

# Shaw Nature Reserve

July 1, 2024

## NOTES

**OUR SPECIAL GUESTS:** We were lucky to have 4 high-school students and their teachers join us from UMSL's "CLIMB" (Collaborative Laboratory Internship and Mentoring Blueprint) program. Rich Thoma took care of the details so everything went smoothly as it always does with him. It was fun having the students botanize with us. (They were even softly singing at one point!) We hosted a group of students last year too and hope to do so in the future. Thanks to CLIMB's director Lon Chubiz for creating this opportunity for all of us.

**WHERE WE WALKED:** The better title would be "Where *didn't* we walk?" Starting at the Trail House, we went to the glade, then got on the Wildflower Trail, then went down to the river, then went up to the outlook. We were all over the map.

**WHAT WE LEARNED:** Plenty. With our new guests listening to his every word, John was able to give us his "Greatest Hits" lessons without worrying that he was repeating himself or preaching to the choir. Those of us who depend on repetition never get tired of hearing these lessons. [Speaking of "choir", if you want to join the secular St. Louis Peace Choir, go [HERE](#).]

**PLAY-BY-PLAY:** Here are some of the highlights of the many things we learned this morning. They're presented in the order in which we learned them.

- **Missouri Ironweed** (*Vernonia missurica*): we weren't even out of the Trail House parking lot when we were drawn to this tall plant's purple flowers. Not just purple, but *electric* purple. (Later on we'll find 2 different Ironwood species.)
- **Deciduous Holly** (*Ilex decidua*): the steps from the parking lot down to the Trail House were lined on both sides with shrubs loaded with green berries. We're too early for the show, but eventually those berries (technically drupes) will turn a bright red and be a sight to see.
- **Animal Tracks:** John mentioned that the students should be on the lookout for animal tracks. Actually he was joking because the concrete pavement of the Trail House patio is "fossilized" – impressed with different kinds of animal tracks and leaves. "Dog" and "Turkey" were the 2 tracks that we identified with any confidence.
- **Illinois Bundle Flower** (*Desmanthus illinoensis*): John joked that the plant should be called "Illinois Bundle SEED" instead of "Illinois Bundle FLOWER" because it's the fascinating seed arrangement – not the flower – that puts the "Bundle" in its name.
- **Blackhaw Tree** (*Viburnum prunifolium*): Its plentiful fruits were hanging like little green teardrops. As autumn approaches they'll ripen to a blackish color and look like raisins. They'll kind of taste like raisins too, but there won't be much to eat because of the big seed inside. After admiring the Blackhaw, we made a right turn and headed towards the glade boardwalk.
- **Glade Plants:** with its thin soil and southerly/westerly exposure, only special plants can grow on a glade. The plants have to hurry-up and get their business done before summer dries them to a crisp. We saw some of these special plants from the boardwalk, including Scurfy Pea (*Pedimelum tenuiflorum*) and Purple Prairie Clover (*Dalea purpurea*) – both of which are very conservative C8 plants.
- **Prairie King Snake:** After we left the glade, we made a right turn and headed towards the Wildflower Trail. Along the way we met a snake. Somebody who understood it, picked it up and gently passed it around. That's the great thing about botanizing with a group – there's always somebody who knows something that the others don't. Find a snake? Somebody knows what it is. Hear a bird song? Somebody knows what it is. Notice some pollinators? Somebody knows what they are.
- **Poison Ivy Lookalike #3:** ["*Leaflets three? Let them be!*"] and ["*Hairy vine? Danger sign!*"] These Poison Ivy warnings can scare people away from perfectly safe lookalike plants. The 2 most common Poison Ivy lookalikes that people like to trick each other with are **Aromatic Sumac** (*Rhus aromatica*) and **Boxelder Maple** (*Acer negundo*). But today John tricked us with a third lookalike, the rather uncommon **Wafer Ash** (*Ptelia trifoliata*). Despite its common name, this tree has nothing to do with Ash trees. True Ashes (*Fraxinus*) are in the Olive Family. Wafer Ashes (*Ptelia*) are a million miles away in the Citrus Family. Their crushed leaves have a characteristic odor. Somebody (probably Kathy or Rich) reminded us that this is the host plant for the caterpillars of the Giant Swallowtail – the largest butterfly in the country!

