



Mississippi Native Plants and Environmental Education



Newsletter of The Mississippi Native Plant Society and the Mississippi Environmental Education Alliance

Volume 27 Number 3

Time to break out the hard apple cider and wind breakers and celebrate the harvest!

Fall 2009

The **Mississippi Native Plant Society**, is a non-profit organization established in 1980 to promote the preservation of native plants and their habitats in through conservation, education, and utilization.

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The **Mississippi Environmental Education Alliance** promotes EE, supports the work of environmental educators and encourages the adoption of earth-friendly lifestyles leading to the sustainability of natural resources.

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Mississippi Begins Preparation for No Child Left Inside

No, this is not a school fire drill it is music to the ears of everyone who understands the tenuousness of today's youth's link to nature!

The No Child Left Inside (NCLI) legislation being considered in Congress makes provision for environmental education. Substantial funding will become available to state education agencies once NCLI becomes law. Mississippi is one of several proactive states making preparations to receive NCLI funding by creating a required Environmental Literacy Plan.

On November 6, environmental education leaders and educators from across Mississippi will meet with Mississippi Department of Education staff to begin crafting two document of great value to environmental education in our state. These documents will include Mississippi's Environmental Education Curriculum and an Environmental Literacy Plan. As an EE leader, your participation is vital to the quality of the document. Please join us at 10 AM on Friday, November 6. There is no cost for this workshop but please RSVP John Stark 601-214-7426. He can also answer any questions you may have.

You are invited to remain with us for the Mississippi Environmental Education Alliance Fall Conference which begins mid-afternoon following the NCLI meeting and continues through Saturday afternoon. Details about the NCLI legislation are available at <http://www.govtrack.us/congress/bill.xpd?bill=s111-866>.

Plants in Science and History with Math and Art Overtones by John Guyton

I have always thought history should have been written more about our interactions with plants! On trips into the woods with youth and adults alike the things that get their attention the most are plant stories. Sassafras for example, was responsible for the first European - Native American conflict. The Native Americans taught their first visitors from abroad that sassafras root bark was useful in making a tea and the first settlers, not having gold to send to Europe, sent sassafras!

Urban forest are particularly rich with plant stories since the plant diversity is so great. Since urban areas are an amalgamations of people from many countries and cultures and they like to bring their plants with them the botany gets pretty exciting. Our ancestors brought their medicinal plants with them and they are growing wild in our cities.

Join me at the MEEA conference for as many of these stories as I can pack into a session: insecticides we use to spice up our foods, a medicinal plant that heals wounds, where the cedar waxwings get their terminal tail bar colors, purple is not a pigment and neither is white, natural soda straws, and many more...

Field Trips and Other Events

Nov 6 NCLI Organizational meeting (information this issue)

Nov 7 MEEA annual conference (information this issue)

Nov 14 MNPS Field Trip to Clark Creek (MEEA members encouraged to participate)

Native Plant Sales

Any Time! Native Plant are available throughout the year from Strawberry Plains Audubon Center's Nursery by appointment. Please contact Kristin Lamberson at 662-252-1155 for more information. Bring a wagon.

Oct. 10 & 11 Crosby Arboretum Fall Plant Sale 10:00 - 3:00 [Members Only Sat 9 - 10 a.m.]

Oct 17 Clinton Community Nature Center, Clinton MS, Fall Plant Sale Saturday.

Calendars for additional field trips and other events

For additional opportunities monitor: EEinMississippi, <http://bigcypressoutdoorclub.wikispaces.com>, www.clintonnaturecenter.org, <http://www.crosbyarboretum.msstate.edu/>

Greetings MNPS

The 2009 MNPS Conference was a great experience. I really enjoyed seeing so many familiar faces and meeting new ones as well. The speakers were excellent and the field trips exciting. We had 54 register for the conference and 21 new members join MNPS. Of this group, 15 were from the Coastal Plains Mississippi Native Plant Society Chapter, one lifetime member attended from Texas, and a new member from Minnesota joined MNPS. At the conference, a vote was taken and the majority voted in favor of holding the next conference at the Mississippi Museum of Natural Science in Jackson, MS. Dates, field trips, and speakers for this conference will be announced in future newsletters.

