PETAL PUSHER

January-February 2026 Newsletter of the Missouri Native Plant Society Volume 41 No.1
"… to promote the enjoyment, preservation, conservation, restoration, and study of the flora native to Missouri."

In this issue

Ten Ways Scientists Use Herbaria to Advance Biodiversity Research

by Andrew Kaul

For centuries, botanists have relied on dried, pressed plant specimens to serve as official reference materials for documenting the world's incredible diversity of plant species. These materials are mounted on archival-grade paper along with a label containing information about the specimen such as collection date, location, and the collector's name. Altogether, the paper, plant material, and label create the fundamental unit of botanical taxonomy, a specimen voucher. These vouchers are stored in plant "libraries" known as herbaria.

The first known herbarium dates to the 16th century Italian renaissance, where these "dry gardens" were created in association with the first formal botanical garden in Pisa (Tomasi 1983, Cristofolini 2024). Those specimens were used for botanical education at a nearby university. There are now over 4,000 herbaria around the world, containing a total of around 400 million plant specimens, representing each of the nearly 400 thousand plant species known to science (Thiers 2025, World Flora Online 2025). The Missouri Botanical Garden (Mobot) in St. Louis, stands out among these many institutions as housing one of the largest herbaria in the world, with over 7.5 million specimens (about 2% of the global total (Missouri Botanical Garden 2025)) collected from around the world, with particular emphasis in North America, and the New World and African tropics. Yet, Mobot is only one of twelve herbaria scattered throughout Missouri, with others run by state agencies (DNR), and institutions of higher education, including College of the Ozarks, Missouri Southern State College, Drury University, Missouri State University, University of Central Missouri, William Jewell College, Missouri Western State University, Truman State, and Northwest Missouri State University (Thiers 2025).

Herbarium specimens are still used for taxonomy and education, but the total scope of their value is only starting to be realized as new uses for herbaria are discovered (Lavoie 2013). Below, I outline ten ways scientists at Mobot are using herbarium specimens to answer modern research questions.

1. Describing new species

Mobot is home to thousands of "type specimens" and describes about 200 new plant species each year. These contributions account for around 10% of the total global rate of 2,000 new plant species per year (Cheek et al. 2020). Type specimens are plant vouchers that serve as the official physical representative of a species.

2. Revising taxonomic assignments

The herbarium at Mobot employs dozens of scientists and support staff, each with unique taxonomic specialties. Taxonomic revisions are essential for aligning our understanding of how extant (still living) plant species are related to each other and their extinct relatives, and thus how we group and name them accordingly. Botanists publish papers on these topics to assign species new names, combine or separate different groups based on new information (such as genomic data), or add in new species not previously known to science. Some noteworthy plant families that Mobot scientists have focused on include the aroids (Araceae), trumpet vines (Bignoniaceae), grasses (Poaceae), evening primroses (Onagraceae), and orchids (Orchidaceae).

3. Assessing ranges and range sizes

Because specimen vouchers include information on the location a plant was collected, digitized collections can provide valuable insights into species' ranges and more nuanced patterns of occurrence. These data are increasingly easy to access through open-access websites. The Biota of North America Program (BONAP) contains several tools built from occurrence data and provides county-level range maps of plant species in North America. Tropicos (designed and run by Mobot), hosts global data on plant species occurrences based on herbarium specimens. And finally, the Global Biodiversity Information Facility (GBIF) combines information from several hundred repositories focusing on different taxa to produce a meta-repository containing species across the tree of life.

4. Documenting changes in phenology

Similar to how specimen locations are useful for range mapping, the dates that specimens were collected are useful for studying phenology or how species' "life history" events, like reproduction, change across seasons and years. One of the most studied phenological patterns in plants is when they bloom. Scientists study how the timing and duration of flowering are affected by factors such as climate and weather, land management practices, population genetics, or ecological interactions like competition. For example, recent work by a Mobot team demonstrated that a century of altered climate has changed the timing of flowering of herbaceous species at Shaw Nature Reserve in Gray Summit, Missouri, by increasing how long species bloom by over a week on average (Austin et al. 2024).

