PETAL PUSHER

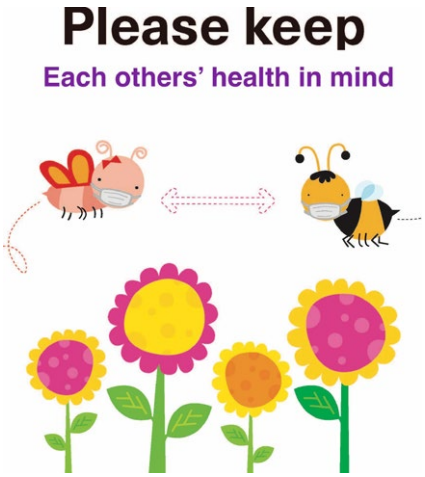
May-June 2021 Newsletter of the Missouri Native Plant Society Volume 36 No.3
"… to promote the enjoyment, preservation, conservation, restoration, and study of the flora native to Missouri."

In this issue

Breaking news: field trips are back!!

Announcing the 2021 MONPS Summer Field Trip – Prairies in Kansas City vicinity

Join us June 25-27 for our first post-pandemic field trip! We will be visiting prairies within the vicinity of Kansas City including areas at Jerry Smith Park, Swope Park, and Snowball Hill Prairie (owned by the Missouri Prairie Foundation). Arrangements are being made to hold the board meeting and presentation by a guest speaker outside. Stay tuned to the MONPS website (**monativeplants.org**) and Facebook page for updates on itinerary and meeting locations. Per CDC COVID guidelines, we recommend that MONPS meeting and field trip participants wear a mask if you're not fully vaccinated, even when outdoors. We will not pass plants around, share tools or provide food or drinks. Regardless of vaccination status, please come prepared to wear a mask if we go indoors, or to comply with any local ordinances. Please stay home if you're sick.



Plant Insect Interactions

by Casey Burks, Osage Plains Chapter

Let me count the ways.....

Consider corn. The larvae of corn earworm, fall armyworm, southwestern corn borer, black cutworm, and corn rootworm feed on corn along with flea beetles, grasshoppers and aphids. Japanese beetles gather on the silks, feeding to the point of interfering with pollination. Developing larvae of Angoumois moths and rice weevils destroy the germ.

Then consider that other plants are hosts to only one or very few insects. Isn't it interesting that some plants are fed on by a large variety of insects and other plants are targeted by only one or two? Lots of factors come into play. Let's take a closer look.

Corn (*Zea mays*): Corn was developed in Mexico over 5,000 years ago from a grass (*Teosinte*). This timespan has given a multitude of insects, a lot of them imported, time to discover its nutritional qualities. European corn borer (*Ostrinia nubilalis*) feeds on many plants besides corn, such as peppers and snap beans, but in corn the larvae often cause significant crop loss. It overwinters inside corn and other grasses. European corn borer is believed to have been brought into the US on broom corn from Hungary and Italy approximately eighty years ago. Night flying moths of black cutworms, corn earworms, and armyworms (*Noctuidae* spp.) overwinter in the South where it doesn't freeze and catch low level jet streams to quickly reach the North in the spring. Douglas C. Ferguson, an Agricultural Research Service entomologist, discovered that moths can fly up to catch the currents taking them north at 68 miles per hour. They can arrive in Minnesota in two days but can drop out along the way to start infestations.

There are three types of corn rootworms but the western corn rootworm (*Diabrotica virgifera*) is considered to be one of the worst pests of corn. This species overwinters as eggs in the soil then hatches in the spring, hoping corn is planted there. Larvae of this pest chew off corn roots which severely impacts the plant's development. It is believed to have been a corn pest in Mexico thousands of years ago and followed its host into the US.

Monarch egg on spider milkweed (*Asclepias viridis*). Photo by C. Burks

Tomato (*Solanum lycopersicum*): As with corn, tomatoes have a multitude of insects that use them for food. Tomatoes are native to South America and it is believed the Aztecs were using this fruit for cooking around 500 BC. Tomato hornworms (*Manduca quinquemaculatus*) and tobacco hornworms (*Manduca sexta*) are the well-known huge green larvae of hummingbird moths. The difference between these can be easily distinguished by the larval horn: the tomato hornworm has a black horn; the tobacco hornworm has a red horn. Researchers have studied the DNA of these moths to determine they originated in Central America. The name Manduca means glutton and gardeners can relate to how fast these green beasts can devour tomato plants and their crop.