I am honored to be elected your president for the coming year and look forward to what lies ahead for MNPS. It is wonderful to belong to a group that is as enthusiastic about plants as I am! Speaking of plants, I don't know about you, but recently I can't stop admiring the beauty of *Helianthus angustifolius* (Swamp Sunflower) in bloom. This plant's reddish brown disk flowers and yellow ray flowers can easily be spotted along roadsides, in woodlands, and savannas this time of the year. Although lovely along the roadside, I much prefer to appreciate this plant close up by taking a leisurely walk outdoors. If you have yet to do the same, take a few moments today to marvel at its beauty!

Janine Conklin, MNPS President

Save the date(s)!!! November 6-7, 2009

Two (2) important days for environmental education in the state of Mississippi!

November 6th....

On November 6th environmental education professionals from across the state will meet with Mississippi Department of Education staff to craft a document of great value to environmental education in our state. The gathering will begin at 10am at the Eagle Ridge Conference Center in Raymond, MS.

The No Child Left Inside (NCLI) legislation being considered in Congress makes provision for environmental education. Substantial funding will become available to state education agencies once NCLI becomes law. Mississippi is one of several proactive states making preparations to receive NCLI funding by creating a required Environmental Literacy Plan. As an EE leader, your participation is vital to the quality of the document. Please join us!

November 6th & 7th...

Following the NCLI workshop, you are invited to remain with us for the Mississippi Environmental Education Alliance (MEEA) Fall Conference which begins late Friday afternoon and continues through Saturday afternoon. This year's keynote speaker ~ Robin Whitfield ~ is a painter, teacher and naturalist. She chooses to work out-of-doors, exploring swamps, creeks and woods. She typically works on site with watercolors and oils and she will even paint from her kayak! Her paintings portray the seasons, weather, plants, animals and the geology of the Mississippi landscape. She says, "*Painting feeds my curiosity, sharpens my senses, and deepens my awareness of life.*" Robin received grants to complete mural projects at two Mississippi schools: 'The Walls That Teach' for Grenada Middle School and 'The Pearl River Ecosystem' for Clinton Junior High School. She leads various workshops such as nature journaling and is currently working at Tie Plant Alternative School as a Core Arts instructor for Communities In Schools of Greenwood Leflore Inc.

Eagle Ridge Conference Center is located at Hinds Community College, ten miles west of Jackson, MS. Conference registration is \$135, which includes single occupancy lodging and three meals. Registration for the Friday night dinner and keynote speaker (only) is \$35.

The 24-hour conference will include several workshops designed to give teachers and members of the community a better understanding of the growing importance of *experiential* (hands on) education and demonstrate ways to connect children with nature, which is fundamental to their health and the preservation of our planet.

For attending the entire conference, teachers will be able to earn 1.1 C.E.U. credits. Registration forms are available by visiting the MEEA web site at: www.EEinMississippi.org The early registration deadline is October 12, 2009; however, registration will continue until the conference begins. Questions may be directed to Conference Chair, Terri Jacobson, by calling: 601-321-1129

Falling into Nature:

The Mississippi Environmental Education Alliance 2009 Conference

The Mississippi Environmental Education Alliance (MEEA) will be hosting its annual conference at **Eagle Ridge Conference Center in Raymond, MS November 6th and 7th**. This year's theme is "Fall into Learning with Nature." Our keynote speaker Robin Whitfield is a painter, teacher, and naturalist. She chooses to work out of doors, exploring swamps, creeks and woods. She typically works on site with watercolors and oils and is known to paint from her kayak. Her paintings portray the seasons, weather, plants, animals and geology of the Mississippi landscape. She says "*Painting feeds my curiosity, sharpens my senses, and deepens my awareness of life.*" Robin received grants to complete two mural school projects – the "Walls That Teach" at Grenada Middle School and the "Pearl River Ecosystem" for Clinton Junior High School. She leads various workshops such as nature journaling and is currently working at Tie Plant Alternative School as a Core Arts instructor for Communities In Schools of Greenwood Leflore Inc.

