Mississippi Native Plants

Newsletter of The Mississippi Native Plants Society

Volume 36 No. 1 *Spring is nature's way of saying, Let's Party! — Robin Williams* **Spring- Summer 2019**

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

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A Few of Nature's Magical Processes to Reflect on During Spring or Summer Walks by Dr. John Guyton

Chemistry and Physics are complimentary sciences with Biology in understanding many of earth's natural processes and its history.

Sap rises in trees when the intermolecular force of vapor evaporating from leaves creates a negative pressure, utilizing capillary action sucking water into their roots. When conditions are right, and the sap is rising you can hear it with a stethoscope.

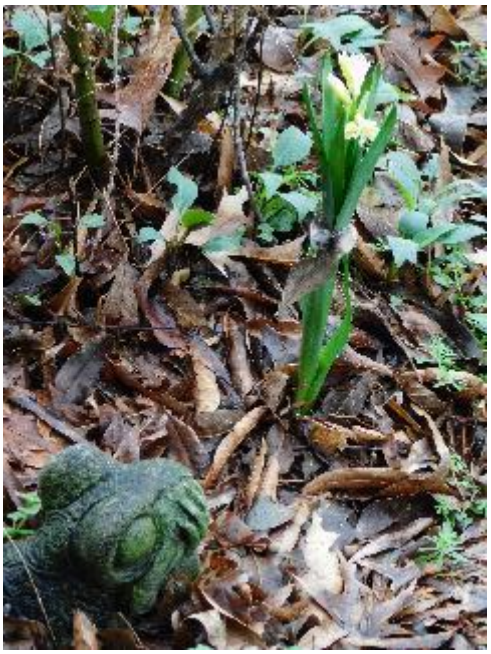
To evaporate, liquids requires heat. In the case of the water evaporating from leaves (transpiration) this heat is scavenged from the surrounding air and the leaves themselves. This removal of heat from leaves and the surrounding air cools the air. So, it turns out birds have been living in airconditioned trees forever!

Salt wicks, or absorbs, moisture from the soil and salt rises from the soil by osmotic pressure. Over time salt licks can be created. Rivers were the pathways along which early settlers moved into continents during their exploration and saltlicks along the rivers became the locations for early settlements. Before the Native Americans utilized the "Devil's Backbone" or *Natchez Trace,* bison roughed out the path to famous salt licks near Nashville. The Native Americans who controlled salt were the most powerful tribes. The first European settlement locations on the American continent were near salt deposits.

There is a process by which some rocks work their way out of the soil. The event is the annual freeze-thaw cycles and rocks slow rise to the surface is the result of thermal conductivity of the rocks and their adjacent soils. There are exceptions (sandstone and siltstone) but otherwise temperature conductivity increases with rock density. As the temperature drops rocks freeze water beneath them. And since water expands on freezing, frost by frost pushes the rock toward the surface.

Fire ants typically build their hills to take best advantage of the sun throughout the day for thermoregulation. Higher temperatures speed the process of brood development and ants are masters at ventilation system design and operation. Ants routinely move brood to locations with the best advantage. The south side of trees or on the north side of a ditch with a southern exposure are desirable locations.

And finally, a frog effigy looks on in amusement as a spring flower pushed it way through a leaf and went on to bloom!



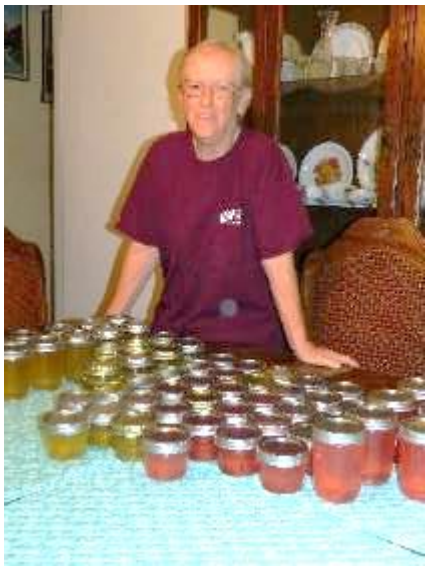
Greetings Fellow MNPS Members! By Dr. JoVonn Hill

Greetings fellow native plant enthusiasts! This should be my final newsletter address as president. I have enjoyed my time serving over the last two years and am pleased with the growth of our society through the use of social media. I am sure given all our new members that someone will step up from the ranks and take the society to new heights. Our upcoming annual conference promises to be a good one. I am very excited to have my good friend Dr. Dwayne Estes (aka The Prairie Preacher) coming to give a talk about the Southeastern Grasslands Initiative and the ever entertaining John Manion coming from the Birmingham Botanical Garden to talk about his passion for paw paws. I truly hope we have a good turn-out for the conference and I looking forward to seeing all of you there.

