find *Carex lupulina*!

Limelight

Monique Reed hails from desert El Paso and grew up fascinated by plants, since "green" was such a novelty. At age three, she declared, "I want to be a tree when I grow up." Thwarted in that ambition, she nonetheless earned her B.S. in Ornamental Horticulture at Texas A&M. However, she never gained escape velocity to leave College Station and has been the Herbarium Botanist in the Biology Department at A&M since 1985. She also coordinates undergraduate laboratories in flowering plant taxonomy and economic botany and serves as a botanical information resource for the general public. She received a Master's Degree in Botany in 1997 for her *Manual of the Dicot Flora of Brazos and Surrounding Counties*. It was this familiarity with the flora of this part of East Texas that earned her a spot on the Flora of East Texas team—that and editorial skills learned at the hands of an English teacher who was a former prison matron. Monique particularly enjoys bogs, outcrops, and keeping an eye out for *Agalinis navasotensis*, her "very own" species.

The Molesting Salvinia

Salvinia molesta, known as giant salvinia, is an unlikely looking fern. It invades lakes and other aquatic habitats, reproducing vegetatively very effectively. It has been reported from the Coastal Prairies and Marshes and as far northwest as Flower Mound (Denton Co.) in North Central Texas. As of summer 2000, it was known in Texas from four reservoirs and about 40 private water bodies. Considered "one of the world's worst weeds" (Jacono 1999c), it is thought to be native to South America (se Brazil—Forno 1983); and is possibly of hybrid origin. The plants can grow rapidly, and under good conditions doubling can occur in about one week (Mitchell & Tur 1975). Giant salvinia covers the surface of lakes and streams, and the floating mats shade and crowd out native plants. The thick mats reduce oxygen content, degrade water quality, and can cause physical problems including hindering boats and clogging water intakes. Plants used in aquaria or water gardens are among the likely sources for the escaped populations (Janoco 1998, 1999a, 1999b, 1999c). According to R. Helton (pers. comm.), "all reservoirs in East Texas are imminently threatened" by this species. In Texas,



Salvinia molesta

Illustration from: Fiddlehead Forum-Bulletin of the American Fern Society, 1992, 19: 26&28; Courtesy of Robbin C. Moran (c) 1992

it is considered a "harmful or potentially harmful exotic plant" and it is illegal to release, import, sell, purchase, propagate, or possess this species in the state (Harvey 1998). Giant salvinia is listed as a federal noxious weed, and as such is prohibited in the U.S. by federal law. Janco (1998, 1999a) indicated that, if seen, the species should be eradicated immediately and that the Texas Parks and Wildlife, Inland Fisheries Division should be contacted at (409) 384-9965. Biological control by the salvinia weevil (*Cyrtobagous* spp.) is being contemplated; this weevil, native to South America, has been successfully used in control programs in various places in the Old World (Moran 1992; R. Helton, pers. comm.).

References can be found at our web page: http://www.easttexasflora.org
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http://artemis.austinc.edu/acad/bio/gdiggs/floras.html

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