5. Developing new techniques for species identification

A new project with the goal of "revolutionizing species identification" seeks to train computer models to identify plants using spectral reflectance of specimens. Spectral

Example of digitized specimen voucher of common blue violet (*Viola sororia*). This image contains information on species determination, collection date and location, habitat, and neighboring species. Digitized specimens also include a ruler for scale and color chart for reference (at top). Small paper folders as seen in the top right are often used to hold fruits, seeds, or any other materials that may separate from the specimen. Photo from Tropicos.org.

reflectance is how much light reflects off a surface. This includes regions of light that we can see and includes regions that are "invisible" to humans, such as the near infrared and shortwave infrared regions. Every material – including leaves – absorbs light at specific wavelengths, which means that spectral reflectance can act like a "fingerprint" for plant specimens. Mobot scientists are using these spectral fingerprints to train artificial intelligence models to automatically identify plants, an approach that has the potential to accelerate plant species discovery and conservation.

6. Identifying biodiversity hotspots

Work in progress by Toby Pennington (Washington University, Mobot) and colleagues is using herbaria to evaluate the surprisingly difficult question of how many species occur in different tropical habitats. His work has found that remarkable plant diversity is found not only in tropical rainforests, but also in less well-known biomes, such as tropical dry forests and savannas.

7. Quantifying plant community change over large spatial and temporal scales

Focusing on the prairie flora of Missouri, Mobot scientists (including the author) used over 65,000 digitized herbarium specimens to examine broad regional changes in the flora over the past century and found an increase in non-native plant species over this period (Austin et al. 2025). This study showed that specimens in herbaria can provide insights into broad patterns of change over space and time that would be difficult to measure with other methods.

8. Testing ecological theory using functional traits

Plant specimens provide excellent source material for studying "functional traits", or the features of plants that have strong mechanistic links to their ecological behavior. For instance, most plant species can be characterized as part of the "fast to slow" spectrum of growth, wherein fast-growing species tend to have larger and thinner leaves and tend not to live as long and produce smaller seeds. On the slow-growing end of the spectrum, plants make thicker leaves, live longer, and tend to produce fewer and larger seeds. Because so many important features of plants' growth can be linked in this type of framework, scientists can infer much about ecological processes, simply by measuring things like leaf sizes, or stem lengths. This illustrates the importance of herbarium digitization! When pictures of specimens are archived online, it allows scientists to use image analysis software to study plants all over the world without needing to see physical material.

9. Ethnobotany

Scientists at Mobot's William L. Brown Center study ethnobotany, or the interaction of people and cultures with plants. Herbaria are massive and largely untapped repositories for biocultural data, such as notes on plant uses, traditional ecological knowledge, or vernacular names (Hart et al. 2025).

10. Species de-extinction!?

While we are far from conducting Jurassic-Park-style resurrections of long-lost plant species, research suggests that it is possible. Some plant species have extraordinarily long-lived seeds, capable of germinating even after thousands of years (Sallon et al. 2008). Even older seeds which cannot germinate may contain some living tissues, which can be propagated into mature plants through careful cell-culture methods (Yashina et al. 2012). An international working group recently documented examples of species that are extinct in the wild, but which are represented in herbarium collections (Rocchetti et al. 2022). Some of those vouchers from 161 different species bear individuals with fruits. It remains to be seen if seeds can be extracted from those materials and potentially tested for viability or indeed cultured into mature plants.

Unfortunately, many institutions of higher education, where herbaria have usually been found, are deciding to dispense of these invaluable biological collections. In fact, over the past 25 years, the Mobot herbarium has grown primarily not due to collection but rather serving as a "graveyard" for herbaria that were otherwise headed to the landfill. Now, especially, we need to support the herbaria that facilitate studies on the diversity and vulnerability of plants across the world.

References

Austin MW, Kaul AD, Smith AB, Rothendler M, Primack RB Herbarium specimens reveal regional patterns of tallgrass prairie invasion and changing species abundance across 130 years. New Phytologist n/a.