Editor's Note

The Spring newsletter was nearing completion when I experienced an attack on my external hard drive that the university IT was unable to save. I restarted the newsletter but with our annual Bug and Plant Camp on the horizon, I dropped the newsletter. Camp is behind us as well as a few other projects so here we go again. The request for articles for the newsletter remains open. Without assistance we may be forced to shrink the newsletter to two editions per year without members support writing articles...

Peggy's Homemade Honeysuckle Jelly



Most of our friends know we cook bugs and that Peggy is a peanut brittle master chef. But in the spring of the year she hears the honeysuckle calling. We fortunately have honeysuckle blooming behind our home and we collect the blooms daily from the plants. Recently temptation triumphed the rumor that the beautiful coral honeysuckle outside our office was poisonous. After a thorough search for truth on the internet (dangerous!) she succumbed to the temptation! And after she made some and we sampled it and lived to enjoy it and share it with a lot of friends we decided it was safe! Its taste is virtually the same, and its color is a beautiful pink.

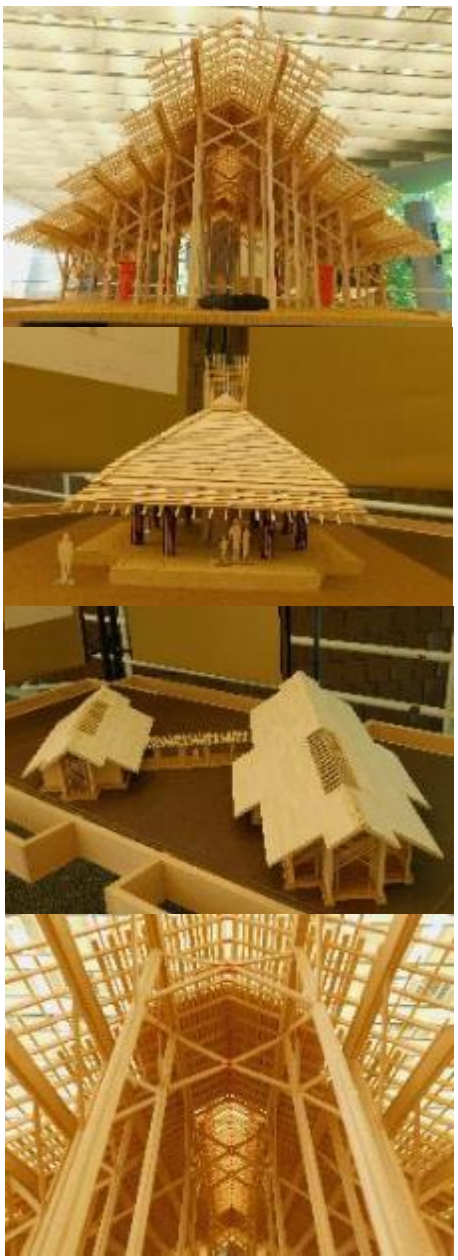
There was a huge yellow honeysuckle bush at the end of the street I lived on as a youth and with several neighborhood friends we often gathered to savor its smell and sample its nectar! Peg's jelly takes me back…

There may be some poisonous varieties with glycosides in the stems or vines and the berries containing carotenoids, so be careful. And it seems there are almost 2000 varieties.

Emerald Ash Borer Alert from Dr. Blake Layton Bug's Eye View

Since it was first detected in the US in 2002, this non-native pest has killed hundreds of millions of ash trees. This little green beetle has already killed so many ash trees that it threatens the future of wooden baseball bats, and it continues to spread. Mississippi and Florida are the only states east of the Mississippi River that do not yet have emerald ash bores, but it is just a matter of time. Unfortunately, the federal trapping program that tracked the spread of EAB was terminated after 2018. For more information see http://extension.msstate.edu/sites/default/files/publications/publications/p3212_web.pdf

The Unbuilt Crosby Arboretum Exhibit! by John Guyton



The Unbuilt Arboretum Exhibit celebrates the work of internationally renowned architect E. Fay Jones, who designed the Pinecote Pavilion, and so much more for MSU's Crosby Arboretum. Pat Drackett shared a couple pictures with me during a workshop at the Crosby Arboretum, and we made a trip the day after arriving home to see the exhibit on its last day! A national tour of the exhibit is planned!

