

PETAL PUSHER

May-June 2025 Newsletter of the Missouri Native Plant Society Volume 40 No.3

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

In this issue

Summer Field Trips 1

Chromosomal characterization of native *Triodanis* species 3

Nitrate-Providing Species *Azolla caroliniana* a New Resident in Lake Springfield, MO..... 8

2025 Hudson Grants Awarded..... 10

Nominations Due May 15 for 2025 MONPS Awards 12

Seeking Donations for the Stan Hudson Research Grant..... 12

From the Editor..... 13

We Welcome Member Submissions!..... 13

Shop Online for Embroidered MONPS Logo Apparel 13

New Members..... 14

Chapter Reports and Events..... 14

Summer Field Trips to Cuivre River State Park near Troy, MO (June 20-22, 2025)

Join us for a special day with author, Lorie Hetrick-Volenberg. Lorie will show us around at Graham Cave State Park where she has worked as a Natural Resource Specialist. She will have lots of great information and insight to share with us! Afterwards, we will have dinner with Lorie in Troy, MO at the HoneyBadger Grill. Following dinner, Lorie will present on her upcoming book, *Mosses of Missouri Through a Handlens*, at our Friday evening meeting at Cuivre River State Park Visitor’s Center. Don’t miss this chance to spend time with Lorie, learning more about a unique ecosystem of Missouri and the mosses that grow here!

Friday, June 20th @ 1:00pm – Graham Cave State Park

[Site Info](#) [Area Map](#)

From the website: “A walk in [Graham Cave State Park](#) is a walk through ancient history. Artifacts uncovered in Graham Cave reveal that people occupied the cave 8,000 to 10,000 years ago. To walk through the park’s 386 scenic acres, which includes the diverse Graham Cave Glades Natural Area, is to walk in the footsteps of the hunter-gatherers who lived in the area’s caves during the ancient Dalton and Archaic period.” Restrooms are located on site. Tour guide: Lorie Hetrick Volenberg



Friday @ 5:00pm – Dinner with Lorie at the HoneyBadger Grill located at 10 Oakley Plaza, Troy, MO 63379
Website: <https://honeybadgergrill.com/>

Friday @ 7:00pm – Evening Speaker, author Lorie Hetrick-Volenberg
Meeting Place: Cuivre River State Park Visitors Center

Please join us for a very special presentation from Lori Hetrick-Volenberg about her work with bryophytes, specifically mosses, of Missouri. Her upcoming book, *Mosses of Missouri Through a Hand Lens*, is on pre-sale now. More information can be found on her website: mossesofmissouri.com



Saturday, June 21st @ 9:00am – Cuivre River State Park, Lincoln Lake Trail

Cuivre River State Park: [Site Info](#) [Area Info](#) [Area Map](#)

Saturday @ 12:00 – Lunch in the parking lot meeting area for our morning field trip

Saturday @ 1:00pm – Cuivre River State Park, Pickerelweed Pond

Saturday @ 7:00pm – Annual Meeting followed by Board Meeting
Meeting Place: Cuivre River State Park Visitors Center

Sunday, June 22nd, 9:00 a.m. - Location TBD

Place to Stay:

Super8 by Wyndam Troy
28 Turnbull Trail, Troy, MO 63379
(636) 528-6888
[Website](#)

Optional Dinner Saturday Evening @ 5:00pm – Zaddock's Restaurant

Address: 7 Troy Square, Troy, MO 63379
Website: <https://www.zadocksrestaurant.com/>

Please check our website, monativeplants.org, for more details and complete directions as our trip plans are finalized

Mosses of Missouri Through a Hand Lens



Lorie Hetrick-Volenberg

*A photographic field guide to
164 species of mosses in Missouri
with illustrated keys*

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 "Hudson Fund Recipients" Enjoy!

Chromosomal characterization of native *Triodanis* species

by Leidy Laura Arias Martinez and Kaleigh White

Southern Illinois University

ABSTRACT

Chromosome number is the simplest and most accessible method of genomic organization in an organism. Plants show a high diversity of chromosome numbers, which makes it an important tool that helps not only to understand deep relationships but also to explore speciation and the hybridization process. Therefore, the characterization of chromosome number is important as a taxonomic and phylogenetic tool. *Triodanis* is a genus of morphologically cryptic plants, with several gaps in taxonomy, phylogeny, and hybridization. With the aim of realizing and fitting the chromosome number characterization of this genus, we develop a protocol for simple and economic chromosome counting in *Triodanis* using the squash methodology. Six species of *Triodanis* were mounted in the mitotic stage; relatively small chromosomes were recorded for all species. The best spread cells showed a total of 30 chromosomes for *T. perfoliata*, *T. lamprosperma*, *T. leptocarpa* and *T. holzingeri*, and 28 for *T. biflora*. An increase in the number of squashed cells and a more accurate spread allow us to get more accurate chromosome counts.

