Engelmann Woods Nature Area

April 15, 2024

	BOTANICAL NAME (with etymology & genus pronunciation)	**FAMILY** [CC] = Coefficient of Conservatism	**COMMON NAME** (with tips we learned)
☐	*Achillea millefolium* (= the plant used medicinally by Achilles + thousand-leaved) (ack-ill-LEE-uh)	Asteraceae (Anthemideae tribe) [CC1]	Yarrow (leaf deeply tri-pinnately lobed / smells nice too!)
☐	*Actaea pachypoda* (plant name + thick foot) (ak-TEE-uh)	Ranunculaceae [CC8]	Doll's Eyes / White Baneberry (toxic)
☐	*Antennaria parlinii* (insect antennae + somebody's name) (an-tin-AYR-ee-uh)	Asteracea (Gnaphalieae tribe) CC5	Parlin's Pussytoes (leaf: underside whitish with dense wool / has 3 or 5 veins, whereas *A.neglecta* has narrower leaves with only 1 vein / plant dioecious / the stamens of flowers on male plants stick up like insect antennae / "pussytoes" because flowers look like cat toes / habitat dry, rocky, shaded /)
☐	*Aplectrum hyemale* (without spurs + winter) (ay-PLECK-trum)	Orchidaceae [CC8]	Adam and Eve Orchid [so-called because on older plants the corm develops a second linked corm] / Putty Root Orchid [so-called because crushed corms release a sticky substance once used to mend pots] (Only has 1 leaf, but it is eye-catching with its conspicuous, parallel white strips and its large, pleated blade)
☐	*Arisaema dracontium* (plant name + dragon) (ayr-eh-SEE-muh)	Araceae [CC6]	Green Dragon (one long-petioled compound leaf with 5-15 leaflets held out horizontally along a U-shaped rachis)
☐	*Arisaema triphyllum* (plant name + 3 leaves) (ayr-eh-SEE-muh)	Araceae [CC6]	Jack-in-the-Pulpit (terminal leaflet forms a 90° angle with the other two)
☐	*Asclepias quadrifolia* (Gk god of medicine + 4 leaves) (uh-SKLEE-pee-us)	Apocynaceae [CC6]	Fourleaf Milkweed (leaves opposite, sometimes appearing as a whorl of 4)
☐	*Blephilia hirsuta* (eyelash + straight-haired) (bleh-FILL-ee-uh)	Lamiaceae (Nepetoideae subfamily) [CC7]	Hairy Pagoda Plant / Wood Mint (compared to *Blephilia ciliata*, *B.hirsuta* prefers moister and more shaded habitats, has longer leaf petioles, flowers that are mostly white instead of lavender, has a taller and more branched habit, a very minty pleasant fragrance)
☐	*Camassia scilloides* (from its Native American name + like the sea onion) (kuh-MASS-ee-uh)	Asparagaceae [CC6]	Wild Hyacinth (leaves: long, straplike, midrib raised on underside, lower half of leaf can fold longitudinally)
☐	*Carex albursina* (CARE-x)	Cyperaceae [CC9]	White-Bear Sedge (habitat: north-facing, rich, wooded, limestone slopes / its leaves are the widest of any Missouri sedge species)
☐	*Carex careyana* (CARE-ex)	Cyperaceae [CC9]	Carey's Sedge (wide leaves have reddish-purple basal sheaths, sharply-angular perigynia and achenes,)
☐	*Corallorhiza wisteriana* (coral + root + somebody's name) (kor-al-lo-RY-zuh)	Orchidaceae [CC7]	Spring Coralroot (a mycotroph that gets its nutrients from fungi)
☐	*Cystopteris protrusa* (bladder + fern) (sis-STOP-tr-riss)	Cystopteridaceae [CC5]	Lowland Bladderfern (a springtime fern that wilts away when temperatures get too high)
☐	*Dioscorea villosa* (= somebody's name + softly hairy) (dy-o-SKOR-ee-uh)	Dioscoreaceae (a monocot family) [CC5]	Wild Yam (the heart-shaped leaves of this vine are particularly attractive with their many prominent veins converging palmately in arches from base to tip)
☐	*Enemion biternatum* (= Anemone + two clusters of 3) (eh-NEE-mee-un)	Ranunculaceae [CC5]	Lowland Rue-Anemone / False Rue-Anemone (in comparison with the "True" Rue-Anemone [*Thalictrum thalictroides*], *Enemion* has 5 "petals" [actually petaloid sepals, of which *Thalictrum* often has more], it is white [instead of sometimes pink], its habitat is moist lowland [instead of drier upland], it often grows in large groups [instead of solitary or in small groups], its leaflets have longer fingerlike lobes [instead of "kitten-paw" leaflets with short lobes])