My first visit to the Crosby Arboretum was while searching for a location to conduct 4-H Environmental Education programs in Mississippi. This was my first assignment as the State Extension Environmental Education Specialist. I had searched the state for such a location, and this was absolutely the best place in Mississippi for this kind of programs. Unfortunately, the then director was not interested. Eventually, after a chance conversation with Lynn Crosby Gammill, on her Saturday call to the Coastal Research and Extension Center in Biloxi on an unlisted number I had given Peggy to reach me, a miracle happened. She was looking for our horticulturalist, John Davis, who had given her the same number to contact him! Fortunately, he was not in!

I had recently learned and been very disappointed to learn the arboretum was being given to Ole Miss, so I seized the moment to tell her of my disappointment since I needed such a facility. She said, "we did not think Mississippi State wanted it." I reminded her that Ole Miss was clearcutting in the red creek area and that had created great dissension among coastal residents, and she asked, "You don't think they would clear cut the arboretum, do you?" I replied there was marketable timber on the arboretum property. When I told her of my plans and interest, she asked how we should proceed. I suggested she discuss it with my Dept. Head David Veal on Monday and suggested she wait until late Monday morning and call on the same number. I mentioned it to David the first thing Monday morning and he said, "I don't think we want it, but I will talk with her." At that time, he was obsessed with securing funds to build a research and extension facility as most other districts already had. Lynn made that call and he took it from there. Needless to say I don't miss many opportunities to return to the arboretum. I enjoy the distinction of directing their most popular program, BugFest, and designing the first trails that were not part of the original master plan: Bartram's Trail and the Ross Hutchins' Trail.

That said, I had to see Hans Herrmann's exhibit, associate professor of architecture at MSU. His exhibit featured the unbuilt buildings at the arboretum. He has spent 10 years as a faculty member and landscape student working at the arboretum and was familiar with the drawings of the unbuilt buildings. With 10 undergraduate students he built the most exciting exhibit I have seen on campus! It includes physical and virtual reality renderings of the unbuilt structures.

Hans Herrmann has done the definitive job of capturing and highlighting the internationally renowned architect E. Fay Jones' crowning achievement! The arboretum is the home base for many of Mississippi's naturalists including the Mississippi Native Plant Society. E. Fay Jones should be adopted as a Mississippi resident and inducted into our hall of fame. If you feel as I do about the Crosby Arboretum and have the means, I encourage you to help in its support.

Hurricane Season Thoughts on Global Warming

Category 5 Typhoon Pam Devastated Vanuatu – A Fictional Situation inches close to becoming a Reality ***by Dr. John Guyton***

Barely above sea level in the Pacific Ocean this small island atoll is in danger of disappearing as the planet continues to heat up. At 35,000 feet flying from Australia to Fiji, south Pacific Islands have an ephemeral appearance in the large ocean. After listening to Michael Crichton's novel *State of Fear*, on CD during a long road trip I had to figure out just where Vanuatu was, and if I had flown over it. I am one who definitely prefers the window seat and flies with maps! I enjoyed watching the lights of the widely scattered islands from the cockpit of a 747 while flying from Los Angeles to Melbourne Australia during at night and the denser islands from Melbourne to Fiji during the day. While in Fiji I read a newspaper article about the plight of indigenous people on a nearby island in Oceania that was soon going to be underwater and this was in 1994.

In 2015 a Category 5 Cyclone with 200 mph winds damaged 90% of the buildings, flattened palm plantations, and completely destroyed some remote villages. The thought persist that as the planet heats up hurricanes and tornados may become more intense.

