

P E T A L P U S H E R

September-October 2021 Newsletter of the Missouri Native Plant Society Volume 36 No.5

“... to promote the enjoyment, preservation, conservation, restoration, and study of the flora native to Missouri.”

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2021 MONPS Fall Field Trip – Eminence, Missouri and vicinity

Join us September 24-26 for our final field trip of 2021! We will be visiting a virgin pine stand owned by the L-A-D Foundation in Shannon County, beautiful Alley Spring Natural Area, Mill Mountain Shut-in, and wrap up our weekend with a hike along Lick Log Hollow Trail. Our Friday evening speaker will be Mr. Dan Drees, Fire Ecologist for the National Park Service. All gatherings will be held outdoors and local ordinances for masks and social distancing must be followed.

Check the MONPS website - monativeplants.org - for lodging information, geolocations, directions, and maps.

Friday, September 24 at 1:30 p.m.: Virgin Pine Stand

We will visit a forest owned by the L-A-D Foundation and currently managed by Pioneer Forest, LLC. The area features one of the few remaining shortleaf pine stands that was spared from logging to maintain the scenic beauty of Highway 19. This is also the place where the last endangered red cockaded woodpecker was observed in Missouri in June of 1946. As one of Missouri's oldest pineries (a natural, old-growth pine forest), it provides the unique opportunity to observe the natural history of our state's great forests.

Friday, September 24, 7:00 - 8:00 p.m.: Evening Speaker, Alley Spring Pavilion: Mr. Dan Drees, Fire Ecologist for the National Park Service, will talk about the success of restoring glades, woodlands, and fens in the Current River watershed (and he has the pictures to prove it!)



Alley Spring. Photo by Susan Farrington

Saturday, September 25 at 9:00 a.m.: Alley Spring Natural Area

Home of Alley Spring, Missouri's seventh largest natural spring, this natural area will provide several points of interest for our trip. We will meet at the parking lot of Alley Mill, set at the base of a scenic limestone bluff. This mill was built in the late 1800s and utilizes the perennial flow of the spring that averages 81 million gallons of water per day. Our walk will take us through seeps, limestone outcroppings, and stands of old-growth white oak and short-leaf pine trees. According to the MDC website for the area, "A wide spectrum of Ozark natural communities typical of the Current River Hills region can be explored from springs and associated mesic upland forests to cherty dry woodlands and dolomite glades. Visitors can see plants such as wild hydrangea and walking fern near the spring and then ascend the hill to see shortleaf pine and low bush blueberry on dry cherty slopes."

Saturday Afternoon Trip 2:00 – 4:00 p.m.: Mill Mountain Shut-In and Fen

From the MDC webpage: "Mill Mountain is a rugged igneous knob formed of rhyolite that rises 400 feet above Rocky Creek at its base. The natural area contains igneous glades and associated dry woodlands and cliffs on steep, rocky northwest facing slopes. A talus slope of rhyolite boulders and cobbles is found on the south facing slopes of Mill Mountain below a large glade complex... Rocky Creek passes through a scenic shut-in at the base of Mill Mountain here. Shut-ins occur where a broader stream is "shut in" to a narrow canyon-like valley."

Board Meeting at 7:00 p.m. at Alley Spring Pavilion

Sunday, September 26 at 9:00 a.m.: Angeline Conservation Area, Lick Log Hollow Trail

Lick Log Hollow Trail is a one-mile hike through an oak-pine forest and features a fen, a shut-in, and a dolomite glade. Located within the Angeline Conservation Area, spanning nearly 40,000 acres, Lick Log Hollow serves as an interpretive nature trail with a wooden bridge, benches, and signs.

Photos of Mill Mountain Fen are shown below, courtesy of Susan Farrington. Featured in the photos are Riddell's goldenrod, New England aster, and blue lobelia.



Bladderworts

by John R. White, reprinted from the Hawthorn Chapter newsletter

- Four species of native carnivorous plants in Missouri
- In genus *Utricularia*, bladderwort family (Lentibulariaceae)
- Habitat: aquatic or terrestrial in water saturated soil (emergent aquatic)
- Food: small aquatic animals or protozoa and rotifers in saturated soil
- 1/460 of a second trapping mechanism

How many people know that Missouri has native carnivorous plants? Growing up with a farm background in a small western Missouri town I then thought of them as tropical plants found in the South American jungles and in movies about man eating plants. It has been written that Charles Darwin was fascinated with carnivorous plants, particularly the Venus flytrap.

Carnivorous plants have a diversity of trapping anatomy suitable for a particular ecosystem and prey, along with the ability to survive in nutrient poor, slightly acidic water. Most have at least a few photosynthetic leaves, bracts or shoots which keeps them alive if prey becomes scarce. Many reproduce both sexually and asexually. They are indeed remarkable and intriguing plants.