Now for examples of plants with only a few feeders:

Milkweed (Apocynaceae): Since most everyone loves the monarch butterfly (*Danaus plexippus*), its larval host, the milkweed, is being promoted to help with the adult migration to Mexico. It is also widely known that milkweeds contain poisonous cardiac glycosides and birds soon learn to leave monarchs alone. Besides monarch larvae, a yellow aphid with black legs is often found feeding on milkweeds. This aphid is called "the oleander aphid". A lot of insects have strange habits, but aphids are especially intriguing. Aphids are small, soft bodied insects with several survival strategies such as, without fertilization, producing live birth females that also quickly begin producing live offspring. If the colony gets too crowded, some adults develop wings that take them to another

food source. They also have a sexual form. The origin of aphids is as old as the beginning of gymnosperms and angiosperms. Since they feed by sucking juices out of plants, they have an intimate connection to their host and as plants evolved, so did aphids. Like monarch larvae, aphids that live on milkweeds adapted to overcoming cardiac glycosides. Milkweeds and oleanders belong to the same "away dog" family, Apocynaceae. A valuable cardiac glycoside medicine, digitoxin, is often used for treatment of congestive heart failure as it stimulates the sodium/potassium channel pumps. However, cardiac glycosides in oleander are so potent that consuming even a small piece can kill a dog. The adaptation of channel pumps of both monarch larvae and oleander aphids to be able to feed on these plants is amazing.

Pipevines (*Aristolochia* spp) and Wild ginger, etc. (*Asarum* spp): The beautiful pipevine swallowtail butterflies *(Battus philenor*) and their larvae are toxic because larvae only feed on plants containing aristolocic acid. This acid, which can cause kidney failure and kidney cancer in humans, is sequestered in the larva as it feeds, remains inside the adult and is passed onto their eggs. As with the monarch butterfly, birds soon learn to leave them alone.


Pipevine swallowtail on *Aristolochia*. Photo by C. Burks

Ash (*Fraxinus* spp.): Ash trees are native to eastern and central North America. There are an estimated 8 billion ash trees in the United States – the majority being the white and green ash trees (mdc.mo.gov). It's a lovely tree with opposite branches and hard, white wood that is used for furniture, baseball bats, tool handles and guitars. It is also being killed by the millions since emerald ash borer (*Agrilus planipennis*) arrived in Michigan in 2002. In their native Asia, EAB larvae and eggs are attacked by several species of parasitoid wasps. Here, with no natural controls, EAB threatens the entire North American ash population. It is believed to have been brought in on wood from Asia in cargo ships. In 2008, EAB was found in southeast Missouri; in 2014 by St. Louis (missouribotanicalgarden.org). I recently visited relatives in Kentucky and was told that most of the ash on their woodland property were dead.

After emerging through D-shaped holes in May/June, female EAB lay their eggs in ash tree bark; then the larvae tunnel into the cambium and feed until fall. They overwinter as larvae. This larval feeding causes interruption of the tree's supply of water and nutrients and can kill a healthy ash in two to four years. The plea to not move firewood is due to the "larvae being able to live up to two years after a tree has been felled" (steintree.com).

Oak (*Quercus* spp.)/Oak wilt (*Bretziella fagacearum*): You are, no doubt, familiar with the behavior of picnic beetles. During the summer, it doesn't usually take them very long to find your food when you're eating outside. Picnic beetles are a good example of the behavior of beetles in the family Nitidulidae. This is also connected to the correct window for pruning trees, December through mid/March in Missouri; wounds from pruning too late in the spring are vulnerable to diseases. An oak infected with the oak wilt fungus forms a "mat" which is where beetles can pick up the fungus, then fly to other trees. Spring storms that break oak branches, or mechanical injuries, present an opening into the tree and can attract Nitidulids that carry the oak wilt fungus, *Bretziella fagacearum*. Research by Hayslett, Juzwik and Moltzan at the Northern Research Station (Madison, Wisconsin) found that three species of Nitidulids are able to transmit oak wilt fungus to fresh wounds on healthy oak trees during the growing season. The red oak group is more susceptible than the white oak group, however, once established oak wilt is lethal. Further studies by Northern Research Station group have evidence the fungus was introduced, possibly from Central or South America, or Mexico.