- Multiple Tree Trunks: As John helped us focus our attention on this or that plant, Rich Thoma would occasionally introduce our guests to a “big picture” view of the habitat. For example he pointed out that many of the trees around us had multiple trunks. He explained that long ago when this was an “old growth” forest, the trees here had single trunks – large ones. But the trees were harvested. So today, even though the land has been protected for nearly a century, it still doesn’t look the same as it once did. The things we do can have long-term consequences.
- Rattlesnake Master (*Eryngium yuccifolium*): It’s hard to believe that this oddball is in the carrot family. It looks so unfriendly with those spiny yucca-like leaves. But when you actually touch those threatening spines, they feel like rubber. It brings to mind those fake knives that stage-actors and kids in Halloween costumes use. So even though they don’t look like carrot plants, Bugs Bunny would probably approve.
- Dogbane (*Apocynum cannabinum*): Dogbane is also called “Indian Hemp”, which suggests that it’s a useful plant for cordage. [Maybe someday we can have a workshop on extracting and using its fibers.] Meanwhile, how can we tell the difference between the leaves of Dogbane and Milkweed? These milky-sap plants are in the same family. The leaves of both are basically the same shape: noticeably plain, oblong, toothless and lobe-less. However there are differences:
  - 1.) the undersides of Dogbane leaves are mostly **hairless**. (The undersides of Milkweed leaves are fuzzy.)
  - 2.) the stems of Dogbane plants are narrow and **reddish**. (The stems of Milkweed plants are stout and green.)
  - 3.) Dogbane stems tend to form **branches** on top. (The stems of Milkweeds don’t generally form branches.)
  - 4.) Dogbane follicles hang down like green-beans. (Milkweed follicles are spindle-shaped and point upward.)
- Starry Campion (*Silene stellata*): Of all our white flowers, Starry Campion flowers might be our prettiest. Even when the flowers are gone, the plant is eye-catching with its unusual 4-leaf whorls. But we can’t rely too much on those whorls for identification because there are other St. Louis plants that also have leaves in whorls of 4. It seems important to be able to tell these 5 plants apart without their flowers: \* 4-Leaved Milkweed (*Asclepias quadrifolia*) / \* Sweet Joe-Pye-Weed (*Eutrochium purpureum*) / \* Licorice Bedstraw (*Galium circaezans*) / \* Starry Campion (*Silene stellata*) / \* Culver’s Root (*Veronicastrum virginicum*) /
- Curlytop Ironweed (*Vernonia arkansana*) This was special. Even though it’s a St. Louis native, we hardly ever see this C8 plant. All Ironweeds are discoid – they have no ray florets. Their electric-purple disk florets are crowded together into a head with many phyllaries (involucral bracts) under the head. But the phyllaries of this species are linear – even threadlike. And the threads are curly! It was so easy to identify this one! We were especially lucky because the flowers we saw today had not yet opened, so the entire bud was surrounded with these curly phyllaries like a medusa head!
- Evil Tomato (*Solanum carolinense*): You heard it here first. You have to admit that the name’s a lot better than “Horse Nettle”. The plant’s not in the nettle family (not even close), and we don’t travel by horse anymore. It is indeed in the tomato family – even in the tomato genus! And although as science people we don’t generally use the word “evil”, the fact remains that this C0 plant is armed with painful prickles and the fruit is toxic. So if any plant deserves to be called “Evil Tomato”, this is it.
- Leopold Bench: We found this bench on the Wildflower Trail. John explained that this type of bench is famous. It is named after a pioneer of wildlife management, Aldo Leopold (of “*A Sand County Almanac*” fame). It’s supposed to be the easiest bench in the world to make. We’ll see. I plan to make one. It seems that you only need a few boards and a few screws. If you want to build one too, there are free design plans on the internet (such as [HERE](#)) and instructional videos on YouTube (such as [HERE](#)).
- Mayapple (*Podophyllum peltatum*): John introduced us to the word “peltate” using this plant’s leaf. It means “umbrella-like”. An umbrella will keep you safe from the PELTING hail. Mayapple is probably the best model for a peltate leaf. It really does look like an umbrella. (We often apply the word to the **Moonseed** leaf to differentiate it from the Yellow Passionflower leaf. Although functionally important, Moonseed is probably the worst model of a peltate leaf because the petiole is so very close to the edge of the leaf.) John also mentioned that Mayapple fruits (which are poisonous until they are fully ripe, at which time they are gold-colored, soft, and sweet) are only produced on 2-leaved plants, not on single-leaved plants.
- Dwarf Crested Iris (*Iris cristata*): St. Louis only has 5 irises (list [HERE](#)). This is not one of them. However they are native to some Missouri counties south of us and have been given a high [conservation value](#) of C8. We found a very large area covered with these irises, but we were more than a month too late for the flowers.
- Green Dragon (*Arisaema dracontium*): This monocot is in the same arum family and even in the same genus as Jack-in-the-Pulpit. It’s a one-leaf plant composed of several divisions or leaflets. Looking down at the plant, the rachis to which the leaflets are attached forms a “C” shape, or an incomplete circle (like a Maidenhair Fern). John has observed that the age of the plant seems to be correlated to the number of leaflets.