Bladderworts are Missouri's only carnivorous plants. *The Flora of Missouri* catalog (George Yatskievych, June 2011) lists only three species in Missouri: the small or cone-spur bladderwort (*Utricularia gibba*), common bladderwort (*Utricularia macrorhiza* syn. *vulgaris*), both aquatics, and the terrestrial zigzag bladderwort (*Utricularia subulata*), found in water-saturated soil and documented in only four counties. [Editor's note: The updated *Flora of Missouri*, Vol. 3, issued in 2013, includes a fourth species, *Utricularia minor* (lesser bladderwort) discovered in Shannon County in 2010, by Justin Thomas.]

Bladderworts are strange plants, all carnivorous, and eat small aquatic animals, or if terrestrial, protozoa and rotifers swimming in water-saturated soil. The main part of a bladderwort plant lies beneath the surface of its substrate. Some terrestrial species may produce photosynthetic leaf shoots which lie flat against the surface of the soil. In all species only the flowering stems

rise above the substrate and are more easily observed during flowering. These plants have no roots and the stems (stolons) may be six feet long with finely divided, feathery leaves about an inch long, and can form large floating mats. Scattered on the leaves are the tiny bladders used to trap small aquatic insects. The "leaves" are actually small photosynthetic branches and the bladders are modified leaves.

In summer both common and small bladderworts bear many yellow snapdragon-like flowers above the water on upright 4-6 inch stems and are insect pollinated. They flower from May to September. Reproduction occurs by winged seeds on upright stems and asexually by turions (winter buds) formed at the tips of upright stems.

The unusual aspect of these plants are the little bladder traps, less than a quarter-inch long, shaped like flattened pears. On the end of the bladder is a transparent trap door surrounded by a funnel of long, branched trigger hairs. The door is hinged on the top edge and is made watertight when closed by a double lock and sticky mucilage. Star-shaped glands on the inner walls pump water out forming a vacuum inside the bladder. The trap is now set. Sugar is secreted as bait. The slightest touch of a hair by any aquatic animal will cause the seal to be broken, the trap door opens, and the vacuum pulls water and the prey inside. This action happens in 1/460 of a second, faster than a Venus flytrap. The door closes, water is again pumped out, and the little animal is assimilated by digestive juices. If there is no capture the door resets in 20 minutes. This mechanism is purely a mechanical process. These plants catch tiny crustaceans, aquatic insects and worms, algae, duckweeds, mosquito larvae, newly hatched tadpoles and fish fry.



Closeup of bladders and stolons underwater. A pine needle (brown "log") in the water gives a sense of scale. Courtesy Carolyn Fannon, Lady Bird Johnson Wildflower Center

Utricularia gibba has been identified as a specialist invasive species in countries where it has been introduced, such as northern New Zealand, where it threatens to compete with native bladderworts and sundews.

[Editor's note: *Utricularia* is one of three genera of bladderworts, and the only genus found in Missouri. Worldwide, the genus contains about 244 species. *U. gibba* populations in Missouri are scattered, mostly south of the Missouri River, most commonly in the Ozark Highlands. *U. subulata* is uncommon and reported thus far only from Morgan, Reynolds, Ripley, and Shannon counties. *U. macrorhiza* syn. *vulgaris* populations are scattered and sporadic, mostly south of the Missouri River.]

References

- Bicknese, Nina. Bladderwort: Missouri's Only Carnivorous Plant. *Missouri Conservationist*. 1989.
- ISSG Database. *Ecology of Utricularia gibba*. 28 Nov 2006.
- Whitley, James R., Barbara Bassett, Joe G. Dillard, Rebecca A. Haefner. Bladderworts. Pp 122-125 in *Water Plants for Missouri Ponds*. Missouri Department of Conservation. 1999.
- Wikipedia. *Utricularia*. 4 Jan 2012.



Utricularia gibba (cone-spur bladderwort) flower. Courtesy Alan Cressler, Lady Bird Johnson Wildflower Center

Miscellaneous Award Updates!

*In the last issue, we announced that Jeff Cantrell had received the MONPS 2021 Plant Stewardship award, and now we have a picture (see below)!



Nominator Cyndi Cogbill presents MONPS' 2021 Plant Stewardship Award to recipient Jeff Cantrell.

*We wanted to announce that our very own Susan Farrington (of Eminence, MO) received the 2021 Grow Native! Native Plant Protector Award from the Missouri Prairie Foundation.

Here is the [Link to the Missouri Prairie Foundation Awards article](#)



Photo by Kathie Brennan

From the editor

Thank you for bearing with us during these continued unprecedented times. You might note that this issue is on the thin side, so I highly encourage everyone to send in blurbs for next time with pictures and even just short texts! No submission is too small!

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.