So, in essence, it appears that old time plants have had lots of time to gather pests. Some imported insects find their niche on a narrow group and thrive without controls. Since it doesn't have wings, the oak wilt fungus found a carrier to transmit it.


EAB tunneling. Photo by S. Farrington


EAB exit hole. Photo by S. Colatskie

Join the Fun - Record the Most Plants in 2021!

Missouri Botanists' Big Year Competition

by James Faupel, Project Creator and Admin Restoration Ecologist, Missouri Botanical Garden

We are incredibly excited to announce the first annual Missouri Botanists' Big Year Competition! This competition is being held on the online citizen science tool and website, iNaturalist. Currently our members have not been very actively involved on this platform, while many of our neighboring state plant societies have been very active in improving their states' data. Our observations will help researchers track and better understand the flora of Missouri and how it changes over time, from native plants to exotic invasives. The data provided by our members will be publicly available, to help improve science communication. We also hope to present iNaturalist training opportunities in the near future to help new users get acquainted with using the website and phone app. We will continue to host these Big Years and then will be able to compare data from each year's competition. Which botanist will claim this year's biggest bragging rights by the end of the year?!

Thank you to our neighboring states, Illinois and Kentucky, for inspiring the creation of the Missouri Botanists Big Year. But let's make this a friendly competition and show our neighbors what kind of flora we're made of!

Create an account and join the project here to participate in the competition: https://www.inaturalist.org/projects/missouri-botanists-big-year-2021 The rules and prizes listed below also appear on the iNaturalist project page.

Project rules:

1. Observation must be a plant observed in Missouri in 2021.
2. Observation must be a wild plant, whether native or non-native. (Plants physically/purposefully planted in a human maintained garden/landscape will not be entered into this project and should be marked as captive/cultivated in your observation.)
3. You must be a member of the project - join at the link shown in the paragraph above.
4. Observation must be research grade, so submit many descriptive photos.
5. To be entered to win the Grand Prize, you must be a member of the Missouri Native Plant Society - join here: https://monativeplants.org/membership/

Grand Prize will be awarded for most species observed in 2021: Winner will receive a prize worthy of a field botanist, including a hand lens and field plant press, with the possibility of even more!

Prize for most species observed by a non-member - A free one year membership to the Missouri Native Plant Society!

Honorary Titles will be announced: Receive these bragging rights worth holding over the heads of your fellow Missouri botanists.

Most observations! Most identifications! Most Poaceae species! Most Carex species! Most Bryophyte species! Most Fern species! Most species of DYCs! Most favorited observation!

Additional Information

• If you are an expert in the field of botany in Missouri, please help us vet and identify the observations made. There are not nearly enough professionals helping identify the flora of Missouri on iNaturalist. Log onto iNaturalist and help here - https://www.inaturalist.org/observations/identify?

• Please mark the geoprivacy of any state-listed rare or endangered species as "obscured." (If you do not, we will notify you.) Our partners at the Missouri Department of Conservation will greatly appreciate your assistance in helping protect our plants of conservation concern! See the list here - **Missouri Listed plants**

• This is a collection project for only the year 2021, within the umbrella project "Missouri Botanists Big Year," that will collect the data of every year of the event going forward. You must join each year's project to have your observations be included in each year's event. Joining the umbrella project doesn't make your observations available to the 2021 project.

•To see all the vascular plants observed on iNat within the state of Missouri, visit our project the Flora of Missouri - https://www.inaturalist.org/projects/flora-of-missouri

•To see all the non-vascular plants (also known as bryophytes) observed within the state of Missouri on iNat, visit our project MOSSouri - https://www.inaturalist.org/projects/mossouri

• Need help identifying a plant? Check out the Missouri Plants website for detailed information on our flora - http://www.missouriplants.com/

ADDITIONAL HELPFUL LINKS FOR MISSOURI PLANT IDENTIFICATION:

https://nature.mdc.mo.gov/discover-nature/field-guide/search
https://www.missouribotanicalgarden.org/plantfinder/plantfindersearch.aspx
http://legacy.tropicos.org/Project/MO
http://bonap.net/tdc
https://www.natureserve.org/biodiversity-science/species-ecosystems/plants
https://plants.sc.egov.usda.gov/java/
https://grownative.org/native-plant-database/
https://www.illinoiswildflowers.info/

Thanks for joining the project and good luck!

amazonsmile

Donate to MONPS When You Shop!