In the introduction to Crichton's *State of Fear*, I learned the focus of the book was a lawsuit by the Pacific Island of Vanuatu, located between Australia and Fiji, against the US EPA for global warming! In Crichton's book, Peter Evans, a Los Angeles lawyer with millionaire and environmental philanthropist George Morton are central characters. Morton is the primary supporter of the National Environmental Resource Fund (NERF) that is suing the U.S. on behalf of Vanuatu for damages caused by global warming and sea level rises. Eco-terrorists connected to NERF are attempting to control the public through fear of global warming catastrophes and a slate of catastrophes of their own design. The main character, Dr. John Kenner, professor of Geoenvironmental Engineering at MIT, and secret agent, along with Evans and a romantic interest of course, discover the plot and pursued the conspirators across Antarctica, Arizona and a Pacific island inhabited by cannibals and man-eating crocodiles. The plan involves murder using the venom of a rare Australian blue-ring octopus, car and snowmobile chases, shoot-outs, cannibalistic rituals, underwater explosions to create a tsunami targeting California and a danger of global warming conference, using a chain of explosives to sever and drop an Antarctica ice-shelf into the ocean, and wire guided missiles to produce lightning and floods, etc.

Crichton repeatedly attacks environmentalists and the science behind global warming. We recommend the CD instead of the book…

Indifference to the appearance that Crichton considers global warming a hoax the CD made for a more alert trip, critically listening to and scrutinizing the characters comments for his science mistakes. If you are taking a trip with children have them critique the facts using their smart phones to do a little fact checking! Have them keep a record of <u>your</u> discoveries. In the process of becoming a scientist we often guide students through critical analysis of other scientists' research papers, and even though Crichton's book is not a scientific paper it will prove to be a good simulation.

The Fact that Children are Curious about Nature and Bugs has become Abundantly Clear; And it is Past Time for a <u>New</u> Education Reform!

Insect museums remain popular after many years of operation, and after several years as director of Mississippi State University's Extension Arthropod Zoo I concur. Prior experience with teachers and county Extension agents in creating outdoor classrooms and developing appropriate activities to teach the required curriculum support this idea. As a member, and former Chair, of the Entomological Society of America's Education and Outreach Committee I know others who work with teachers and children and endorse this fact.

The last sweeping educational reform had its roots in Kentucky. The Kentucky Supreme Court declared Kentucky's system of school finance unconstitutional and ordered the Kentucky Legislature to create an entirely new system during its 1990 session involving curriculum in addition to finance. The General Assembly of Kentucky passed the Kentucky Education Reform Act (KERA) which greatly increased funding and pioneered

the development of new practices and curriculum elements that have since been adopted nationally (https://uknow.uky.edu/kentucky-recognizes-education-reform). I was selected as a member of several committees involved in developing the curriculum including the science subcommittee. An important committee was charged with developing a novel assessment strategy based on performance. I served as a leader in the science assessment committee that trained employees of the organization hired to write Kentucky's annual assessments, and served on a special committee considering implementing some of the strategies in Kentucky's universities, to name a few... Everybody from California to Mississippi were visiting our committees to learn what we were doing. Several testing companies sat in on our discussions and test item writing sessions to learn about the new "performance assessments."

I was there when the chosen test company, *Advanced Systems',* vice president dropped the A-bomb on Kentucky. In his fall address to the Kentucky test writing team he announced they had been writing test items down and they would be able to sell schools *practice tests*! I stood up, was recognized and lodged a protest explaining that was not prudent or necessary and schools should use their funds for educational supplies, not practice tests. The 300+ participants rose to their feet and applauded, and it continued as the VP repeatedly tried to regain control, and it only ended when I sat down. Advanced Systems went on to produce practice tests, and their new money maker (practice tests) was copied by all test companies making them rich and school districts too financially poor to supply teachers with teaching supplies and materials. Every state began to adopt Kentucky's misdirected program and Advanced Systems got rich by selling practice tests.

It is time for a new reform. What we need at this point is something that really is "novel," and highly motivational.

Novel is something new and original. Something that not been seen or used. **Novel** is based on the Latin "novellus" meaning "new, young or fresh." I deeply regret leaving my adopted state when they needed me most; and I have had a long time to think about how we need to restructure education and crawl out of the education hole into which the United States has fallen.

Proposal: One novel program would be to develop a curriculum utilizing the outdoor classroom and its inhabitants, or bugs and their plants. We are an agricultural state and that is good start. Dr. Joy Anderson and I along with a group of her Master Gardeners explored a novel program some years ago that had great potential to reinvigorate education. The teacher workshops we conducted were exciting and revealed that most of the current curriculum could be enhanced with the use of outdoor classrooms and different methods of instruction.