- Smilax (*Smilax tamnoides*): With those dense, black, needle-like prickles sticking out of its stem, you sure won't be smilin' if you walk through some *Smilax* vines with shorts on! By the way, the plants are monocots and in the same Liliales order as the trilliums, lilies, bellworts, and bunchflowers.
- Giants and Zebras: Earlier when we were observing a Wafer Ash tree, we talked about it being the host for the Giant Swallowtail Butterfly. Later when we found some Pawpaw trees, we had a similar discussion about them being the host for the Zebra Swallowtail Butterfly. For those of us who want to learn our insects, this is probably a good place to start. But don't expect to see the caterpillar of a Zebra Swallowtail Butterfly. Rich Thoma (our very knowledgeable and experienced entomologist) confessed that even he has never seen one.
- Cow Parsnip (*Heracleum maximum*): Wow, this was a surprise! We hardly ever see this. The plant seems large yet juvenile at the same time. But it's not just large, it's freakishly large, it's "what-in-the-world-is-THAT?" large. It brings up memories of those Baby Huey cartoons from the 1950's (click [HERE](#) if you have 9 minutes to watch the first Baby Huey cartoon).
- Fragrant Bedstraw (*Galium triflorum*): St. Louis has 7 bedstraws (list [HERE](#)). We rarely see this one. John explained that when the leaves are dried, they exude a pleasant fragrance.
- Figwort (*Scrophularia marilandica*): The figwort we saw must have been 10ft tall! The nondescript leaves look like so many others. Fortunately our noses can secure the identification for us. Its leaves have a strong scent.
- Celandine Poppy (*Stylophorum diphyllum*): John explained that an identifying feature of poppies is their colored sap. The Bloodroot Poppy has red sap. This Celandine Poppy has yellow sap.
- White Snakeroot (*Ageratina altissima*): We found it weird that this plant was already in bloom. It showed-up to the party with its pure white flowers a couple of months too early. John told our guests the story about this plant causing "milk sickness" which killed the mother of Abraham Lincoln (among countless others).
- Monarda (*Monarda fistulosa*): Common names are supposed to make plant-talk easier, not harder. There are more than a dozen *Monarda* species in the U.S. Some have white flowers, some yellow, some scarlet, some green, and some lavender. Here in St. Louis we have 2 *Monarda*s (*Monarda bradburiana* and *Monarda fistulosa*). If you shout out "Monarda", all dozen plants will look at you. If you shout out "Beebalm" they'll all look too. But if you shout out "Oswego Tea" or "Horsemint" or "Earl Grey" or "Bergamot", it's hard to know which ones will look. Those of us not sophisticated enough to know what Earl Grey Tea is, just wish all these names would disappear. But they probably won't. So for those of us who wouldn't know a Bergamot from a flower pot, here's the story. "Bergamot" refers to an Italian citrus fruit, the Bergamot Orange (*Citrus bergamia*). The skin of this bitter orange is so pungent that its oil is used to make perfumes, to flavor tobaccos and Turkish Delight candy, and of particular interest to us, to flavor a tea called "Earl Grey Tea".
- Cliff Plants: It seems strange that a cliff would qualify as a habitat, yet there are certain plants that for whatever reason seem to thrive on cliffs. We found 2 of them rather close to each other: Purple Cliffbrake Fern (*Pellaea atropurpurea*) and Cliff Goldenrod (*Solidago drummondii*).
- Grape Vines (*Vitis* spp.): It's hard to get a good grip on this genus, so John always grounds us with a fairly reliable observation: tendrils (modified leaves) can be found at leaf nodes opposite true leaves. However the tendrils don't grow from every node. Every 3<sup>rd</sup> node is skipped. So the sequential pattern is "tendrils, tendrils, skip / tendrils, tendrils, skip". If tendrils could play chess, the knight (horse) would probably be their favorite piece.
- Pewee: we heard a bird that sang its own name!
- Native Thistle (*Cirsium discolor*): with our guest students at his side, John regaled them with one of his oldie-but-goodie mnemonics. In demonstrating that our native thistles have leaves with white undersides, he carefully held a leaf and showed them the upper side saying, "On top we have *dis* color", then turning the leaf over he continued "And on the bottom we have *dis* color." It's a classic.
- A Final Swallowtail: Near the end of our walk we found a caterpillar trying to cross the trail. But it was neither a Giant Swallowtail nor a Zebra Swallowtail. It was a Pipevine Swallowtail. So we really hit it big in the Swallowtail department today.