Eagle Ridge Conference Center is located at the Hinds Community College, ten miles west of Jackson, MS. Conference registration is \$105, which includes double occupancy lodging and three meals. Conference registration is \$135, which includes single occupancy lodging and three meals. Registration for the Friday night dinner and keynote speaker only is \$35. Registration for Saturday meals and the conference interactive sessions cost \$45.

The MEEA's mission is to actively encourage and support the education, philosophy and ethics of environmental awareness and literacy for the citizens of Mississippi. The organization promotes environmental education and supports the work of environmental educators in Mississippi. Further, MEEA encourages the adoption of earth-friendly lifestyles leading to the sustainability of natural and cultural resources.

The conference will include several workshops designed to give teachers and community members a better understanding of the growing importance of environmental education and demonstrate ways to connect children with nature, which is fundamental to their health and the preservation of our planet. Interactive sessions will use art, creative writing, story telling, and nature observation as a venue to inspiring nature awareness, appreciation and knowledge.

By attending the entire conference, teachers will be able to earn 1.1 CEU. credit. If you can't attend the entire conference there are CEU. credit options available for those attending Friday only or Saturday only; see the MEEA web site for details. Registration forms are available by visiting the MEEA web site at www.EEInMississippi.org. Registration deadline is October 12, 2009. This conference is for anyone interested in connecting children to nature.

MNPS 2009 Annual Meeting at the Grand Bay NERR Report by Gail Barton

On Saturday morning, September 26, the Mississippi Native Plant Society met at Grand Bay National Estuarine Research Reserve's Coastal Resources Center near Moss Point, Mississippi. Peggy Guyton efficiently handled registration. She reported that 55 people registered for the meeting. This included 21 new members. 42 of the attendees were from Mississippi, 11 from Alabama, 1 from Texas and 1 from Minnesota. At registration, each participant received a door prize ticket and chance to win native plants donated by Peter Loos and Gail Barton. After registering, members explored the new LEED Certified Coastal Resources Center. The consensus of the group was that the building was a fine meeting space. Our MNPS meeting was the first daylong conference hosted at the facility. We thoroughly enjoyed breaking it in.

At 8:00 our group organized into a convoy and followed Fred Nation and Dr. Harry Larsen to a pitcher plant bog near the meeting facility. Some botanical highlights of the bog walk were: foxtail clubmoss (*Lycopodiella alopecuroides*), wiregrass (*Aristida stricta*), toothache grass (*Ctenium aromaticum*), pink muhly grass (*Muhlenbergia capillaris*), white topped sedge (*Rhynchospora latifolia*), Chapman's beaksedge (*Rhynchospora chapmanii*), netted nutsedge (*Scleria reticularis*), hatpins (*Eriocaulon decangulare*), red root (*Lachnanthes caroliniana*), sandbog deathcamus (*Zigadenus glaberrimus*), saltmarsh false foxglove (*Agalinis maritima*), Jackson false foxglove (*Agalinis filicaulis*), savanna honeycomb (*Balduina uniflora*), coyote thistle (*Eryngium integrifolium*), swamp sunflower (*Helianthus angustifolius*), blazing star (*Liatris spicata*), Barbara's buttons (*Marshallia graminifolia*), candyroot (*Polygala ramosa*), foldear lobelia (*Lobelia flaccidifolia*), yellow screwstem (*Bartonia verna*), spadeleaf (*Centella asiatica/erecta*), musky mint (*Hyptis alata*), goldcrest (*Lophiola aurea*), wand goldenrod (*Solidago stricta*), rayless goldenrod (*Bigelovia nudata*), 3 species of pitcher plant (*Sarracenia alata*, *S. leucophylla* and *S. psittacina*), Laurel-leaf catbriar (*Smilax laurifolia*), saw palmetto a.k.a the rattlesnake Riviera (*Serenoa repens*), waxmyrtle (*Morella cerifera*), evergreen bayberry (*Morella heterophylla*), gallberry (*Ilex glabra*), large gallberry (*Ilex coriacea*), longleaf pine (*Pinus palustris*) and slash pine (*Pinus elliottii*).