Key word: Cytogenetic characterization.

INTRODUCTION

Cytogenetic studies have been used for centuries as a primary source to describe the genomic organization of species (Mayrose & Lysak 2021). The arrangement of the genomic information in chromosomes allows a unique powerful trait; the chromosome number can be used to understand evolutionary relationships from taxonomic approaches (Guerra 2012, Mayrose & Lysak 2021). The high variation in chromosome number across land plants has been widely documented and is often used for phylogenetic inferences (Guerra, 2008). This variability has attracted the attention of biologists, leading to the documentation of chromosome numbers for thousands of plant species (Goldblatt & Lowry, 2011, Rice et al. 2015).

Chromosome number diversity across angiosperms, orders, and families is a key focus in recent cytogenetic studies on plant variability (Carta et al. 2018, Carta et al. 2020, Escudero & Wendel 2020). However, genomic reorganization is also evident within species of the same genus (Legaria Solano 2012, Mohn et al. 2023). The high variation in chromosome number observed in plants results from polyploidy and aneuploidy events, which lead to increases or alterations in chromosome numbers. Polyploidy, in particular, is recognized as a primary driver of speciation in plants, as it can create strong reproductive barriers within populations.

Triodanis Raf. (Campanulaceae) is a genus native to North America, extending from the United States to Guatemala and even parts of South America. These annual herbs are considered cryptic due to their highly similar morphological features, making species identification challenging for taxonomists. Consequently, there are differing opinions regarding the number of species within the genus (IPNI 2023, Tropicos v3.4.2 2023, Lammers 2007). Additionally, the potential hybridization between some *Triodanis* species—supported by overlapping distributions and the presence of individuals with intermediate morphological traits—further complicates species delimitation.

Given these taxonomic uncertainties, cytogenetic studies, particularly those focusing on chromosome number, offer a valuable approach to understanding species boundaries and evolutionary relationships within *Triodanis*. Previous studies have shown that closely related species or cryptic taxa can exhibit chromosomal variations that serve as key taxonomic markers (Kavalco & Pasa 2023). Investigating chromosome numbers in *Triodanis* may provide insights into its genomic evolution, potential hybridization events, and the possible role of polyploidy in its diversification. This makes the genus an excellent model for exploring cytogenetic patterns in plant speciation

and genome evolution.

METHODS

A step-by-step protocol for mitotic chromosome counting in *Triodanis* using the apical meristem and squash technique was developed (Supplementary material). The protocol was applied to individuals of *Triodanis perfoliata*, *Triodanis biflora*, *Triodanis coloradensis*, *Triodanis leptocarpa*, *Triodanis lamprosperma*, and *Triodanis holzingeri*. Each mounted slide was viewed with a Leica DM 2500 and all images were taken with a Leica DFC295.

Chromosome sizes for each species were determined by randomly picking 5 mitotic cells and using Image J software.

RESULTS AND DISCUSSION

Triodanis perfoliata

Widespread annual, erect, and often branched stem, growing to about 700 mm. Leaves sessile, ovate, or obovate with toothed margins.

A total of 158 cells in mitosis showed good chromosome visualisation for counting. Of the total cells counted, 44% had a good spread of chromosomes, recovering a total of 30 chromosomes (Fig 1F). The rest of the cells revealed different chromosome numbers, associated with several artifacts of the method, complicating the process of counting (See Variation intraspecific section below). For *Triodanis perfoliata*, two chromosome counts have been reported; the oldest reported is found in the chromosome counts data (CCDB 2025) from references of Gadella 1966, with a $2n$ number of 56; and the Index to Plant Chromosome Numbers (IPCN 2025) reported a $n=30$ chromosome counted.

Triodanis biflora

Annual, unbranched stem growing to about 510 mm tall. Native to the southeastern parts of the contiguous United States, distributed from the east coast south of Texas and north to Iowa (Morin 2020), and also present as far south as Mexico, Central America, and parts of South America.

A total of 37 cells in mitosis were accurately counted for these chromosomes. Of the total number of cells counted, 31.6% had a total of 24 chromosomes, and 21.1% had 28 chromosomes. However, the best-distributed cells had a total of 28 chromosomes (Fig 1A).