Austin MW, Smith AB, Olsen KM, Hoch PC, Krakos KN, Schmocker SP, Miller-Struttmann NE (2024) Climate change increases flowering duration, driving phenological reassembly and elevated co-flowering richness. New Phytologist 243:2486–2500.

Cheek M, Nic Lughadha E, Kirk P, Lindon H, Carretero J, Looney B, Douglas B, Haelewaters D, Gaya E, Llewellyn T, Ainsworth AM, Gafforov Y, Hyde K, Crous P, Hughes M, Walker BE, Campostrini Forzza R, Wong KM, Niskanen T (2020) New scientific discoveries: Plants and fungi. PLANTS, PEOPLE, PLANET 2:371–388.

Cristofolini G (2024) Origin and evolution of herbaria in the sixteenth century. Rendiconti Lincei. Scienze Fisiche e Naturali 35:63–75.

Hart R, Fonseca-Kruel V, Dalcin E, da Silva Luís Alexandre E, Pace M, Schmull M, Beltran-Rodríguez L, Murguía-Romero M, Flores-Camargo DG, Mapes-Sánchez C, Nesbitt M, Romero C, Townesmith A, Salick J, McAlvay A, Otero-Walker KR, Balick MJ, Golan J, Hoffman B, Leonard K, Mattalia G, Odonne G, Prehn A, Vandebroek I Repositories of biocultural diversity: Toward best practices for empowering ethnobotany in digital herbaria. PLANTS, PEOPLE, PLANET n/a.

Lavoie C (2013) Biological collections in an ever changing world: Herbaria as tools for biogeographical and environmental studies. Perspectives in Plant Ecology, Evolution and Systematics 15:68–76.

Missouri Botanical Garden, https://www.missouribotanicalgarden.org/plant-science/plant-science/about-science-conservation/departments-centers-of-excellence/herbarium, December 14, 2025

Rocchetti G, Carta A, Mondoni A, Godefroid S, Davis CC, Caneva G, Albrecht MA, Alvarado K, Bijmoer R, Borosova R, Bräuchler C, Breman E, Briggs M, Buord S, Cave LH, Da Silva NG, Davey AH, Davies RM, Dickie JB, Fabillo M, Fleischmann A, Franks A, Hall G, Kantvilas G, Klak C, Liu U, Medina L, Reinhammar LG, Sebola RJ, Schönberger I, Sweeney P, Voglmayr H, White A, Wieringa JJ, Zippel E, Abeli T (2022) Selecting the best candidates for resurrecting extinct-in-the-wild plants from herbaria. Nature Plants 8:1385–1393.

Sallon S, Solowey E, Cohen Y, Korchinsky R, Egli M, Woodhatch I, Simchoni O, Kislev M (2008) Germination, Genetics, and Growth of an Ancient Date Seed. Science 320:1464–1464.

Thiers, B [continuously updated]. Index Herbariorum: A global directory of public herbaria and associated staff. New York Botanical Garden's Virtual Herbarium. http://sweet-gum.nybg.org/science/ih/, December 14, 2025.

Tomasi LT (1983) Projects for botanical and other gardens: A 16th-century manual. The Journal of Garden History 3:1–34.

World Flora Online, http://www.worldfloraonline.org/, December 14, 2025.

Yashina S, Gubin S, Maksimovich S, Yashina A, Gakhova E, Gilichinsky D (2012) Regeneration of whole fertile plants from 30,000-y-old fruit tissue buried in Siberian permafrost. Proceedings of the National Academy of Sciences 109:4008–4013.

Each issue, the Petal Pusher attempts to coordinate a theme for all of the articles as sort of a fun way to get information to you, the reader. This issue's theme is "Herbaria." Enjoy!

Teaching with the Herbarium

By Michelle Bowe

When I was a graduate student, my botany professor taught courses such as Plant Taxonomy in the herbarium when we weren't on field trips. Yes, it was somewhat of a dark, crowded room with piles of preserved plants stacked on the desks, tables, and chairs, and half a million specimens in the cabinets (VDB). What we students didn't do in the herbarium was actually make more herbarium specimens.