We returned to the meeting facility where Jennifer Buchanan, Grand Bay NERR Education Coordinator, welcomed the group

and spoke briefly about the NERR's mission.

Fred Nation then gave a presentation on "Gulf Coastal Bog Habitats". Those who had taken the bog walk, were able to see beautiful photos of the plants accompanied by Fred's entertaining trivia. It was much easier to make notes from the air conditioned comfort of an armchair.

After a pizza lunch, members attended the MNPS business meeting. Tim Shauwecker agreed to take on the arduous task of creating the MNPS web site. Joe and Merrill Willis offered to assist a committee in attaining 501(c)(3) status for MNPS. Debora Mann gave the Treasurer's Report. John Guyton then presented a Lifetime Achievement Award to Dr. Debora Mann who has served as MNPS Secretary / Treasurer since 1997. Dr. Janine Conklin was elected as the new president. Gail Barton and Pat Drackett will serve as Trips Chairs. Dr. Tim Shauwecker will continue as vice president and Dr. John Guyton as Education Chair. John and Peggy Guyton will continue to edit the newsletter with assistance from Brian Templeton. A poll of members was taken and it appears that our 2010 meeting will be held at the Mississippi Natural Science Museum in Jackson. Janine Conklin asked for volunteer to help coordinate that meeting. The meeting was adjourned and Dr. Mac Alford took the floor to talk about "Special Places of the Gulf Coastal Plain". Mac discussed bog habitats and the Southern Evergreen Hardwood Forest.

Mac's presentation prepared the group for the afternoon field trip to Ward Bayou Wildlife Management Area. Along the swamp margin we saw bitter pecan or water hickory (*Carya aquatica*), cardinal-flower (*Lobelia cardinalis*), white oak (*Quercus alba*), overcup oak (*Quercus lyrata*) and baldcypress (*Taxodium distichum*). We then enjoyed a delightful walk through the Southern Evergreen Hardwood Forest. Some of the plants we observed were nodding nixie (*Apteris aphylla* - a mycoheterotroph, that is parasitic on fungi that help other plants absorb water and minerals), Jack in the pulpit (*Arisaema triphyllum*), small flower pawpaw (*Asimina parviflora*), horsebalm (*Collinsonia anisata* formerly part of *C. serotina*), American beech (*Fagus grandifolia*), little brown jug or wild ginger (*Hexastylis arifolia*), American holly (*Ilex opaca*), starbush, Florida anise or stinkbush (*Illicium floridanum*), mountain laurel (*Kalmia latifolia*), southern magnolia (*Magnolia grandiflora*), pyramid magnolia (*Magnolia pyramidata*), sweetbay magnolia (*Magnolia virginiana*), sourwood (*Oxydendrum arboretum*), red bay (*Persea palustris*), Christmas fern (*Polystichum acrostichoides*), needle palm (*Rhapidophyllum hystrix*), dwarf palmetto (*Sabal minor*), silky camellia (*Stewartia malacodendron*), horse sugar or sweet-leaf (*Symplocos tinctoria*), southern shield fern (*Thelypteris kunthii*) and net-vein chain fern (*Woodwardia areolata*). As our hike was gearing down, the rain began and we returned to the Coastal Resources Center. We savored Marc Pastorek's wonderful gumbo (or should I say *yumbo*) supplemented with sandwiches and cookies.