There are no reference studies that have recovered the number of chromosomes in this species.

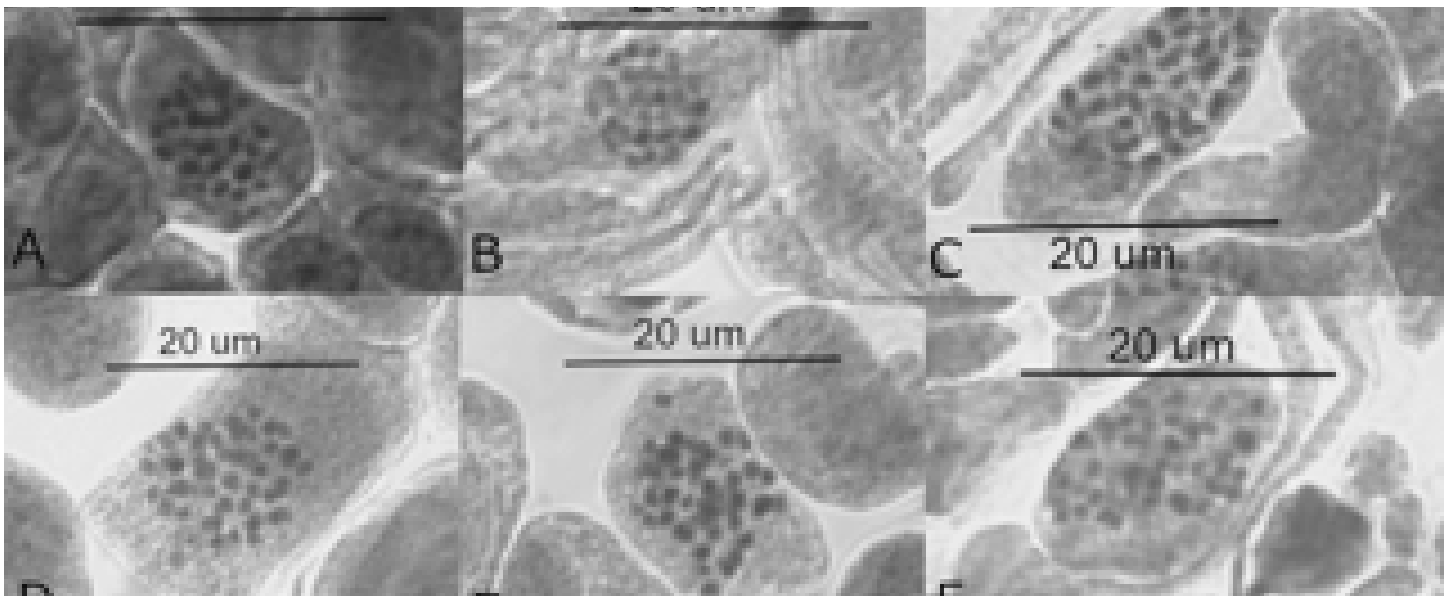


Figure 1. Best chromosome spread for each *Triodanis* species. A. *Triodanis biflora*, B. *Triodanis coloradensis*, C. *Triodanis holzingeri*, D. *Triodanis leptocarpa*, E. *Triodanis lamprosperma*, F. *Triodanis perfoliata*

Triodanis coloradensis

Annual, typically unbranched stem, 147-643 mm long. It differs from other *Triodanis* in that its leaves are sessile and linear to elliptic with pubescence on the adaxial side. It is endemic to Texas and has been recorded historically (McVaugh 1945). It is found on dry hillsides, bluffs, rock outcrops, forests, gravel bars, limestone ledges, and floodplains.

Most individuals were growing in poor conditions; only 2 individuals were collected and used for mounting slides. A total of 3 mitotic cells with 22, 17, and 20 chromosomes were counted (Fig 1B).

There are no reference studies that have recovered the number of chromosomes in this species.

Triodanis holzingeri

Annual, erect, typically unbranched, but occasionally branched stem, growing to about 680 mm tall. Leaves sessile and ovate to obovate with toothed margins. It grows mainly on sandy open prairies and plains in the central to southern United States, such as Texas, Oklahoma, and Arkansas.

A total of 50 mitotic cells were counted. Of these cells, 66.0% contained 30 chromosomes (Fig 1C).

There are no reference studies that have recovered the number of chromosomes in this species.