At Missouri State University, I am the Plant Taxonomy instructor and herbarium curator, but I don't usually teach my classes in the herbarium. Instead, we have a dedicated lab with a teaching collection of herbarium specimens. There are still stacks of specimens here and there, and the actual herbarium has only sixty thousand or so specimens in cabinets, but I do have my students make new specimens almost every semester.

These specimens are then either incorporated into the main Ozarks Regional Herbarium (SMS) or into the teaching collection (a subset of highly handled specimens for classroom use). We discuss the importance of herbaria and the information on herbarium labels. Labels tell us when and where a plant was collected, and the specimen itself tells us what it is and what life stage it was in when collected (e.g., flowering, fruiting, fall foliage condition, etc.). Ideally, you can look at plant labels if you need to find a particular plant species.

In addition to making specimens, we use herbarium specimens in my classes almost every day. For many labs in Plant Taxonomy and Woody Plant Identification, I set out specimens as examples of what we are covering that day, and sometimes students sketch and describe them. I also take the students on an herbarium tour to see what we have and how herbarium specimens are made and organized on a larger scale. Sometimes students (graduate and undergraduate) from various research labs (think pollination studies) also take tours. And my classes are not the only ones who use the herbarium—Dr. Kissoon-Charles uses the herbarium and plant specimens for her Aquatic Botany course—for three to four lab periods, including labs where they go to the herbarium and look for particular specimens.

We occasionally have student volunteers who are interested in herbarium work—these students learn the ropes by aiding in mounting, repairing, databasing and filing specimens. We have graduate students who make voucher specimens for their projects and/or use the herbarium to check their plant identifications. Museum Studies minors are able to use the herbarium for their internships. Currently, an undergraduate is cataloging our (very old!) fungus collection and having some specimens DNA barcoded. While I would not say that our herbarium is exactly bustling with activity (although sporadically it is), I would say that herbaria and their specimens play an important role in science education, and that we are thankful for those who established herbaria and contributed to them before us.

Save the Dates!

2026 MONPS Field Trip Weekends

Dates and locations for our 2026 field trips are set. Details and lodging information will be published in the Petal Pusher and on our website, monps.org, as we get closer to the dates. So stay tuned for updates! Field trip weekends include botany walks on Friday afternoon, Saturday morning, Saturday afternoon, and Sunday morning; a Friday evening speaker; and a Saturday evening dinner and MONPS Board Meeting. You're welcome to attend any or all of the scheduled events, no registration required.

April 17-19: For the Spring trip, we'll visit sites in the Farmington area. Two of the places we plan to botanize are St Joe State Park and Washington State Park.

June 19-21: Summer is the season for prairies! This Summer we'll be headquartered in Sedalia, with several prairies to choose from. Potential sites for our botany walks include Missouri Prairie Foundation's Lori Marker, Friendly, Drovers', and Morton Family Prairies and Missouri Department of Conservation's Hi Lonesome and Paintbrush Prairies.

September 25-27: For our Fall trip we'll lodge in Rolla. Some spots we may botanize are Paddy Creek Recreation Area, Clifty Creek Natural Area, Kaintuck Hollow, Spring Creek Gap Conservation Area, and King Sink

Establishing an Herbarium Collection

Story and photos by Pam Barnabee, Paradoxa Chapter President

In the Spring of 2017, the MDC Naturalist at Marguerite Bray Conservation Area in Rolla asked for our help with a new and unique project: establishing an herbarium of native plants from the Conservation Area. So what exactly is an herbarium? It's a collection of preserved plants stored, catalogued and arranged systematically for long-term study; an herbarium is an important reference for plant identification. The purpose of having such a collection at Bray would be to help visitors identify plants and also to establish a verifiable list of native plants to be found there.

The tools we would need had already been provided by MDC: plant press with cardboard ventilators and blotting paper for pressing and drying the collected plants, archival (acid-free) paper for mounting the dried specimens, and an herbarium cabinet for storage.