AmazonSmile is an easy way to support MONPS. Every time you shop on smile.amazon.com, the AmazonSmile Foundation donates 0.5% of your purchase of eligible products to MONPS.

Simply visit smile.amazon.com and search for Missouri Native Plant Society Inc. After you finish shopping, Amazon will automatically donate to MONPS. You may also click the AmazonSmile link on **monativeplants.org**.

Make sure to navigate to smile.amazon.com each time you shop. The default amazon.com will not result in a donation, and your smart phone application may not support AmazonSmile. Visit About AmazonSmile to read more about the AmazonSmile Foundation.

iNaturalist Basics

by Pam Barnabee

iNaturalist is an online community that allows naturalists all over the world to connect and share their observations. Each observation documents a plant, animal, or other organism that you encountered at a particular time and place. You may already be familiar with the app as a way to post a photo and get ID suggestions, but it's much more than that. If you've provided clear photos from different angles, other naturalists will be able to add to, improve upon, and confirm the species. Observations that have been identified to the species level by two or more naturalists are considered research grade. These can be used in research projects to track species distributions over time.

The first step in using iNaturalist is to create an account on the **iNaturalist.org** website or on the free mobile app that's available for Android or Apple devices. If you plan to take photos with your phone, you should also check the privacy/location services and camera settings to ensure that they're set to record your geolocation. This will allow the mobile apps to automatically record the time, date, and GPS coordinates from your photo. Alternatively, you can enter observations on the iNaturalist website by uploading your photos and, if the photos aren't geotagged, use the calendar and map tools to enter when and where you made the observation. Visit **iNaturalist.org** for more detailed "Getting Started" instructions.

The Missouri Prairie Foundation is also using iNaturalist to collect data on species diversity. If you join their prairie projects as well as the 2021 Missouri Botanists' Big Year, you can contribute to two research projects as well as add to your MONPS contest tally; it's a win-win-win! Learn more at **https://www.inaturalist.org/projects/missouri-prairie-foundation-citizen-science-biodiversity-project**.

Odds and Ends

Automated Membership Renewal Reminders: Coming Soon!

Remembering to renew your MONPS membership can be a hassle. Currently, the membership year begins on July 1 and expires on June 30. When you're busy with outdoor activities and other life matters, that date can very easily slide by unnoticed. Your MONPS Board has a remedy for that: during the coming membership year, we will be instituting a process that will automatically send you a renewal reminder email a week or two before your membership expires. Since we don't want to send a deluge of emails through our email server in one day, we will also be extending some membership expiration dates in order to space them out. So, for example, instead of June 30, your new expiration date may be July 2 or July 5. As another way to avoid the hassle of paying annual membership dues, members now have the option of joining or renewing for anywhere from one to five years at a time. For new and lapsed members, your membership expiration date will be one (to five) years - depending on the option you choose - from the date we receive your membership form. For current members who renew early, your membership expiration date will be extended for one (to five) years from your current expiration date.

If we don't have an email address for you and you get a mailed copy of the Petal Pusher newsletter, your expiration date is printed on the address label.

Not getting the Missouri Native Plant Society organizational emails ???

Most email clients have a "safe senders" mechanism for you to make sure that your email server always sends mail from our MONPS server to your inbox.

- Some just have you add our server to your "Contacts"
- Some have you create "Rules".
- Some have an actual "Safe Senders / Domains" area in the settings.

To ensure that you get the organizational emails please add these two domains to whatever your email's "safe senders" process is:

monps.org **webapps.monps.org**

Missouri Native Plant Society Awards deadline extended to June 10!

The MONPS Awards Committee seeks nominations of people who have supported the preservation of Missouri's flora and have helped MONPS beyond an average effort. Please see the March/April Petal pusher or the MONPS website for awards types and information.

Please submit nominations ASAP to Awards Committee Chairperson, Malissa Briggler: malissa.briggler@mdc.mo.gov. Thank you!

Invasive species update

"Invasive" is defined as an aggressive, non-native species whose presence causes or is likely to cause economic harm, environmental harm, or harm to human health.

In the September/October 2019 issue of the Petal Pusher, we featured a story on the Missouri Invasive Plant Taskforce's (MoIP) statewide invasive plant assessment that maps abundance, impact and rate of spread of 142 invasive plants in the state. Since then, MoIP has used that data to publish the 2021 List of Expanding Invasive Plants. Because of their vigorous expansion, these species are particularly important to identify and control. Assessments will be updated every several years based on additional and ongoing in-the-field observations and review. More information can be found at the MoIP website: moinvasives.org.