Dr. Richard Brown provided the evening entertainment with his presentation about "Caterpillars as Botanists and Community Ecologists". Dr. Brown showed numerous pictures of caterpillars which normally only feed on plants that are very closely related. He cited many instances where caterpillar species had been documented feeding on plants that (according to the taxonomists) were unrelated. Later, the human taxonomists found evidence that caused the plant classification to be changed.

On Sunday morning, two groups floated the Pascagoula River with McCoy's River and Swamp tours. Each group departed from the Pascagoula River Audubon Center in Moss Point with Benny McCoy at the helm. The Pascagoula is one of the last free flowing rivers in the contiguous 48 states. Because of its pristine condition, the biodiversity of the basin is very impressive. We saw a multitude of migratory birds that use the river basin throughout the year and many shore and water birds including great blue herons and ospreys. We also observed an American alligator nest. But, of course, we were there to see the plants! We admired vast swaths of sawgrass (*Cladium jamaicense*), cut grass (*Zizaniopsis miliacea*), maiden can (*Miscanthus hemitomon*), needle rush (*Juncus roemerianus*), salt meadow cordgrass (*Spartina patens*), smooth cordgrass (*Spartina alterniflora*), wild rice (*Zizania aquatica*), common reed (*Phragmites australis*), duck-potato (*Sagittaria lancifolia*), palmetto (*Sabal minor*), and spatterdock (*Nuphar luteum*). On a more somber note, we observed large stands of redbay that were devastated by laurel wilt. We saw smaller populations or scattered specimens of pickerelweed (*Pontederia cordata*), switch cane (*Arundinaria gigantea*), arrowwood viburnum (*Viburnum dentatum*), large gallberry (*Ilex coriacea*), winterberry (*Ilex verticillata*), buttonbush (*Cephalanthus occidentalis*), leatherwood (*Cyrilla racemiflora*), leatherflower (*Clematis crispa*), morning glory (*Ipomoea* spp.), bitter pecan (*Carya aquatica*), live oak (*Quercus virginiana*), black gum (*Nyssa sylvatica*), water tupelo (*Nyssa aquatica*) and baldcypress (*Taxodium distichum*). Benny McCoy pointed out Ross Hutchins' *Island of Adventure* as we passed. A participant on each of the boat trips won a copy of the Hutchins book. The company was pleasant and our guide, Benny McCoy was extremely knowledgeable. He also told some good jokes. We were sad when the tour and our wonderful 2009 meeting ended.

Special thanks to Peggy Guyton, Jennifer Buchanan and Debora Mann for their help in coordinating the meeting and to Marc and Candi Pastorek for the delicious gumbo.

Field Trip to Clark Creek Natural Area in southwestern Mississippi on November 14

On November 14, Gail Barton and Marc Pastorek will lead a MNPS Field Trip to Clark Creek Natural Area in southwestern Mississippi (MEEA Members welcomed). Clark Creek Natural Area, sometimes referred to as Tunica Falls, is a natural haven for bird watchers, hikers, photographers and botanists. The area can be enjoyed using either the *primitive trails* or *improved trails*. The uniqueness of Clark Creek occurs because of its steeply sloping loess bluffs, which can be very physically demanding. We will be walking on the improved trails. These are covered with pea gravel and contain numerous steep stairs which offer more people access to the falls. The improved trails are about 1.75 miles in length.

Comprising more than 2,000 acres, Clark Creek Natural Area contains some 40 waterfalls (though you'll find only 6

along established trails), ranging from 10 to more than 25 feet in height. Creation and protection of this fabulous area came about in 1978 from cooperation between the Mississippi Wildlife Heritage Committee, Wilkinson County, David Bramlette, International Paper Company and the Department of Wildlife, Fisheries and Parks.