Eating Nature, Naturally… by Dr. John Guyton

Spring and Summer Edibles

There is a reason spring is the season of growth and rebirth. On the spring or vernal equinox in our hemisphere it is only going to get better! The sun is crossing the equator on its annual journey north. If you are on the equator you can witness the sun rising directly in the east, setting directly in the west and you will be standing on your whole shadow at noon. We are headed toward summer and enjoying earlier sunrises and later sunsets. Longer days encourage plants to flower, birds are becoming more active and we catch spring fever! Bugs are coming out. Time for a festival or bonfire! **If the woods are still wet from the monsoon** we have been experiencing throw a small Osage Orange into the fire for its wonderful sparks!

The longest day and the shortest nights are during the summer solstice. Day lengths decreases after the solstice.

Plantain (Plantago major) or buckhorn

Readers will recognize this is a favorite medicinal plant of ours. It stems, leaves and flowers are also edible, and the lance leaf plantain gives a spinach salad a gentle bite. Don't wait too long in the season to enjoy. They get a little bitter when they begin putting up flower stems. Start dining on plantago early in the spring. Flowers have 4 translucent petals and adorn the top of the stem. The fruit containing seeds cluster along the stem. Leaves can be soaked in saltwater (5 min) and boiled. Don't over boil. You can steep the leaves in hot water

for a half hour to make a beverage that may be useful for sore throats. The seeds can be dried and ground to make plantago flour and use in pancakes.

If you get a cut or burn chew a few leaves that have been rinsed off and hold to the wound for a few minutes (3 or 4). It will stop the blood flow and speed healing.

Spicebush (Lindera benzoin)

Spicebush twigs are fragrant, and I enjoy them for toothpicks and to hold foods together when cooking. You can steep a handful of young leaves in the spring and/or twigs or bark anytime in boiling water for 15 minutes then strain and serve with honey and milk! Try 15 to 20 leaves. Dried ground fruit is a reasonable substitute for allspice.

Summer Edibles

Sassafras – still enjoying and alive! Boil washed roots with bark (flavor is in the roots). Save the roots, they can be reused. The dried and pulverized leaves can be used in soups or stews.

Greenbrier – With less exciting things in the summer, try new greenbrier shoots and growing tips. Uncurling leaves and tendrils are all excellent raw. Older tips can be boiled. Try adding to a salad for a guest. Experiment with other uses.

Prickly Pear – I became excited with the fruit many years ago and just assumed it was edible without any ill effects, except for the huge number of small seeds. And a few years later while in a Mexican market I ate nopales (prickly pear cactus pads) stuffed with chapulines (grasshoppers) and slightly fried in a skillet. Fruit is delicious, but you will enjoy a pair of heavy gloves when harvesting and the many spines must first be burned off – and there are a lot and they are small! These can be strained to make a wonderful desert punch, jelly or just sliced and added to a salad or fried like onion rings. Pulp of fruit can be used to make jelly or a drink, but you will want to pulp the fruit and strain the seeds. They contain hundreds of small seeds which can be roasted. Pads can be scraped to remove thorns and sliced into thin long pieces and cooked like green beans. Pads can be sliced and stuffed with chapulines and or meats and cooked in a wok.

Texting While Driving Might Need to be made a Capital Offense

We have seen accidents in which we were sure that cell phones were involved. I sincerely hope no one was injured when the MSU Bus was rear-ended at the railroad crossing on old Hwy 12 a few months ago; because the driver who hit the bus had to have been on the phone. The car was crumpled from bumper to bumper! Because the car behind him was on his phone also. We watch drivers on the way to work beside us every day, engaged more with their phones than driving, Many, do not even notice when the stop lights change! I agree with friend and colleague Dr. Layton that texting while driving should be considered a capital offense.

I have some space to fill and since I really enjoy the company of many native plant enthusiasts and do not want to lose you to "texting while driving," I decided to propose a reaction time test. This is a very old physics activity, but not outside your skill level.

Invite a friend who you know uses their cell phone while driving or better yet texts! Have him or her place an arm across a narrow table with their index finger and thumb opposed and ready to grasp a yardstick when dropped. Hold the yardstick vertically just even with their fingers and instruct them to grab it with their fingers when it is dropped without lifting their arm. Note how many inches have slipped by before their fingers stopped it. Repeat a couple more times and average. Lets say it was 7 inches.