Again, please consider making a submission for a future Petal Pusher! Here is some information for submissions:

A. The theme for the next issue is "Focus on a Plant Family" Other submissions are also welcome!! Especially Conundrum Corner, 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) 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: October 20

Thank you so much,
Michelle Bowe



In this era of Covid-19, sometimes you just need to get away from everyone. Shown here: Bull Creek in late July, 2021; avoiding the Delta variant. Photo by Michelle Bowe

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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/>

Hawthorn Chapter Mosey to Sedalia Prairies

by Michelle Pruitt (with contributions from other Chapter members)

Sunday 15 August had a break in the brutally hot weather, so five of our chapter members had a great mosey to Missouri Prairie Foundation's (MPF) Friendly Prairie and Goodnight-Henry Prairie. They met at Friendly Prairie south of Sedalia and a bit west of Highway 65.



Friendly prairie. Photo by KA

Two things stood out at Friendly Prairie, both of which probably reflect that this is a prairie that was not plowed. One, stands of sumac over elevated mima mounds of dirt - large clumps that have been there for a long time. Then, we found a very healthy population of insects and butterflies.



Swale at Goodnight-Henry Prairie, Photo by EB.

We ate lunch in the parking area and shared thoughts on what we had seen so far, then caravanned to Goodnight-Henry Prairie at the crossroads of Coffey Road and State Highway U. There was no signage but vegetation was obvious.



Ludwigia alternifolia flower (left) and fruit (right).

At Goodnight-Henry, there was a swale with a bit of running water. We didn't expect to find wet spots in the prairie; the immediate difference in species community there was striking. We found a plant in this wetter habitat, among many others that differed from the upland communities, that was described as 'cubes-on-a-stick' because the dried ovaries are absolutely cubical and dry on a hard, woody stem. It was finally remembered as the genus *Ludwigia* and has since been narrowed to *L. alternifolia*, which can be found in most sunny wetlands in the eastern half of the continent.



Asclepias hirtella, Photo by EB.

Hawthorn Mosey, continued



Rudbeckia subtomentosa, *Liatris pycnostachya* and *Andropogon gerardii*, Photo by EB.

We spotted many numbers of large-flowered gaura - *Gaura biennis*, tall green milkweed - *Asclepias hirtella*, three different *Desmodium*, blue vervain - *Verbena hastata*, drifts of rosinweed - *Silphium integrifolium* mixed with ashy sunflower - *Helianthus mollis*, which we studied to see different field characters. Much big bluestem *Andropogon gerardii* grew along the fire line. Some of the fauna we did not see but heard, several Henslow's sparrows and katydids, and glimpsed a few prairie cicadas, monarchs, swallowtails, skippers, and great spangled fritillary butterflies.



Left: *Euphorbia corollata*, Photo by KA. Right: Prairie cicada, Photo by EB



Verbena hastata, Photo by EB.



Left: Garden spider; right: hawkmoth on *Vernonia arkansana*. Photos by EB.

Both of these prairies are postage stamps of the millions of square miles of prairie that met settlers 300 years ago. These are the remnants MPF protects: <https://moprairie.org/where-we-work/>

CHAPTER REPORTS and EVENTS

SAINT LOUIS

Lynette Baker, Chapter Representative

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

On July 22, we returned to John and Elaine Edgar's reconstructed prairie, about ten miles south of Rolla, to experience the blazing star (*Liatris pycnostachya*) at peak bloom. It did not disappoint. There are also two sandstone glades on the property, and we walked out to the one where reconstruction has begun. Thank you to the Edgars for their hospitality and their stewardship.

Our August walk-about was held at Audubon Trails Nature Center on the evening of August 24. A game of "botanical bingo" prompted us to closely observe the plants that we saw, looking for features such as "pubescent stems" and "flowers in panicles".

Upcoming Paradoxa Events

Tuesday, September 28, 6:00-7:30 p.m.: Meet at St. James Park for a walk-about through the dolomite glade.

Saturday, October 23, 10:00 a.m. to noon: Paradoxa's Annual Seed, Plant & Idea Exchange will be held once again at Bray Conservation Area, Rolla. If you have seeds or plants to share, please bring them. Help us plan for 2022 activities! Walk-about will follow if the weather permits.



Blazing star and friends at the Edgars' prairie.. Photo by Pam Barnabee



Pistillate spikelets of eastern gama grass at Audubon Trails, one of the plants that would check off the "monoecious" square for botanical bingo. Photo by Pam Barnabee

HAWTHORN

Michelle Pruitt, Chapter Representative

14 June The Hawthorn regular business meeting began with a presentation about Monarchs and Milkweeds given by Kimberly-Ann.