How would we begin? We asked professional botanist Justin Thomas for advice. He showed us how to arrange our freshly cut plant specimens on newspaper and then sandwich with blotting paper and cardboard before strapping them down in the press to dry. The dried specimens would then need to be permanently affixed to stiff mounting paper, using only archival materials - ordinary, watered-down, Elmer's glue! He told us there's no standard format for the data that's catalogued with each specimen, but at a minimum it must include scientific and common names, collection date and location, collector(s) name(s), and collection number. Wait…what? Collection number? He explained that plant collectors keep a field notebook to record all the above information plus details of the plant's appearance, habitat, other plants growing nearby, and any other important details. Each specimen in the herbarium is labeled with the collector's name and a unique number that corresponds to an entry in that collector's field notebook. These additional details help to verify species identification and can be vital to anyone using the herbarium for research.

Our instruction on establishing an herbarium continued in September 2017, when Rex Hill gave our group a tour of the herbarium at Missouri Botanical Garden. We visited the "stacks" where the specimens are kept in a cool environment. It was interesting to see how they were stored in open files by genus…stack upon stack upon stack. From the stacks, Rex took us to the room where the specimens are mounted. Here we met with Anna Spencer, who has been working at the herbarium for many years. She showed us how she mounts the specimens, and let us in on a few of her secrets. Another tip we learned from our visit was to store our specimens in a freezer after laying them out on newspaper, to kill any hitchhiking insects.

Paradoxa members record *Coreopsis tripteris* details

Work on the project continued at Bray, two Thursday mornings a month, from May 2017 through October 2021. During blooming season we collected, identified, and pressed plants. In winter, we glued the specimens and their labels onto mounting paper, and sorted them by family, genus, and species for storage. When we realized we were no longer finding species that were new to our collection, we decided the project was done.

The Naturalist position at Bray has since been eliminated and the herbarium specimens are tucked away in a sealed, airtight cabinet in the Bray house, inaccessible to the public. However one of our members, Helen Johnston, was inspired to create a catalog of the 332 plants we collected, using photos taken by herself and others and her own drawings. The catalog can be found on the website of Meramec Hills Chapter of the Missouri Master Naturalist Program, at the Outreach/Education link.

MONPS Awards Presentation

Two of Missouri Native Plant Society's highest awards were presented to very deserving recipients at the Missouri Botanical Symposium on November 7.

Julian Steyermark Award

The Julian Steyermark Award, given to an individual/s who has/have made outstanding contributions to any and all aspects of Missouri botany, was awarded to Dana and Justin Thomas. Dana and Justin Thomas have been tireless leaders in numerous aspects of the state's flora, especially teaching plant identification, ecology, and conservation for 20 years.

Dana is President and Co-founder of NatureCITE (Center for Integrated Taxonomy and Ecology). She has over twenty years of botanical and ecological field, lab, teaching, and administrative experience. She has conducted botanical and ecological field work for The Nature Conservancy, National Park Service, Missouri Department of Conservation and University of Missouri. Dana served as Vice President of MONPS for four years and as President for two years.

Justin is Science Director and Co-Founder of NatureCITE and conducts taxonomic and ecological research. Along with Dana, he has taught plant identification workshops for over twenty years. He also has over twenty years of professional field experience and is recognized as one of the top ecologists in the state. Justin is perhaps the top field botanist in Missouri and has published numerous manuscripts in peer-reviewed journals. He is a co-author with Doug Ladd (2015) on the Ecological Checklist of the Missouri Flora for Floristic Quality Assessment. He holds a research associateship at Missouri Botanical Garden and serves as a scientific advisor to several conservation groups.

Lifetime Achievement Award

The Lifetime Achievement Award recognizes an individual's innumerable contributions to our knowledge of the flora of Missouri, years of dedicated service, commitment, and interest in the preservation and conservation of our state's rich botanical heritage. The recipient is Doug Ladd.

Doug's contributions to our knowledge of Missouri's flora is immense. He is the former Director of Science for the Nature Conservancy where he worked for 38 years. He is perhaps the top field botanist in the state; the author of numerous scientific articles; author of *North Woods Wildflowers* and *Tallgrass Prairie Wildflowers*, and co-author of *Discover Natural Missouri and Distribution of Illinois Vascular Plants*. He is a co-author with Justin Thomas (2015) on the Ecological Checklist of the Missouri Flora for Floristic Quality Assessment.