In Memorium…some passings to note

from the office of the Editor

In the Springfield Area, we lost two folks widely known at least to the SW Chapter.

1) **Bob Lovett:** Founder of the Lovett Pinetum.
For several years pre-pandemic, the SW Chapter held its Fall meeting and cookout at the Pinetum. Filled with conifers and native plant habitat, the Pinetum is a magical place, and was founded for the simple love of trees.
Link to his obituary: Greenlawn Obituary for Robert Lovett
You can listen and read about the Pinetum here: https://lovettpinetum.org/
and: KSMU Pinetum story (public radio)

Just one of the many special conifers at the Pinetum. Plum yew, *Cephalotaxus*. Photo by Michelle Bowe

2) Bob Ball: Nature photographer.
Robert Ball was a talented photographer and nature lover. It was not an uncommon event to be wandering around in a prairie or glade or forest and find him sitting next to a plant and/or animal, studying and photographing his subject. Or to find him and his wife, Ruby, doing volunteer work at the Nature Center or the Springfield Botanical Garden. His full obituary can be found here:
Robert Ball, tribute

New Members!

By Ann Earley, Membership Chair
Click here to join!

Kansas City
Jennifer Hatten, Independence
Alicia Toney, Belton

Empire Prairie
Mylissa Stutesman, Trimble

St. Louis
Amy Crow, Wildwood
Sarah Carmody, St. Louis
Jennifer Bagley, Affton
Susan Van de Riet, St. Louis

Southwest
Susan Hubbard, Eureka Springs, AR
Don Simpson, Springfield

From the editor

Apologies for this issue being so late again (thanks, random quarantines)! Thank you for hanging in there. Thank you to our Assistant Editor, Pam Barnabee for getting everything in good shape before it came to me! Thanks also to our proofreading team: Malissa Briggler, Dana Thomas, and other board members. Thank you authors, chapter representatives, and other contributors.

Please consider making a submission for a future Petal Pusher! Note that all submissions are now going to Pam Barnabee (she will send them to me after preliminary editing). Here is some information for submissions:

A. The theme for the next issue is "Historical Botanists." Other submissions are also welcome!! Some of the recurring columns are: Conundrum Corner (tips to distinguish between similar-looking plants), Invasive Tip of the Month, Name Change of the Month, and Poetry Corner.

B. Send ONE email saying "here is my contribution on_____," and attach (don't embed) the following:

1) an article in Word format with photo captions at the end (no photos in the Word document) and your name in the text.

2) Two to 3 images, preferably in JPEG format

C. Use only one space between sentences

D. Even short notes with pictures would be great!

E. Send to: pamela.barnabee@gmail.com (don't send them directly to me!)

F. Due date for the next issue is: June 25

Thank you so much,
Michelle Bowe

The Next Generation of Invasive Species

by Malissa Briggler

Most articles on invasive species focus on plants that are already a nuisance. They usually include information on how to get rid of them and which native plants are good alternatives. Less often we see articles that focus on the plants with potential to be invasive. While it is important to be concerned with the problems at hand, it is also important to identify, prepare, and hopefully prevent problems that are approaching.

A good friend of mine once used an analogy with potentially invasive species, referring to exotic species that are not considered invasive or even common but have shown an ability to escape cultivation and thrive in natural habitats. He said it was like an apartment fire where the fire is burning in one apartment but hasn't reached the other apartments…yet. The immediate reaction would be to call the fire department and extinguish the fire as quickly as possible. We wouldn't wait until the entire building was on fire and then call the fire department. Metaphorically, invasive species start out as small, manageable fires. Unfortunately, too often the alarm is not raised about the potential impacts of the species until it has become well established and widespread. Every apartment is burning in the building regarding species like wintercreeper (*Euonymus fortunei*), callery pear (*Pyrus calleryana*), and bush honeysuckle (*Lonicera maackii*). Yet there are also new species coming to our state that have created small "fires". Their presence hasn't raised much of an alarm, but now might be the most effective time to prevent or control the spread of a nuisance plant.