Triodanis leptocarpa

Erect, unbranched stem, growing to about 610 mm tall. Leaves sessile and linear, lanceolate. It is found mainly in rocky limestone outcrops or sandy soil prairies throughout the central United States from Texas north to Montana and Wyoming.

A total of 11 mitotic cells were counted, 66% of which had 30 chromosomes (Fig 1D).

There are no reference studies that have recovered the number of chromosomes in this species.

Triodanis lamprosperma

Typically a single erect, unbranched stem, growing to about 610 mm tall. Leaves sessile and linear. Widespread in rocky limestone outcrops or sandy soil prairies throughout the central United States from Texas north to Montana and Wyoming.

A total of 56 mitotic cells were counted, 42.9% with 30 chromosomes (Fig 1E).

There are no reference studies that have recovered the number of chromosomes in this species.

Variation intraspecific

Our results show that the different numbers of chromosomes within each of the *Triodanis* species are explained by different mounting artifacts. The overcounting of chromosomes is explained by the separation of sister chromatids (Figure 2A). These segregated sister chromatids were identified by being less condensed than chromosomes, less stained than chromosomes, and smaller than chromosomes. These artifacts may be caused by prolonged exposure of the sample to mitotic killer reagents.

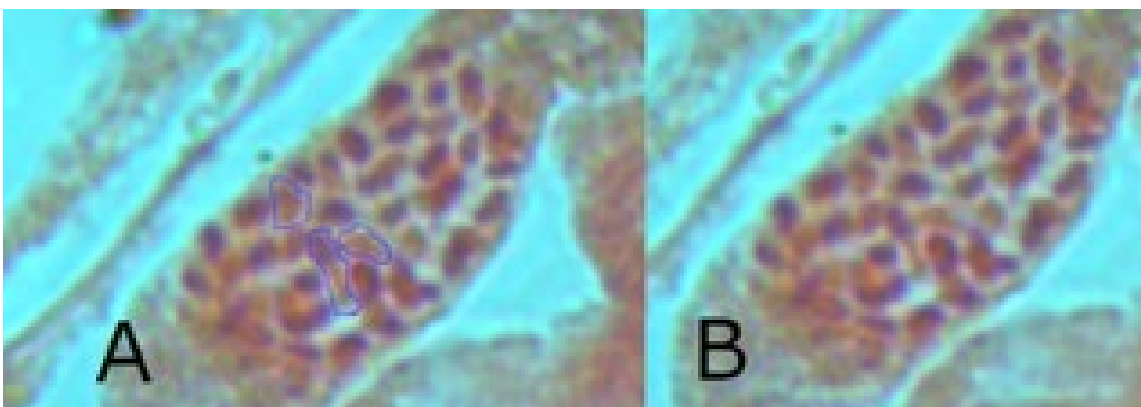


Figure 2. A. Mitotic cell showing separated chromatids in blue circles. B. The same mitotic cell mounted.

Other artifacts of the squash method were evident throughout this research. One of the most common was the lack of chromosome spreading. This was evident by the accumulation of chromosomes in the cells and circle formations, which made it impossible to identify each chromosome (Figure 3A).

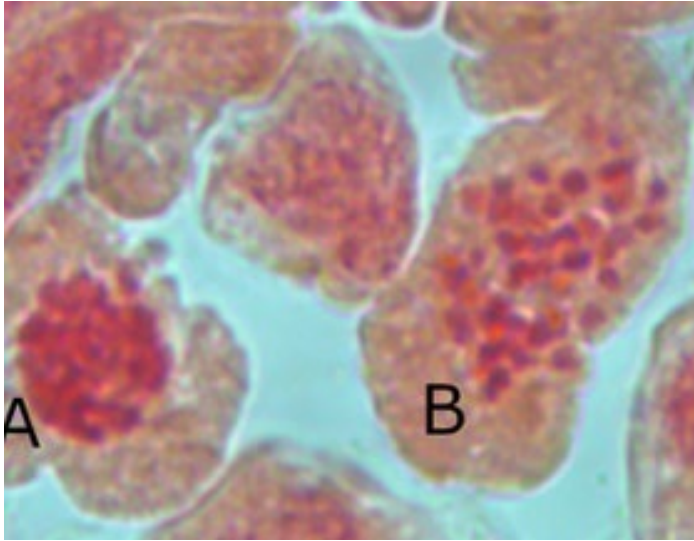


Figure 3. Differences in chromosomes spread. A. No segregation of chromosomes. B. Spread chromosomes.