He is the leading authority on Missouri's lichens and has described species and genera new to science. For over forty years he has been involved in prairie, woodland, and glade ecology, management, and restoration. He is a leader in understanding the ecological benefits of sound fire ecology and management. He has developed assessment and ecological monitoring protocols for terrestrial vegetation; has been a leader in conservation and ecoregional conservation planning, and is an expert on the history of Missouri's natural communities.

Doug serves on the board of the Conservation Research Institute in Chicago, as well as the advisory boards of the Harris World Ecology Center and Shaw Nature Reserve, is an adjunct faculty member at Washington University, and is a research associate at the Missouri Botanical Garden and the Morton Arboretum in Chicago, Illinois.

For over thirty years, he has worked tirelessly as editor of *Missouriensis,* the Society's peer-reviewed scientific journal. He is a teacher at the University of Missouri-St. Louis, within the Sam Fox School of Design and Visual Arts. He is a renowned speaker and lecturer.

Nominations Due May 15 for 2026 MONPS Awards

The MONPS Awards Committee seeks nominations of people who have supported the preservation of Missouri's flora. MONPS offers five awards:

1) Erna Eisendrath Memorial Education Award, recognizing individuals who, through teaching, writing, or other activity have conveyed to others a significant appreciation and knowledge of Missouri's native flora.

2) Arthur Christ Research Award, recognizing an individual's significant contribution in furthering the knowledge of Missouri flora.

3) Plant Stewardship Award, recognizing an individual or organization for the preservation of important elements of Missouri's flora through purchase, registry, and/or management practice.

4) The John E. Wylie Award, recognizing individuals who have provided exceptional service to the Society.

5) Plant Conservation Award, recognizing an individual or organization for outstanding contributions to the conservation or preservation of native plants or plant communities in Missouri. This award differs from the Plant Stewardship Award in that it is not tied to direct acquisition or management of tracts of land, but instead may recognize various types of outstanding achievements or efforts, such as conservation planning, advocacy, or new ways of looking at old problems.

6) Julian A. Steyermark Award, given to an individual who has made outstanding contributions to any and all aspects of Missouri botany.

7) Lifetime Achievement Award, recognizing innumerable contributions to our knowledge of the flora of Missouri, years of dedicated service, commitment, and interest in the preservation and conservation of our state's rich botanical heritage.

The deadline for nominations is May 15. Nominations should contain the full name of the nominee and the name of the person making the nomination, and they should set forth the contributions of the individual or organization that merits recognition. Award recipients need not be members of MONPS.

Please submit nominations to Awards Committee Chairwoman, Michelle Bowe.

Michelle Bowe
901 S. National
Springfield, MO 65897
mbowe@MissouriState.edu

Seeking Donations for the Stan Hudson Research Grant

Could you help us support students who are conducting botanical research in Missouri? The Stan Hudson Research Grant is available to assist with funding for research projects conducted by college or university students under the supervision of a faculty member. The grant honors the late H. Stanton Hudson (1921–2002), a long-time member of the Missouri Native Plant Society whose passion for the flora of Missouri and its conservation inspired his friends and family to create a small grants program in his memory. The grant is usually given annually.

To qualify for the Stan Hudson Research Grant, research must involve Missouri native plants in some way, but may have as its primary focus any pertinent subject area in plant biology, including conservation, ecology, physiology, systematics and evolution, etc. The grant may be used for any non-salary expenses relating to the proposed research, including travel, equipment, and supplies. At the conclusion of the project, grant recipients will be expected to prepare research results for publication in a peer-reviewed scientific journal, *Missouriensis* (the peer-reviewed journal of the Missouri Native Plant Society), or the society's newsletter *The Petal Pusher*. Alternatively, recipients can present their research at the Missouri Botanical Symposium as either a poster or oral presentation. The symposium is held each fall in Rolla, Missouri. To learn more about the grant, check out this link to the **Missouri Native Plants website-Hudson Fund.**

Click here to make a donation to the Hudson Fund
Any amount is appreciated!