Species that are introduced for landscaping purposes are perhaps the easiest threat to see coming and most preventable. Not all of them will be aggressive invaders like wisteria (*Wisteria frutescens*) and tree of heaven (*Ailanthus altissima*). However, species that have shown to be aggressive in other areas or can escape cultivation and thrive in natural areas could be members of the next generation of invasive plants.

Japanese zelkova (*Zelkova serrata*) is a member of the elm family (Ulmaceae) and originates from Japan, Taiwan, and eastern China. It has gained popularity as a tree that can tolerate the urban environment and resist Dutch elm disease. However, the species has also been known to escape cultivation and is listed as an invasive species in Kentucky and Virginia. Known by a variety of cultivar names (City Sprite, Green Vase, and Halku, among many others), it is much easier to find information on where it can purchased rather than concerns about its potential to invade natural areas. High demand for this plant is likely to result in greater opportunity for it to become naturalized and a nuisance plant in Missouri.

Zelkova serrata. Characteristic crenate to serrate leaf margins of Japanese zelkova. Photo, Wikipedia.

Two Viburnum species have recently stirred concern that they too could be the next ornamental exotics to invade natural areas. European cranberry bush (*V. opulus*) is not widely considered a nuisance species in Missouri, although the Missouri Botanical Garden advises against planting it. The species is considered invasive in several northeastern states. Its leaves are three-lobed and flowers are remarkably showy, which gives it another market name of Snowball. Recent reports indicate that the nursery market for this species is growing in Missouri and it is most likely to become more common as a landscape ornamental.

Typically, concern about potential invasive species is raised when there is a high demand for a particular exotic plant. The observations and data that show it to become invasive are usually gathered after the species is already widely planted as a landscape ornamental. In an article in the most recent volume of *Missouriensis* (2020, Vol 38: 1-3), Aaron Floden and Michael Saxton were the first to describe the invasive capabilities of *V. dilatatum* in Missouri. Native to Japan and eastern

China, the plant is sometimes known as Linden arrowwood and is already considered an invasive species in some northeastern states. Like European cranberry, we're likely to see a greater demand for this species due to its attractive flowers and prolific production of bright red berries. This species is not currently a popular ornamental sold in Missouri, but if the market improves, we already have indications that it could be invasive.

Observations of other species seem reminiscent of the status callery pear held just a few decades ago. There is good evidence the plants can escape cultiva-

Viburnum dilatatum. Linden arrowwood. Photos, Wikipedia

tion and spread to natural areas of Missouri, yet naturalized populations generally appear to remain local. Despite gaining more awareness that they can escape cultivation and become invasive, the plants remain widely popular at nurseries.

Princess tree (*Paulownia tomentosa*) is possibly the "next callery pear". It is promoted for landscape use due to its rapid growth and attractive flowers. This species is also promoted for timber production and carbon sequestration. Much like callery pear, princess tree found its way to the United States long ago but not until recently has it raised much concern in Missouri regarding invasive capabilities. At a distance, it looks very similar to a catalpa tree (*Catalpa* spp.) with its large, heart shaped leaves. Upon closer inspection, the leaves of princess tree will be covered with dense hair and can get much larger than catalpa leaves, it has purple flowers, and the fruit is an egg-shaped woody capsule instead of a long slender pod.

Heavenly bamboo (*Nandina domestica*) is another species that is in high demand despite increasing concern about the invasive capabilities. It's been a popular ornamental and aggressive invader in states to our south, but until recently has not been a concern in Missouri. Naturalized populations are appearing, particularly in and around urban areas in southern Missouri. A species native to Japan and China, heavenly bamboo is an evergreen shrub to the south, but Missouri winters usually result in a semi-evergreen plant. Colder temperatures in the central and northern portions of our state may prevent heavenly bamboo from successfully invading but there is another reason to avoid planting this species. The bright red berries are known to be toxic to birds (and pets)!

Of course, simply landscaping with native species is the best course of action. However, it is helpful to be informed of what species are becoming popular that have a greater potential to become the next major problem. Some states have been more proactive by passing legislation to outlaw the sale of nuisance and potentially nuisance plants within their borders. While this action does not stop the purchase and planting of all invasive plants, ceasing the sale of certain plants is likely to slow the spread and help raise an alarm. As Missouri law does not currently restrict the sale or purchase of potentially invasive plants, there is a greater importance to be aware and educate gardeners and landscape designers about the plants likely to be the next generation of invasive species.