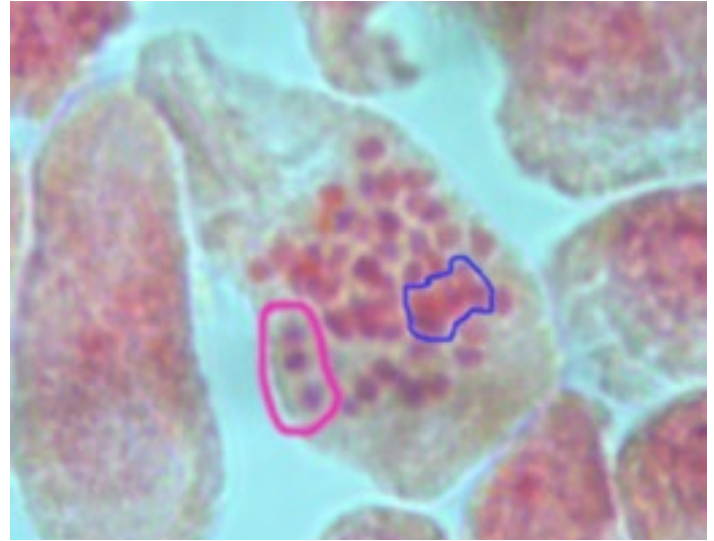


Figure 4. A mitotic cell with well-distributed chromosomes in the pink circle and overlapping chromosomes in the blue circle. An example of the difficulties of counting.

The most common artifact in the methodology was the poor spread of chromosomes, such as overlapping chromosomes or too close to a chromosome in the same cell (Fig. 4, blue circle).

Chromosome size

Similar chromosome sizes were found for all *Triodanis* species. Mean values fluctuate from 0.84 (μm) in *T. pefoliata* and *T. lamprosperma* to 1.22 in *T. leptocarpa* (Table 1).

Table 1. Mean of chromosome size for *Triodanis* species.

Species	Mean (μm)	STDV
TP	0.84	0.05
TLa	0.84	0.16
TL	1.22	0.08
TB	1.05	0.10
TH	1.13	0.08
TC	0.87	0.12

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Supplemental Methods

- 1) Grow *Triodanis* until they get apical meristems. In greenhouse conditions, 6 weeks from seed germination is enough to start the collecting process. Too small seedlings make the collecting process difficult, but too large plants tend to have more primordial leaves, so the terminal leaves grow like roses, making the collecting process difficult.
- 2) Use delicate tweezers to collect apical meristems (left). Use the tweezers to remove or open primordial and surrounding leaves to gain better access to the apical bud.

Nitrate-Providing Species *Azolla caroliniana* a New Resident in Lake Springfield, MO

by Anna Faust and La Toya Kissoon-Charles

If you visit a wetland in autumn, you may find the surface of the water dotted with floating, fuzzy, green mats beginning to blush a deep maroon like nearby maple trees. Upon a closer look at these mats, you will find that they are composed of thousands of tiny, intricate ferns known as *Azolla* (sp.). The underside of each small leaf of these tiny ferns contains chambers where symbiotic, nitrogen-fixing cyanobacteria known as *Anabaena azollae* dwell. *Anabaena* provides *Azolla* with usable nitrogen by converting atmospheric nitrogen to nitrate while enjoying the safe, protected haven of the leaf chamber (Riemer 1984). The fixed nitrogen provided to *Azolla* by this relationship is a massive advantage to the plant, allowing it to quickly proliferate and form the large mats that you encounter.



A patch of *Azolla caroliniana* growing along the shore line of Lake Springfield, MO in November 2024.

This symbiotic relationship is so powerful that in several Asian countries, *Azolla* is used as a nitrogen biofertilizer. Farmers amend soils with *Azolla* and plant *Azolla* in rice fields where they release stored nitrogen upon death (Sood et al. 2012). However, in natural systems where *Azolla* is weedy or invasive, *Azolla* mats can have serious consequences for native wildlife. In addition to crowding out other native floating aquatic plants, *Azolla* mats alter the aquatic habitat below them by blocking sunlight and gas exchange (Pinero-Rodríguez et al. 2021). These dark, low-oxygen conditions decrease submerged native aquatic plants, alter the zooplankton species composition, and stunt the growth of tadpoles (Pinero-Rodríguez et al. 2021). The nitrogen released to the surrounding water after *Azolla* dies promotes algal blooms.