☐	*Fagus grandifolia* (beech + large leaf) (FAY-guss)	Fagaceae [CC8]	American Beech (buds: distinctively long, narrow, cigar-like / leaf has conspicuous pinnate venation, with each vein terminating at a marginal tooth / bark is "carve-your-name-on-me" smooth /
☐	*Galium circaezans* (milk + enchanting) (GAY-lee-um / SR-kuh-zanz)	Rubiaceae [CC4]	Licorice Bedstraw / Wild White Licorice [roots] / (4 leaves in whorl / the first 4 letters of "circaezans" are the same as "circus" where licorice can be found / leaves have a rather pleasant flavor, though not the same as licorice)
☐	*Geranium maculatum* (crane + spotted) (jr-RAY-nee-um)	Geraniaceae [CC5]	Wild Geranium (distinctive, palmately-lobed leaves)
☐	*Gillenia stipulata* (gill-LEE-nee-uh)	Rosaceae [CC5]	American Ipecac (distinctive, sharply-toothed leaves with gigantic stipules)
☐	*Homalosorus pycnocarpos* (flat sori + dense fruit) / synonym: *Diplazium pycnocarpon* (ho-MAL-o-SOR-us)	Diplasiopsidaceae [CC10]	Narrow-Leaved Glade Fern
☐	*Hybanthus concolor* (hump-backed flower + same color) (hy-BANN-thus)	Violaceae [CC7]	Green Violet (the rebel of the violet family)
☐	*Hydrastis canadensis* (= watery places) (hy-DRASS-tiss)	Ranunculaceae [CC6]	Goldenseal (highly textured leaves / flowers with many stamens and many apocarpous pistils)
☐	*Myosotis verna* (mouse-eared + spring) (my-o-SO-tis)	Boraginaceae [CC2]	Spring Forget-Me-Not (scorpioid inflorescences of tiny white flowers / bristly calyces)
☐	*Orobanche uniflora* (vetch-strangler + one-flowered) (or-o-BANK-ee)	Orobanchaceae [CC7]	One-Flowered Cancer Root (holoparasite / confirmed hosts include: *Ostrya, Potentilla, Quercus, Rudbeckia, Solidago, Symphyotrichum*)
☐	*Oxalis violacea* (sharp taste + violet) (oks-AL-iss)	Oxalidaceae CC5	Violet Wood-Sorrel (flowers often re-appear for an encore in the Fall without leaves)
☐	*Phacelia purshii* (fuh-SEE-lee-uh)	Boraginaceae [CC4]	Miami Mist (newly-emerging leaves have "water spots" on them, as does the closely related *Hydrophyllum* [Waterleaf] plant)
☐	*Podophyllum peltatum* (foot + leaf + peltate) (po-do-FILL-um)	Berberidaceae [CC4]	Mayapple (all parts of plant are toxic except for the ripe fruit / grows in colonies from creeping rhizomes / leaf is umbrella-like with palmate lobes / flowers develop in axil of double-leaved stems, not single-leaf stems / plants dependent on soil mycorrhizae / habitat: woodlands / bright orange spots on leaves caused by Mayapple Rust, a fungal parasite)
☐	*Polemonium reptans* (= creeping) (poe-leh-MOE-nee-um)	Polemoniaceae [CC6]	Jacob's Ladder (leaves: compound, pinnately divided / flowers: blue with white anthers on stamens / its only other St. Louis family members are the Phlox species)
☐	*Polymnia canadensis* (Greek muse of sacred music and dance) (po-LIMM-nee-uh)	Asteraceae (Polymnieae tribe) [CC6]	Whiteflower Bearsfoot / Whiteflower Leafcup (this is the one with the tacky glandular leaves that emit a pleasant but hard-to-describe fragrance, whereas the Yellowflower Bearsfoot [Smallanthus] does not)
☐	*Ranunculus fascicularis* (=little frog + fascicled, clustered in bundles) (ruh-NUN-kyoo-lus)	Ranunculaceae [CC5]	Early Buttercup (one of our large-petaled buttercups / long narrow leaflets somewhat resemble webbed bird feet, which is why it can't be its lookalike Bristly Buttercup [*Ranunculus hispida*] because birds don't have bristles.)
☐	*Stylophorum diphyllum* (style-bearing + 2 leaves) (sty-LOFF-or-um)	Papaveraceae [CC7]	Celandine Poppy (pairs of sub-opposite leaves deeply lobed or compound with the leaflets themselves lobed / large, strikingly showy yellow flowers)
☐	*Trillium flexipes* (TRILL-ee-um)	Melanthiaceae [CC8]	Drooping Trillium / White Trillium (our largest-flowered trillium)
☐	*Uvularia grandiflora* (uvula – the hanging flap in the back of the throat + large flower) (yoo-vyoo-LAYR-ee-uh)	Colchicaceae [CC6]	Largeflower Bellwort (perfoliate leaves look like they've been sewn together)
☐	*Viola palmata*) (violet + leaves palmately lobed) (vy-O-luh)	Violaceae [CC5]	Tri-Lobed Violet (young plants with unlobed leaves are hard to distinguish from the common *Viola sororia*)
☐	*Viola pubescens* (violet + hairy) (vy-O-luh)	Violaceae [CC5]	Downy Yellow Violet (unusual in producing aerial stems)