#### PARTICIPANTS:

In addition to the 4 students and their 2 teachers, there were 14 of us botanists today, who are (in alphabetical order): Brenda Adams, Kathy Bildner, Wayne Clark, June Jeffries, Michael Laschober, Sharon Lu, Burt Noll, John Oliver, Tina Richardson, David Steinmeyer, Kathy Thiele, Rich Thoma, George Van Brunt, and Laura Yates

SPECIES LIST

	<b>BOTANICAL NAME</b> (with genus pronunciation)	<b>FAMILY</b> [CC] = <a href="#">Coefficient of Conservatism</a>	<b>COMMON NAMES</b>
<input type="checkbox"/>	<a href="#"><i>Ageratina altissima</i></a> (AJ-jr-uh-TY-nuh)	Asteraceae (Eupatorieae tribe) [CC2]	White Snakeroot
<input type="checkbox"/>	<a href="#"><i>Amelanchier arbora</i></a> (am-uh-LAN-kee-er)	Rosaceae [CC6]	Serviceberry
<input type="checkbox"/>	<a href="#"><i>Apocynum cannabinum</i></a> (uh-POSS-i-num)	Apocynaceae [CC3]	Dogbane
<input type="checkbox"/>	<a href="#"><i>Arisaema dracontium</i></a> (ayr-eh-SEE-muh)	Araceae [CC6]	Green Dragon
<input type="checkbox"/>	<a href="#"><i>Arnoglossum reniforme</i></a> (awr-no-GLOSS-um)	Asteraceae (Senecioneae tribe) [CC8]	Great Indian Plantain
<input type="checkbox"/>	<a href="#"><i>Asclepias verticillata</i></a> (uh-SKLEE-pee-us)	Apocynaceae [CC2]	Whorled Milkweed
<input type="checkbox"/>	<a href="#"><i>Asimina triloba</i></a> (uh-SIM-in-uh)	Annonaceae [CC5]	Pawpaw
<input type="checkbox"/>	<a href="#"><i>Blephilia hirsuta</i></a> (bleh-FILL-ee-uh)	Lamiaceae (Nepetoideae subfamily) [CC7]	Hairy Pagoda Plant / Wood Mint
<input type="checkbox"/>	<a href="#"><i>Calystegia sepium</i></a> (kal-leh-STEE-jee-uh)	Convolvulaceae [CC1]	Hedge Bindweed
<input type="checkbox"/>	<a href="#"><i>Cirsium discolor</i></a> (SR-see-um)	Asteraceae (Cardueae tribe) [CC3]	Field Thistle
<input type="checkbox"/>	<a href="#"><i>Dalea purpurea</i></a> (DAY-lee-uh)	Fabaceae (Faboideae subfamily) [CC8]	Purple Prairie Clover
<input type="checkbox"/>	<a href="#"><i>Desmanthus illinoensis</i></a> (dez-MAN-thus)	Fabaceae (Caesalpinioideae subfam) [CC3]	Illinois Bundleflower
<input type="checkbox"/>	<a href="#"><i>Echinacea simulata</i></a> (ek-in-NAY-shuh)	Asteraceae (Heliantheae tribe) [CC7]	Pale Purple Coneflower (yellow pollen)