The Natural Area is comprised of a mixed hardwood and pine forest dominated by beech and magnolias. Big trees viewed in the park are: the world record; *Mexican Plum* & *Bigleaf Snowbell* and the Mississippi state record *Hophornbeam*. Uncommon trees found are Southern sugar maple, serviceberry, umbrella tree, pyramid magnolia, silverbell, chinquapin oak and witch-hazel. The park's lush vegetation includes cascading ferns that enhance the waterfalls and the federally endangered Carolina magnolia vine.

The Natural Area is home to a variety of colorful migrating and resident birds; a rare land snail; a state endangered fish, the Southern red belly dace. This forested tract also provides excellent habitat for another threatened species in Mississippi -- the black bear.

Please call Gail Barton at 601-483-3588 if you intend to participate. We will meet in the parking lot at 9:00 and begin our trek shortly thereafter. We will allow at least 2 hours for the hike. We will, of course, add a couple hours more to linger at the waterfalls and enjoy the birds, plants, and wildlife along the trails. We should return to the parking lot about 1:00. There are restrooms and a water fountain at the trail-head, but none on the trails so field trip participants should bring water. If you are in doubt about whether the terrain is too steep, I can tell you that I walked the improved trails last spring taking my time and using a walking stick. At the time I had a bum knee and limited respiratory function due to a recent bout with the flu. My point being that since we will walk on the improved trail and take our time, most members should be able to participate if desired. Each participant will need to buy a Day use permit. There is a \$3 fee and an honor box at the trailhead.

In short, participants should call Gail so we know to wait for you if you are running late, bring a walking stick, water and \$3.00 to pay for a permit. You may want to bring a lunch or a snack or allow time for a shopping spree at the Pond General Store. Cell phone reception is limited in the area, so you should print out directions rather than depending on a cell phone call to get directions that morning. In case of inclement weather, the trip will be cancelled and rescheduled for spring. I hope to see you there!

Directions:

Clark Creek Natural Area lies amid the lush vegetation of Wilkinson County, 13 miles southwest of historic Woodville in the community of Pond at the junction of Hwy. 969 & Hwy. 24. Baton Rouge is roughly 55 miles to the south, Natchez nearly 40 miles to the north on U.S. 61, and Jackson 150 miles northeast.

From Jackson, visitors should take Interstate 55 south to McComb. Proceed west on Highway 24/48 to Woodville. . From other destinations, proceed to Woodville and follow the directions below.

Continue through Woodville on Highway 24. At the Clark Creek highway sign on the outskirts of Woodville, turn left onto the Woodville-Pond Road

Drive about 13 miles to the community of Pond, turn right and proceed across the cattle gap up toward the large, white building that serves as the Pond General Store. Go approximately 100 yards past the store to the trail head parking area on the left.

Parts of this field trip description were pilfered liberally from the Louisiana Hiking Club website at <http://www.hikelouisiana.org/detailsclark.html> and from the St. Francisville Inn website at <http://www.where2guide.com/TouristTrail/outdoors/ClarkCreek.html> . You may want to visit these websites for additional details.

Sweetgum Gets a Bad Rap by Gail Barton

I must confess that I chose the subject of this article somewhat out of guilt. I've been working on a new golf cart trail through our woods. In the process, I've had to make a lot of choices like "If I go to the right I'll take out a red maple, oak, etc. but if I go to the left I'll lose a sweetgum". Given that decision, I've almost always chosen to bump off the sweetgum. Don't get me wrong – I really do *like* sweetgums but there are so many of them and hopefully this tribute to the undervalued sweetgum will assuage my guilt.

The American sweetgum (*Liquidambar styraciflua*) is a member of the Witch Hazel Family sometimes known as redgum, star-leaf gum, sapgum, copalm, liquid storax, white gum, opossum tree, bilsted, satin walnut or alligatorwood. It occurs from Connecticut south to central Florida and west to Texas and Oklahoma. It is also found in Mexico and Guatemala. It is particularly abundant in the Southeastern U.S. There are only two other existing species of sweetgum – one from Formosa and one found in Turkey although there are fossil

records of about 20 species that are now extinct.