Two species of *Azolla*, *A. microphylla* and *A. caroliniana*, are native to Missouri and have been found near Kansas City, St. Louis, and the bootheel region (USDA, NRCS 2025). In fall 2020, members of our research group found



An area of Lake Springfield dominated by duckweeds and water willow in June 2024 (1) and this same area dominated by *Azolla caroliniana* in November 2024 (2).

Azolla growing near the northern shore of Lake Springfield, MO, a new sighting in Missouri. We collected plant samples and started a live collection in the greenhouse, where the plants have since flourished. After a bizarre absence throughout 2021, *Azolla* reappeared in fall 2022, this time in the southwestern part of the lake. *Azolla* has since expanded throughout the shoreline of Lake Springfield, peaking in abundance in November 2024 before going dormant in December. Based on our observations, it seems that *Azolla* flourishes during the gentle, pleasant autumns of Springfield, during which temperatures are too cold for other floating competitors.



A red patch of *Azolla caroliniana* growing along the shoreline of a pond adjacent to Lake Springfield in December 2024.

In our search for possible entry points of *Azolla* into Lake Springfield, we discovered a shallow, secluded pond adjacent to Lake Springfield. In December 2024, we observed a deep maroon population of *Azolla* covering large areas of the pond's surface while it had mostly died back in Lake Springfield. While the pond is separated from the lake by a steep cliff that is likely unsurpassable during floods, we believe it may be possible for waterfowl to spread the plant from this spot to the lake.

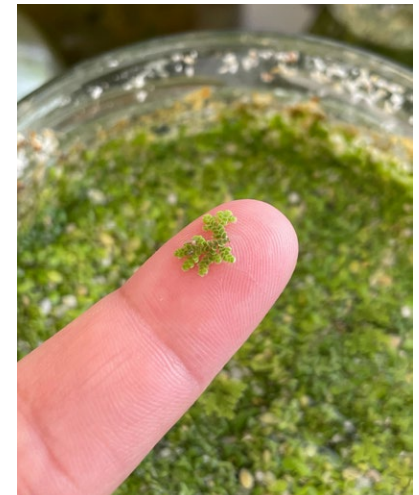
Because *Azolla* can only be physically identified by sporocarps (which are rarely produced), we had to determine if the species is native or invasive by DNA barcoding. With the generous support of the Missouri Native Plant Society, we were able to send off plant samples from our greenhouse collection and the lake population to a commercial genetics laboratory. We recently received the barcoding results; the *Azolla* species that has persisted in Lake Springfield since 2020 is *Azolla caroliniana*, which is native to Missouri and has been previously documented near St. Louis and in the bootheel region (USDA, NRCS 2025).

We have also used the Stan Hudson funds to purchase supplies for continued monitoring of the lake and a greenhouse experiment to determine *Azolla*'s impact on water nutrients in both natural and controlled settings. Currently, we plan to continue seasonal monitoring of the lake to observe the long-term impacts and life cycle of *Azolla* in Lake Springfield. Likewise, we hope to expand our monitoring area to account for all potential populations of *Azolla* in the lake. Through our first greenhouse trials, we observed that *Azolla* prefers high concentrations of nitrates in water and thus may accumulate this nitrate as well as fixed nitrates in its biomass, which it will release upon death.

Thanks to the Stan Hudson fund, we have been able to learn so much about this fascinating species and its impact on Lake Springfield. We hope that the results of continued monitoring can be used by managers of Lake Springfield and elucidate the ecological impacts of *Azolla*.

References

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Several fronds of *Azolla caroliniana* on a fingertip for size reference.



Anabaena azollae at 100x magnification. These were inside an *Azolla caroliniana* leaf.

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2025 Hudson Grants Awarded

Stan Hudson Research Grants, awarded annually by MONPS, assist college and university students with funding for research projects relating to Missouri native plants. The grant program honors the late H. Stanton Hudson (1921-2002). This year, two students have been selected to receive awards:

Jordan Murray is a master's student at Missouri State University. Her research project will investigate the phytoremediation potential of giant cane (*Arundinaria*



gigantea) on lead-contaminated soils. Phytoremediation involves using plants to absorb and/or break down contaminants in the soil and water. Phytoremediation is cost-effective, requires little maintenance, does not result in any secondary pollution, and provides other ecological benefits like soil stabilization and habitat for animals. To be a good candidate for phytoremediation, a plant species should have high growth rates, high biomass accumulation, tolerance to contaminants, adaptability to environmental conditions, and be easy to cultivate and harvest. Giant cane is a species of temperate bamboo native to Missouri and 21 other states. It has dense rhizome networks and rapidly accumulates biomass, growing up to 8 meters in a single year. In this study Jordan will evaluate giant cane's potential for phytoremediation by quantifying how effective it is at removing and sequestering lead from the soil and determining if giant cane sequesters lead primarily in its roots, pole, or leaves. She will also measure the physiological response of the plants to determine the level of lead tolerance.