Princess tree - A photo taken of one leaf from a first-year plant growing near the side of a house just outside Jefferson City. Notice the window in the background for scale. This tree was not planted and grew to approximately 10ft before the landowner cut it down. Photo by M. Briggler

CHAPTER REPORTS

SAINT LOUIS

Lynette Baker, St. Louis Chapter Representative

03/24: The St. Louis Chapter held its third meeting of 2021 via Zoom and featured a presentation from Dr. Richard Abbott. Richard developed a special presentation on plant identification. This presentation was a continuation of his talk given at the January 27th meeting. The detail was based on over a decade of feedback from his relationship with MONPS-St. Louis. I was given the opportunity to talk with Richard after the meeting and ask him a few questions. This is outlined below:

- What was the main goal of the presentation? To teach that as confusing as the natural world may seem, you can understand and identify plants by focusing on five details: 1. plant habit, 2. leaf composition, 3. leaf arrangement, 4. margin, 5. presence or absence of stipules.
- What makes this important? There are simplified ways to deconstruct problems. Sometimes it requires patience.
- What does this science provide to people? Botanical science helps people articulate what they see in their brain.

Dr. Richard Abbott is a dedicated professor and teacher, demonstrates a high standard, and shows up for his students being the best that he can be.

Upcoming St. Louis Chapter Events

05/26: Chapter meeting. To be held via Zoom. Dr. Quinn Long, Director of Shaw Nature Reserve. Topic: to be determined.

Meetings for 2021 will be held via Zoom on the 4th Wednesday of each month, January through October (excluding June), at 7:00pm. Zoom invitations to be sent out within a week or so in advance of each.

PARADOXA

Pam Barnabee, Chapter President

After a year-long pause, our crew who collect specimens for the herbarium at Bray CA is back in action. In April, we searched woodland, glade, and riparian habitats. This is our third spring, but we're still managing to find some plants that went unnoticed before and that we're able to identify. (Sedges and grasses are still a challenge!)

Pam and Jerry Barnabee displaying native plants for pollinators and our orchid print sweatshirts!

On April 24, we set up our banner and display, with the theme "Native Plants for Pollinators," for the Earth Day event at the Public House in St. James. The cold, rainy weather made for a low turnout, but we talked to several people about plant selection for their projects and promoted the native plant sale to be held May 1 in Rolla.

Our monthly walk-abouts are still on hold, but as more of us get vaccinated, we hope to resume them in a few months.

SOUTHWEST

by Michelle Bowe (including images)

Despite the pandemic and random spring blizzards, the SW (Springfield) chapter has had a busy April! On April 3 and 24, we met at Bull Mills (property of Bob and Barb Kipfer—Bull Creek floodplain and adjacent woods) along with members of the Master Naturalists, the Audubon Society and some Missouri State University students. It is always a delight to see all of the early and mid-spring bloomers, including *Uvularia grandiflora*. The entire area is delightful, and we also enjoyed cavorting in the waterfalls.

Bull Mills area--Spring wildflower walk, 2021

Bellwort (*Uvularia grandiflora) at* Bull Mills.

Greenfield Glade (Nature Conservancy land; former mining area)

On April 17, Andy Thomas (University of Missouri; Ozark Land Trust) and The Nature Conservancy hosted a field trip to Greenfield Glade, an area formerly used for mining (limestone?), and a site for the federally threatened Missouri bladderpod (*Physaria filiformis*). A small group of us met on the chilly morning to expore this little-known area. Not too much was blooming yet, but we also found some dwarf spiderwort, *Tradescantia tharpii*, hanging out on the cliffs.

Dwarf spiderwort (*Tradescantia tharpii*), left, and Missouri bladderpod (*Physaria filiformis*), right.

Missouri Native Plant Society Membership Form

Name	
Address	
City, State, ZIP	
Phone	
Email	

Membership Level (check one):

	Student	$5
	Goldenrod	$10
	Sunflower	$25
	Blue Bell	$50
	Blazing Star	$100

Chapter dues (optional, check all that apply):

	Empire Prairie (Saint Joseph)	$5
	Hawthorn (Columbia)	$5
	Kansas City	$5
	Osage Plains (Clinton)	$5
	Ozarks (West Plains)	$5
	Perennis (Cape Girardeau)	$5
	Saint Louis	$5
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"A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong when it tends otherwise."
—Aldo Leopold