The genus name translates as *Liquid Amber* and refers to the brown gummy sap that flows from the injured bark and hardens (like amber) when exposed to the air. The species name *styraciflua* means “flowing with styrax” and alludes to a similarity with storax, an aromatic resin that exudes from Old World sweetgums.

The sweetgum’s aromatic resin has been used in medicine, incense or perfumes throughout history. In the Southeastern U.S. it has served as a substitute for chewing gum as well. During the Second World War, foreign supplies of storax were needed as a base for salves, adhesives, perfuming powders, soaps and as a tobacco flavoring. Since storax was unavailable, local folks in Clarke County, Alabama began tapping native sweetgums and became the center of the industry. In the 1830’s sweetgum resin was used in experiments that led to the discovery of polystyrene, the first man made polymer.

Most Mississippians (even those uninterested in Botany) can identify a sweetgum. The tree has unique star shaped leaves and often bears twigs adorned with corky wings. The tree’s best identification feature, however, is its abundance of spiny fruit.

These sweetgum balls are actually clusters of many beaked capsules. In early spring as the leaves emerge, every healthy sweetgum bears green pistillate (female) and staminate (male) flowers that co-mingle to produce a green mace-like fruit. In case that, like most people, you have never noticed them, a picture of sweetgum flowers can be found at <http://www.backyardnature.net/flswtgum.jpg>.

After reaching its mature ping pong ball size, sweetgum fruit turns brown and an opening forms in each capsule through which tiny winged seed are released. A sweetgum ball contains 50 or more seed that are dispersed on the wind. This allows successful pioneer sweetgum seedlings to colonize even the most disturbed or barren landscapes.

The sweet gum fruits stay on the tree most of the winter acting as a sort of “launching platform” for the seeds. Since all sweetgums produce the fruit, the tree is much maligned as a producer of litter and many gardeners have an aversion to it.

It has not always been so. Historically, the sweetgum has been revered for its medicinal attributes. According to Donald Culross Peattie’s *A Natural History of Trees of Eastern and Central North America*, the first reference to the American sweetgum was made by Don Bernal Diaz del Castillo who accompanied Cortez to the New World in 1519. Peattie says “Out of a bizarre and dramatic moment of history comes, like a puff of pungent smoke, the first reference to this American tree. It is written by a witness of the ceremonies between Cortez and Montezuma, and he says, of the Emperor: *After he had dined, they presented to him three little canes highly ornamented, containing liquid-amber, mixed with an herb they call tobacco, and when he had sufficiently viewed and heard the singers, dancers, and buffoons, he took a little of the smoke of one of these canes.*” Don Bernal Diaz del Castillo probably identified the scent of the liquid-amber because incense made from Turkish sweetgum resin was commonly used in Christian churches and Indian temples in those days.

Peattie also says that “Francisco Hernandez, the first great herbalist of Mexico who dwelt in that country from 1571 to 1575 speaks of it ... as having ... a resin of which the *nature is hot in the third order, and dry, and added to tobacco, it strengthens the head, belly and heart, induces sleep and alleviates pains in the head that are caused by colds.... It dissipates humors, relieves pains, and cures eruptions of the skin.... It relieves wind in the stomach and dissipates tumors beyond belief.*”

Sweetgum may have a modern medicinal use. Chemists have recently found that sweetgum seeds contain significant amounts of shikimic acid which is used to make the main antiviral agent in Tamiflu®. So far shikimic acid has been obtained almost exclusively from the Chinese star anise. The supply of star anise has dwindled due to high demand for the flu drug. The lowly sweetgum could save the day! To optimize shikimic acid extraction, the gumballs need to be harvested when they are still green and attached to the tree with the seeds safely ensconced inside.