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 and webapps.monps.org

OR: You may simply need to update your email address with us. If so, click this link: https://monativeplants.org/ask-a-question/

From the Editor

Thank you to our Assistant Editor, Pam Barnabee for getting everything in good shape before it came to me. Thanks also to our Board members who proofread each issue and all authors, chapter representatives, and other contributors. Please consider making a submission for a future Petal Pusher! Here is some information for submissions:

A. The theme for the March 2026 Petal Pusher is "Plant ID 101" but other submissions are encouraged, especially Genus or Family descriptions ("Better know a genus/family"), Conundrum Corner, Invasive Tip of the Month, Name Change of the Month, Terminology, 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) Images, in JPEG format--NOT in a document file.

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: February 20

Thank you so much,
Michelle Bowe

Do You Have a Plant Story?

Learn more about Missouri native plants at the newest feature on the MONPS website (**MONPS.org**): Plant Stories. Do you have a favorite Missouri native plant? A photo you're particularly proud of? Please submit your story to **pamela.barnabee@gmail.com** for posting.

We Welcome Member Submissions!

The Petal Pusher wants YOU … to write articles for the newsletter.

Consider these possibilities:

-Conundrum Corner: Tips on how to distinguish between tricky, look-alike species.

-Invasive Tip of the Month: How to identify and eradicate a particular invasive species.

-What's Cooking: Recipes using native Missouri plants.

-Name Change of the Month: Latin names, they keep on a-changin'; help us all stay up-to-date.

-Poetry Corner or Quotation Corner: Give us your suggestions for poems or quotes, or submit your original poetry. (Note that for poems, we must have permission from the publisher.)

Shop Online for Embroidered MONPS Logo Apparel

A new feature has been added to the MONPS website: from the "MONPS Logo Apparel" link on the menu bar of our home page (MONPS.org), you'll be able to access our online store. Short-sleeved and long-sleeved t-shirts, sweatshirts, and ball caps with embroidered MONPS logos are available in five colors. There's also a booney hat with embroidered logo, in dark brown. The tote bag has a direct-to-garment print of our logo. Our vendor, Fast Yowi, is located in Columbia, so you can pick up your order there if it's convenient, or have it shipped.

Chapter Reports and Events

PARADOXA

by Edie Starbuck, Secretary, and Pam Barnabee, President

Paradoxa Chapter met on November 22 in the house at Marguerite Bray Conservation Area for their annual exchange of seeds and more. Nancy G. told us about the .2 acre wildflower meadow she's creating on her property in Pulaski County. Members shared book recommendations, among them *Mosses of Missouri Through a Hand Lens* by Lori Hetrick-Volenberg, *The Invention of Nature: Alexander von Humboldt's New World* by Andrea Wulf, *The Light Eaters: How the Unseen World of Plant Intelligence Offers a New Understanding of Life on Earth* by Zoë Schlanger, and *Brave the Wild River: The Untold Story of Two Women Who Mapped the Botany of the Grand Canyon* by Melissa L. Sevigny.

Before breaking for the seed exchange, there was some discussion about seed germination techniques, including suggestions for using fine, sandy soil. Pam Barnabee had brought the Prairie Moon Seed Germination Guide for reference. Judith D. told us about Gray's sedge (*Carex grayi*), a particularly pretty sedge that forms clumps and has large distinctive spikes. Judith brought seeds of this sedge to share. Pam, Judith, Linda F. and Edie S. all brought seeds to share; a large variety were available.

A list of potential activities was included on the agenda. Pam suggested a moss walk in the early spring. Lane Spring was suggested as a location. We will look into doing a tour of seed preparation facilities at Missouri Wildflower Nursery. Our local NRCS agent gave us the names of two Crawford County landowners who would be happy to give a tour of their managed properties. Other suggestions by meeting attendees were: Triangle Prairie (privately owned), south of Rolla; workshop given by Nathan Aaron, possibly graminoids; a return to the Imes's property in the summer, when the plants we saw this fall will be in bloom; Clifty Creek Conservation Area; spring ephemerals at Kaintuck Hollow or Lane Spring; Fort Leonard Wood (ask Natural Resources Division for potential sites); and White River Trace Conservation Area. Chapter officers will meet in January to plan the 2026 schedule.