<input type="checkbox"/>	<a href="#"><i>Eryngium yuccifolium</i></a> (er-RIN-jee-um)	Apiaceae (Apioideae subfamily) [CC8]	Rattlesnake Master
<input type="checkbox"/>	<a href="#"><i>Euploca tenella</i></a> () (yoo-PLO-kuh)	Heliotropiaceae [CC8]	Pasture Heliotrope
<input type="checkbox"/>	<a href="#"><i>Galium triflorum</i></a> (GAY-lee-um)	Rubiaceae [CC4]	Fragrant Bedstraw
<input type="checkbox"/>	<a href="#"><i>Heracleum maximum</i></a> () (her-RACK-lee-um)	Apiaceae [CC6]	Cow Parsnip
<input type="checkbox"/>	<a href="#"><i>Humulus scandens</i></a> (japonicus) (HYOO-muh-luss)	Cannabaceae [intro]	Japanese Hops
<input type="checkbox"/>	<a href="#"><i>Hydrastis canadensis</i></a> (hy-DRASS-tiss)	Ranunculaceae [CC6]	Ranunculaceae
<input type="checkbox"/>	<a href="#"><i>Hylodesmum glutinosum</i></a> (hy-lo-DEZZ-mum)	Fabaceae (Faboideae subfamily) [CC3]	Pointed-Leaf Tick Trefoil
<input type="checkbox"/>	<a href="#"><i>Hylodesmum nudiflorum</i></a> (hy-lo-DEZZ-mum)	Fabaceae (Faboideae subfamily) [CC4]	Naked-Flower Tick Trefoil
<input type="checkbox"/>	<a href="#"><i>Hypericum sphaerocarpum</i></a> (hy-PAYR-i-kum)	Hypericaceae [CC5]	Round-Fruited St. John's Wort
<input type="checkbox"/>	<a href="#"><i>Ilex decidua</i></a> (EYE-lex)	Aquifoliaceae [CC5]	Possumhaw / Deciduous Holly
<input type="checkbox"/>	<a href="#"><i>Iris cristata</i></a> (EYE-riss)	Iridaceae [CC8]	Dwarf Crested Iris
<input type="checkbox"/>	<a href="#"><i>Lobelia spicata</i></a> (lo-BEE-lee-uh)	Campanulaceae [CC5]	Pale-Spike Lobelia
<input type="checkbox"/>	<a href="#"><i>Matelea decipiens</i></a> (muh-TEE-lee-uh)	Apocynaceae [CC5]	Climbing Milkweed
<input type="checkbox"/>	<a href="#"><i>Mimulus alatus</i></a> (MIMM-yoo-lus)	Phrymaceae [CC5]	Sharpwing Monkeyflower
<input type="checkbox"/>	<a href="#"><i>Pediomelum tenuiflorum</i></a> () (ped-ee-o-MEE-lum)	Fabaceae [CC8]	Scurfy Pea
<input type="checkbox"/>	<a href="#"><i>Pellaea atropurpurea</i></a> (pell-EE-uh)	Pteridaceae [CC7]	Purple Cliffbrake
<input type="checkbox"/>	<a href="#"><i>Phegopteris hexagonoptera</i></a> (fay-go-TAYR-iss)	Thelypteridaceae [CC8]	Broad Beech Fern