Now divide the inches observed by 193.2 and take the square root. 7/193.2= .036 and the $\sqrt{.036}$ = .19 seconds. Now that does not sound so bad but let's add a couple distractions. Engage the subject in watching TV and have a friend call them and begin asking a few questions. Then after a few seconds while they are engaged on the phone drop the stick and note the measurement of the point where they grasp the yard stick and run the calculations. For metric divide the centimeters by 490 before taking the square root).

If you need to make a more critical point with a friend who enjoys a few beers on the way home, enjoy a few in the safety of your kitchen and repeat with another distracting phone call or typing a text!

If it is an emergency pull over to take the call, otherwise wait until you need to make a stop for gas or coffee. Your and/or someone else's life could depend on this.

Cell phone use is implicated in over 27 percent of all car accidents in the United States and 95% of Americans own cell phones! Cell phone companies maintain "Call Detail Records" that include calling and receiving phone numbers, time and date, call duration, and the cell sites used by the phones enabling location of call origin.

Are Endangered Species Doomed?

Tell me it isn't true – I was just told the current administration is changing the way the Endangered Species Act is administered to allow economic factors to be considered…

Mississippi Native Plant Society Conference

MS Museum of Natural Science, Jackson, MS

September 7-8, 2019

Saturday

Registration: 9:00-9:30

- 9:30 -10:30 **Dr. Dwayne Estes** – Southeastern Grasslands Initiative, Austin Peay State University
- 10:30-10:40 **Break**
- 10:40 -11:40 **John Manion** – Birmingham Botanical Garden - A Passion for Paw Paws
- 11:40 -12:10 **Dr. Lelia Kelly** – Landscaping with Native Plants
- 12:10-1:30 **Lunch - on your own**
- 1:30-2:00 **Dr. John Guyton** – Mississippi State University Extension – Commemorative Trails: William Bartram's and Ross Hutchins' Trails at the MSU Extension's Crosby Arboretum
- 2:00-3:00 **Dr. Janet Wright** – iNaturalist presentation and hike behind museum
- 3:00-3:10 **Break**
- 3:10-3:35 **Aaron Calidris** – Predators in the Pines
- 3:35-3:50 **Toby Gray** – Mississippi State University – Update on the Mississippi Native Plant Conservation Alliance
- 3:50-4:05 **Ryan Folk** – Mississippi State University – TBD
- 4:05-4:20 **Donna Yowell** – Pollinator efforts of the Mississippi Urban Forest Council
- 4:20 **Closing Remarks**
- 4:25-5:00 **Business Meeting**

Sunday

Meet in the parking lot of the Mississippi Agriculture and Forestry Museum. (Directions will be provided)

- 9:00-9:15 Marc Pastorek – Starting a prairie from seed
- 9:30 Depart from Museum for field trip to Harrell Hill Prairie.

Mississippi Native Plant Society Membership Application
Renew or Join Today!

Name_____ New ____ Renewing ____

Address_____ , _____
PO or Street Address City

Zip Code _____

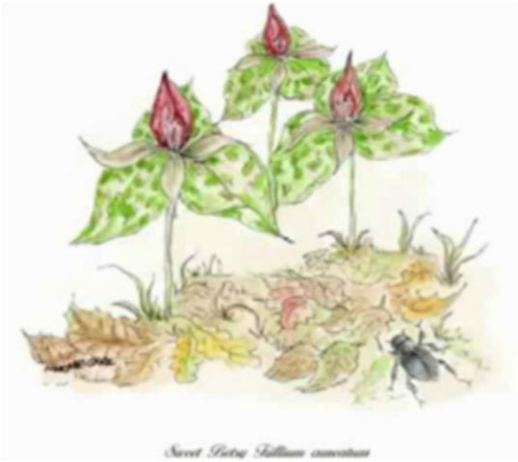
Email_____ Phone_____

Cell _____

☐ Individual or Family $10 ☐ Student $7.50 ☐ Sustaining $15
☐ Contributing $35 ☐ Life $125

Newsletter preference: ☐ Email or ☐ Regular mail (USPS)
Return form to Dr. Debora Mann, 114 Auburn Dr., Clinton, MS 39056-6002
Mississippi Native Plants is the quarterly newsletter of the Mississippi Native Plant Society

The MNPS is dedicated to the study, appreciation and preservation of native wildflowers, grasses, shrubs and trees.



Sweet Betsy *(Trillium cuneatum)*
Artwork by Margaret Gratz

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