Jordan received her bachelor's degree in wildlife biology from Missouri State University where she did research on freshwater mussels. She has lived in southwest Missouri her whole life and spends a lot of time enjoying all the beautiful natural areas around her. "Ecological restoration and habitat conservation are really important to me, so the potential for my current research to do some good for the environment is very exciting to me."

Elizabeth Martin is a senior biomedical sciences major at Missouri Southern State University. Her future plan is to attend medical school to eventually be able to help rural communities with access to medical care. "I have always loved plants and even started the MSSU Plant Club on my school's campus which has played a part in starting the MSSU campus garden."

Currently, the planet is undergoing a reduction in biodiversity, due to a variety of factors. Elizabeth's research will address the need for monitoring plant populations by developing a pollen database for native plants of southwest Missouri as a reference collection. Pollen collection is a relatively easy way to passively sample and monitor plant populations. Pollen grains have unique morphological features that can be used



to identify the plants from which they originated. One way that pollen can be collected is via pollen traps attached to honeybee hives. The first phase of Elizabeth's research was the collection and identification of flowers from 85 unique species of plants, collected between June and October of 2024. The next phase will include the mounting and staining of pollen grains, followed by imagery collections, with projected completion in April 2025. Ideally, the first round of collections will be supplemented with an additional round, focused on early spring flowering plants (March-May) with final project completion by July 2025. Future projects will collect pollen from campus beehives, as well as from area beekeepers, as a way to monitor plant populations and to look for unidentified populations of rare native plants.

Nominations Due May 15 for 2025 MONPS Awards

The MONPS Awards Committee seeks nominations of people who have supported the preservation of Missouri's flora. MONPS offers seven 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 \(button below\)](#).

[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 July 2025 Petal Pusher is "Seed Banking as a Conservation Tool" 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: June 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 (monativeplants.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 (monativeplants.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.



New Members

St. Louis

David Bogler, Crestwood

Hawthorn

Linda Lacy, Columbia

Southwest

Thomas Jay, Joplin

Empire Prairie

Cathy Whitney-Vuchetich, St. Joseph

Chapter Reports and Events

HAWTHORN

by **Cindy Squire, Chapter Representative**
Activities Report

12 March - Moss Mosey at Gans Creek Wild Area. Many folks attended. A big thanks to Louise for her expert guidance.

10 March - Meeting via Zoom. Elena was elected to finish State Representative term of Cindy. Congratulations Elena!

20 March - Monthly group lunch at First Watch Stadium location.

22 March - Adopt a spot work day. Spring clean out and divided plants.

26 March - Tour of Boone County Nature School led by Danielle. We had several families and had an excellent tour inside and outside.

4 April - Adopt a Spot workday. Weeded and collected trash.

12 April - Plant sale at Bradford Farms. The sales were light due to many factors.

17 April - Monthly group lunch at First Watch Stadium location.

18 April - Adopt a Spot work day. Trimmed bushes and trees.

Upcoming Chapter Events

2 May - Adopt a spot work day. Weed and remove trash.

4 May - Earth Day booth in downtown Columbia.

12 May - Meeting at AL Gustin Golf course. This is a members only event.

15 May - Monthly group lunch at Uprise Bakery in Ragtag Theatre.

17 May - Plant Sale at Bass Pro.

24 May - Adopt a spot work day. Spring clean out and divide plants.

June - Fern mosey at Clifty Creek TBA, Alspaugh Park mosey TBA.

9 June - Hawthorn Meeting, location TBA.

12 June - Plant sale at Bradford Farms

19 June - Monthly group lunch at Uprise Bakery in Ragtag Theatre.

28 June - Adopt a spot work day.

See www.columbianativeplants.org for an updated posting of newsletters and activity details. Please check your email for more detailed information and changes to above dates.