<input type="checkbox"/>	<a href="#"><u><i>Podophyllum peltatum</i></u></a> (po-do-FILL-um)	Berberidaceae [CC4]	Mayapple
<input type="checkbox"/>	<a href="#"><u><i>Ptelia trifoliata</i></u></a> (TEE-lee-uh)	Rutaceae [CC5]	Wafer Ash
<input type="checkbox"/>	<a href="#"><u><i>Quercus muehlenbergii</i></u></a> (KWERK-us)	Fagaceae [CC5]	Chinkapin Oak
<input type="checkbox"/>	<a href="#"><u><i>Rhus copallinum</i></u></a> (ROOS)	Anacardiaceae [CC2]	Winged Sumac
<input type="checkbox"/>	<a href="#"><u><i>Rhus glabra</i></u></a> (ROOS)	Anacardiaceae [CC1]	Smooth Sumac
<input type="checkbox"/>	<i>Ruellia</i> (species not recorded) (roo-ELL-ee-uh)	Acanthaceae [CC]	Wild Petunia
<input type="checkbox"/>	<a href="#"><u><i>Sabatia angularis</i></u></a> () (suh-BAY-tee-uh)	Gentianaceae [CC4]	Rosepink / Rose Gentian
<input type="checkbox"/>	<a href="#"><u><i>Sambucus canadensis</i></u></a> (sam-BOO-kuss)	Adoxaceae [CC2]	Black Elderberry
<input type="checkbox"/>	<a href="#"><u><i>Sanicula canadensis</i></u></a> (suh-NICK-yoo-luh)	Apiaceae [CC3]	Black Snakeroot
<input type="checkbox"/>	<a href="#"><u><i>Scrophularia marilandica</i></u></a> (skro-foo-LAYR-ee-uh)	Scrophulariaceae [CC3]	Figwort
<input type="checkbox"/>	<a href="#"><u><i>Scutellaria incana</i></u></a> (skoo-teh-LAYR-ee-uh)	Lamiaceae (Scutellarioideae subfamily) [CC5]	Downy Skullcap
<input type="checkbox"/>	<a href="#"><u><i>Sideroxylon lanuginosum</i></u></a> (SY-dr-o-ZY-lun)	Sapotaceae [CC5]	Gum Bumelia
<input type="checkbox"/>	<a href="#"><u><i>Silene stellata</i></u></a> (sy-LEE-nee)	Caryophyllaceae [CC5]	Starry Champion
<input type="checkbox"/>	<a href="#"><u><i>Silphium integrifolium</i></u></a> (SILL-fee-um)	Asteraceae (Heliantheae tribe) [CC4]	Rosinweed
<input type="checkbox"/>	<a href="#"><u><i>Smilax ecirrata</i></u></a> (SMY-lax)	Smilacaceae [CC5]	Upright Carrion-Flower
<input type="checkbox"/>	<a href="#"><u><i>Smilax tamnoides</i></u></a> ( <i>S. hispida</i> ) (SMY-lax)	Smilacaceae [CC3]	Bristly Greenbrier
<input type="checkbox"/>	<a href="#"><u><i>Solanum carolinense</i></u></a> (so-LAY-num)	Solanaceae [CC0]	Carolina Horsenettle / Evil Tomato
<input type="checkbox"/>	<a href="#"><u><i>Solidago drummondii</i></u></a> (so-lid-DAY-go)	Asteraceae (Asteraeae tribe) [CC8]	Cliff Goldenrod
<input type="checkbox"/>	<a href="#"><u><i>Stylophorum diphylum</i></u></a> (sty-LOFF-or-um)	Papaveraceae [CC7]	Celandine Poppy
<input type="checkbox"/>	<a href="#"><u><i>Verbesina helianthoides</i></u></a> (vr-beh-SEE-nuh)	Asteraceae (Heliantheae tribe) [CC5]	Yellow Crownbeard
<input type="checkbox"/>	<a href="#"><u><i>Verbesina virginica</i></u></a> (vr-beh-SEE-nuh)	Asteraceae (Heliantheae tribe) [CC5]	White Wingstem / Frostweed
<input type="checkbox"/>	<a href="#"><u><i>Vernonia arkansana</i></u></a> (vr-NO-nee-uh)	Asteraceae (Vernonieae tribe) [CC7]	Curlytop Ironweed
<input type="checkbox"/>	<a href="#"><u><i>Vernonia baldwinii</i></u></a> (vr-NO-nee-uh)	Asteraceae (Vernonieae tribe) [CC2]	Western Ironweed
<input type="checkbox"/>	<a href="#"><u><i>Vernonia missurica</i></u></a> (vr-NO-nee-uh)	Asteraceae (Vernonieae tribe) [CC5]	Missouri Ironweed
<input type="checkbox"/>	<a href="#"><u><i>Viburnum prunifolium</i></u></a> (vy-BURR-num)	Adoxaceae [CC4]	Blackhaw