In addition to its possible health benefits, sweetgum is a great wildlife plant. The tree is host to giant silkmoth larva such as caterpillars of the luna moth, imperial moth and promethean moth. It also hosts the caterpillar of the royal walnut moth which is commonly called a hickory horned devil.

The pesky tent caterpillars and fall webworms that frequent sweetgums are a food source for many species of birds, Squirrels, chipmunks and an estimated 25 species of birds feed on sweetgum seed as well. Perhaps

that's why they don't get the flu! Renowned Louisiana Naturalist and Birder, Bill Fontenot, says about sweetgum seed, "Tiny as they are, the seeds are fat & greasy, and taste as sweet and oily as a pecan. Squirrels and numerous songbirds (especially American goldfinch and white-throated sparrow) love them. In fact, each winter, goldfinches will refuse to go to artificial seed feeders until they've cleaned out the sweet gum seed from local trees. Most years, you begin hearing goldfinches around October; but they won't hit the feeders until AFTER thanksgiving (and some years not until AFTER Christmas)." Some other birds that feed on sweetgum include junco, mourning dove, rufous sided towhee, grosbeak, wren, chickadee, titmouse, quail, mallard and wood duck.

I didn't decide to write this article just out of guilt. Sweetgums are among my favorite trees this time of year because they provide intense fall foliage color in all parts of Mississippi. Each autumn the leaves are tinted red, orange and yellow – sometimes all on the same tree. A few rare specimens will even transform into a deep wine color that I describe as royal purple. American sweetgums are popular landscape trees in some parts of the world due to their ability to color during less than ideal fall weather. They're sold in nurseries in California and used as street trees in Europe.

From a landscaping perspective, I'll admit that the spiny fruit does annoy me. As I researched this article, I found numerous references to the fruitless sweetgum, a form with rounded rather than pointed lobes. I've tried growing it but was not impressed. To me it was just a watered down version of the original. The fall color was not great and with rounded lobes instead of the typical star shaped leaf, it just didn't look right.

I'll stick with the original – the one that plants itself throughout the great state of Mississippi. The sweetgum balls are not a problem except in high traffic areas. Brightly tinted sweetgums can color our roadsides and woodlands without annoying the public. They can feed the wildlife and like good pioneers, quickly fill in the gaps when we clearcut and demolish. And who knows, if a pandemic does happen, we may all be glad to have some sweetgum balls to chew on!

Carnivorous Omnivorous Plants? By John Guyton, MNPS Education Chair

Omnivores Carnivorous sounds like an oxymoron but Ashok Prasad reported in the September 08 Natural History magazine that evidence is accumulating that the algae many of us have seen and considered incidental in bladderwort bladders is being used by the plants. Carnivorous plants are still amazing us with their ability to adapt to their environment!

There were so many titles I considered using: Even Carnivorous Plants Eat their Greens (too close to Natural History article title); I Love Greens and so do Carnivorous Plants, so We Must be Kin (too long); Carnivorous Plants Competing with Omnivores (no evidence of competition); Carnivorous Plant Adaptations to Water Hardness; Omnivorous Carnivorous, Science May Necessitates a Name Change, etc.

Both aquatic and terrestrial bladderworts can be found in south Mississippi. The terrestrial bladderworts catch insects underground and the aquatic bladderwort dines, and lives, in shallow ponds.

Bladderworts maintain a negative pressure (partial vacuum) inside their bladders and when the trigger hair is touched its door opens and the nematode, insect or other organism that touched the trigger is sucked in. If you are patient enough you can watch this happen under a dissecting scope.

Natural Science reported that Marianne Peroutka at the University of Vienna examined 1,450 traps from 4 species and found algae in over half made up 80% of the material found in the traps. And to make it even more interesting some of the algae was partially digested. Not only that, she discovered bladderwort in soft water, which has a lower mineral and animal content, contained more algae than algae in hard water.

Seems we may need to start rethinking the name, carnivorous plants! The natural progression of science is to respond to new information and as information continues to accumulate we may need to change carnivorous to omnivorous!