PARADOXA

by **Edie Starbuck, Chapter Secretary**

The local chapter of the Missouri Native Plant Society, the Paradoxa Chapter, had a walkabout at member Marcia Baumgartner's property near St. James on Saturday, March 23. Marcia had marked several trees and shrubs for identification, some of which she had previously identified, and some about which she was uncertain. Eight members participated in the event, iden-

tifying trees and discussing identification criteria as we walked through the spring woodland. In many cases, the trees had not leafed out or bloomed so identification was challenging, but we were able to arrive at confident identifications for almost all of the marked trees. Among the trees and shrubs on Marcia's property, we saw Eastern redbud (*Cercis canadensis*), American hazelnut (*Corylus americana*), mockernut hickory (*Carya tomentosa*), rusty blackhaw (*Viburnum rufidulum*), black cherry (*Prunus serotina*), wild plum (*Prunus americana*), sassafras (*Sassafras albidum*) and gooseberry (*Ribes* sp.). Fragrant sumac (*Rhus aromatica*) and serviceberry (*Amelanchier arborea*) were in bloom.



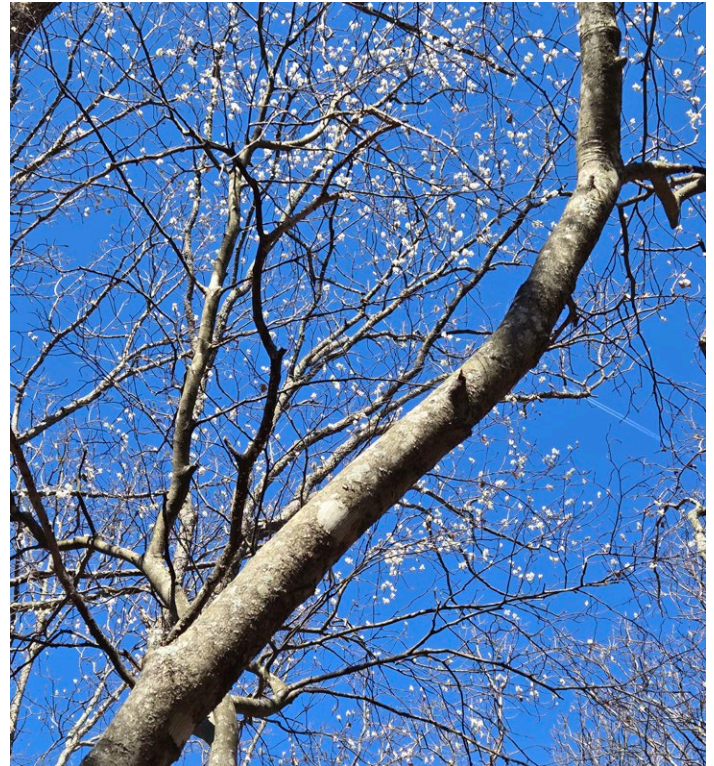
Upcoming Events

Saturday, May 17, 8:00 a.m. to 12:00 noon, Spring Native Plant Sale, JC Penney parking lot. In partnership with Meramec Hills Chapter of the Missouri Master Naturalist Program, we'll join the Rolla Saturday Farmers Market at their new location with vendors Prairie Hill Farm and Doolittle Gardens selling a wide variety of Missouri native plants. The chapter will be selling shrubs from the MDC Nursery that we potted up for resale.

Monday, May 19, 6:30-8:00 p.m., Kaintuck Hollow Walkabout. We'll park at the Natural Bridge Trailhead and walk the Orange Trail north. It's an easy walk; path is level. Rubber boots are a good idea as the area can be wet. On the way home, we can pull over to the side of Kaintuck Road to look at wildflowers on the hillside; these included wild pink, rose verbena, hoary puccoon, and ground plum when I visited but that may

change! Time permitting, we can do the same along Mill Creek Road, there's sure to be Indian paintbrush and more.

Wednesday, June 4, 6:30-8:00 p.m., Bohigian Conservation Area Walkabout. We'll meet at the Missouri S&T Ozark Research Field Station on Bohigian CA to look at wetland plants.



Serviceberry in bloom

Missouri Native Plant Society Membership Form

Name	
Address	
City, State, ZIP	
Phone	
Email	

Membership Level (check one):

	Student	\$5
	Goldenrod	\$10
	Sunflower	\$25
	Bluebell	\$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
	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
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Other contributions (optional, check all that apply, specify amount, tax deductible):

	Hudson Grant Fund	
	Other contributions	

Total:

Total amount	\$
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Make checks payable to the *Missouri Native Plant Society* and mail to:
 Missouri Native Plant Society
 PO Box 440353
 Saint Louis MO 63144-4353

Visit us on the web (monativeplants.org) and join us on Facebook!



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To contact the Missouri Native Plant Society, please **click the "Have a Question" link** on our website.

“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