ST LOUIS

by Len Meier, Chapter Representative

Planning for 2026 St. Louis Chapter Activities

A small group of St. Louis Chapter members met December 17, to begin planning 2026 meetings and outings. The first meeting will be an opportunity for members and interested parties to share their interests and desires for the Chapter and develop plans for 2026. Len Meier will send details of the initial meeting to the St. Louis Chapter membership in December 2025 or early January 2026.

Search for new Chapter Leadership

The St. Louis Chapter is looking for a new President and Vice-President. Any members interested in serving are invited to contact me, Len Meier, at 636-795-0804 or by email at lxmeier.meier@gmail.com.

Monday Botany Hikes

The St. Louis Chapter, in conjunction with the Webster Groves Nature Study Society, conducts botany focused hikes on most Mondays. The hikes are generally led by the esteemed educator and story teller, John Oliver. On any given Monday, there may be between 6 and 20 attendees, occasionally more. We occasionally do 1- or 2-day weekend hikes, and hope to do more frequent weekend outings in 2026. We hike year-round. There are always herbs, mosses, ferns, vines or trees to identify and talk about, and sometimes the insects they support are also identified. Below is a selection of the hikes this past quarter:

•On Monday November 10, walkers met at Tower Grove Park to enjoy the stately old trees and late season vegetation.

•On Monday November 17, walkers visited Don Robinson State Park, where they hiked a portion of the Sandstone Canyon trail.

•On Monday, November 24, walkers visited the Missouri Botanical Garden to view the blooming Eastern Witch Hazel and other plants in their winter garb.

•On Monday December 8, hikers visited Klondike Park, 4600 Hwy 94 South, Augusta, Missouri. The lake loop trail is passable in all except icy conditions. It winds through clumps of deciduous and evergreen trees, shrubs, and drought tolerant herbaceous plants. We observed both our native and oriental bittersweet, and various other vines along the trail, along with the lovely berries of eastern red cedar.

•On Monday, December 15, 2025, hikers met at the whispering pines trailhead at Hawn State Park. Hikers found all five of Missouri's native birch family members, along with several species of evergreen ferns, farkleberry, and other interesting plants.

Open Invitation

If you are ever planning on being in the St. Louis area on a Monday, feel free to contact any of our chapter members, or reach out to me, Len Meier, at 636-795-0804, or email me at lxmeier.meier@gmail.com and I will let you know what our plans are. Hiking sites are usually chosen by the Saturday before the Monday hike.

Missouri Native Plant Society Membership Form

Name	
Address	
City, State, ZIP	
Phone	
Email	

Membership Type (circle one): New Member Renewing Member

Membership Period (circle one): *1 2 3 4 5 year(s)*

Membership Level (check one):

	Student	$5
	Goldenrod	$10
	Sunflower	$25
	Bluebell	$50
	Blazing Star	$100

Chapter dues (optional, check all that apply):

	Hawthorn (Columbia)	$5
	Kansas City	$5
	Osage Plains (Clinton)	$5
	Paradoxa (Rolla)	$5
	Perennis (Cape Girardeau)	$5
	Saint Louis	$5
	Southwest (Springfield)	$5

Newsletter Delivery (normal delivery is via email):

	Check here if you prefer to receive your newsletters via postal mail!	$10

Other contributions (optional, check all that apply, specify amount, tax deductible):

	Hudson Grant Fund	
	Other contributions	

Total:

Total amount	$

Make checks payable to the *Missouri Native Plant Society* and mail to:
Missouri Native Plant Society
P.O. Box 1121
O'Fallon, MO 63366

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Please recycle!

RETURN SERVICE REQUESTED

"It is good to realize that if love and peace can prevail on Earth, and if we can teach our children to honor nature's gifts, the joys and beauties of the outdoors will be here forever."
-Jimmy Carter