18 July Hawthorn members spread mulch at our “Adopt-a-Spot” in Columbia.

9 August The Hawthorn regular business meeting started with a presentation by Erin Skornia on how to draw the showy yellow Missouri coneflower. Erin has worked as a botanist and botanical illustrator and has been a volunteer with the Runge Conservation Nature Center for eight years. Passionate about soil health, she is currently a Lab Assistant at the University of Missouri Soil Health Assessment Center. Erin obtained a Bachelor of Science in Biology from Lincoln University and a Bachelor of Fine Arts in Illustration from the Kansas City Art Institute. She has also worn the hats of medical illustrator, graphic designer and web designer.

15 August Hawthorn members visited two prairies just south of Sedalia: Missouri Prairie Foundation’s Friendly Prairie and Goodnight-Henry Prairie managed by Missouri Department of Conservation and The Nature Conservancy.

Upcoming Hawthorn Events

13 September Regularly scheduled monthly meeting

2 October Native plant sale at Chestnut Festival at University of Missouri Horticulture & Agroforestry Research Center in New Franklin.

11 October Regularly scheduled monthly meeting

See www.columbianativeplants.org for an updated posting of newsletters and activity details.

New Members!

By Ann Earley, Membership Chair

[Click here to join!](#)

Kansas City

Anna Funk, Kansas City
Amy Stock, Kansas City

Paradoxa

Kimberly Lane, Edgar Springs
Laura Carney, Waynesville

St. Louis

Hwang-Fun Lu, Manchester
Linda Roe, St. Louis
Lori Schuster, St. Louis
Dawn Weber, St. Louis
Janet Walsh, St. Louis
Virginia Johnson, Webster Groves
Doris Malone, Union
Richard Farrell, St. Louis
Kate Reilly, St. Charles

Hawthorn

Cindy Hestir, Columbia
Hwang-Fun Lu, Manchester
Jo Turner, Columbia
Stephen Savage, Columbia

Southwest

Madeline Bridgford, Joplin

Empire Prairie

Wendy Lilly, Country Club

Missouri Native Plant Society Membership Form

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Missouri Native Plant Society

PO BOX 440353
St Louis, MO 63144-4353

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RETURN SERVICE REQUESTED

President

Malissa Briggler
10297 CR 371
New Bloomfield, MO 65063

Vice President

Hilary Haley
Eagleville, MO

Secretary and Petal Pusher Assistant Editor

Pam Barnabee
34653 White Oak Rd
Plato, MO 65552

Treasurer

Bob Siemer
74 Conway Cove Drive
Chesterfield, MO 63017

Membership

Ann Earley
P.O. Box 440353
St. Louis, MO 63144-4353

Past President

Dana Thomas
1530 E Farm Rd 96
Springfield MO 65803

Board Members

Justin Thomas (2020–2023)
1530E Farm Rd 96
Springfield MO 65803

Mike Skinner (2020–2023)
167 South Peachtree
Republic, MO 65738

Bruce Schuette (2019–2022)
678 St. Route 147
Troy, MO 63379

Rick Gray (2021–2024)
6 Montauk Court
St. Louis MO 63146

Steve Buback (2021–2024)
MDC NW Regional Office
701 James McCarthy Dr
St. Joseph, MO 64507

Aaron Floden (2019-2022)
Missouri Botanical Garden
4344 Shaw Blvd.
St. Louis, MO 63110

Missouriensis Editor

Doug Ladd
Missouri Botanical Garden
4344 Shaw Blvd.
St. Louis, MO 63110

Petal Pusher Editor

Michelle Bowe
901 S. National
Springfield MO 65897
417-836-6189
mbowe@MissouriState.edu

Distribution Manager

Rex Hill
4 Grantwood Lane
St. Louis, MO 63123

Assistants: Emily Horton, and
Joan Featherston

Editorial Committee

Lisa Hooper
Jay Raveill and Tim Smith

Archives

Rex Hill
4 Grantwood Lane
St. Louis, MO 63123

Webmaster

Jerry Barnabee
34653 White Oak Rd
Plato, MO 65552
www.monativeplants.org
www.monativeplantsociety.org

Environment and Education

John Oliver (Past President)

Chapter Representatives

Empire Prairie
Steve Buback (Board Member)
701 James McCarthy Dr
St. Joseph, MO 64507
816-271-3111

Hawthorn
Michelle Pruitt
1305 Overhill Road
Columbia, MO 65203

Kansas City
Cécile Lagandré
6040 Wornall Rd., KCMO 64113

Osage Plains
Casey Burks
1080 SE 915P Rd
Deepwater, MO 64740

Ozarks
Susan Farrington,
Interim Rep.

Paradoxa
Jerry Barnabee
34653 White Oak Rd
Plato, MO 65552

Perennis
Andrew Braun
apbraun1s@gmail.com

Saint Louis
Position open
Interested?
Contact Rick Gray

Southwest
Michelle Bowe
901 S. National
Springfield MO 65897

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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