NOTES

LOCATION: John has long wanted to take us botanizing at Engelmann Woods Natural Area, but its tiny parking area made it impractical. Today we resolved that problem by meeting at a large, paved parking lot near a playground next to Lake St. Albans. From there we carpooled to Engelmann Woods – less than 2 miles away.

FLOWERS WE FOUND:
Our main purpose for visiting Engelmann was to look for spring wildflowers. We found plenty of them – especially later in our walk after we descended into a lower, moister habitat. Here are a few of the flowers which – for one reason or another – we found particularly significant:

GALIUM and its COLLETERS:
We wouldn't expect there to be anything new about bedstraws. There's certainly nothing eye-catching about their white, pinhead-sized flowers. The plants are rather commonplace and easy to find with their "look at me" whorls of leaves. We're lucky to have 8 bedstraw species in the St. Louis area (list HERE). On Monday we found 3 of them right off the bat (*G.aparine, G.concinnum, G.circaezans*). It was while we were looking at that 3rd one – *Galium circaezans* – that a new part of the world opened-up. John explained that the *Galiums* (and the Rubiaceae in general) have special glandular structures on them called "colleters" that secrete a protective substance.
What?! It's not every day that we learn about a "new" plant component that's not even mentioned in our botany texts. "Colleters" are typically tiny, hairlike structures that exude chemicals that protect vulnerable meristematic tissue, especially buds. The secreted mucilage is thought to lubricate the developing tissue, to protect it from desiccation, to promote symbiotic associations with bacteria, and to act as a chemical barrier against insects and microorganisms. Colleters can be found on stipules, petioles, leaf blade edges, bracts, petals, and sepals. Where are they found on *Galiums*? *Galiums* have stipules that look like leaves (meaning not all leaves in bedstraw's famous whorls are true leaves). The microscopic colleters can be found on these stipules.
Although colleters seem to be mostly known from plants of the Rubiaceae (Coffee family) and the toxic Loganiaceae (Indian Pink family), they can also be found on some 60 other families.
If you (like me) feel disoriented to be just now learning about an important plant structure, we can find some solace in knowing that the term "colleter" doesn't yet seem to be in wide usage (my spell-checker still flags it and google keeps asking if I mean "collector" instead). And it doesn't yet seem to have a universal, tidy definition that distinguishes it from, say, an extrafloral nectary or a resin gland. Disorienting or not, it's exciting to unexpectedly learn new things. Thank you, John, for opening this door!

CORALLORHIZA WISTERIANA and OROBANCHE UNIFLORA
Even though they're miles apart on the phylogenetic tree, these two plants somehow belong together. They were both on John's radar as we neared their common habitat. From a distance the two plants look somewhat similar. Since they're both heterotrophic with no need to collect sunlight, neither of them have leaves and neither of them have a green color. The *Corallorhiza* is a mycotroph that gets its nutrients from fungi. (In a loose sense, most plants on earth are mycotrophic with a mutualistic association.) But the *Orobanche* is a downright parasite that probably doesn't have a mutualistic xylem in its entire body. It runs in the family. Among the plants they tap into are those from the Asteraceae. James noticed a nearby *Solidago ulmifolia* that didn't look especially happy. (James also informed us that some taxonomists refer to this plant as "*Aphyllon uniflorum*" – "no leaves, one flower" a truly wonderful name. The "Plants of the World" website HERE accepts it as a synonym of *Orobanche*.) Finding the Coralroot Orchid and the One-Flowered Cancer Root together was certainly one of the highlights of our walk.

TRILLIUM FLEXIPES
Speaking of highlights, we let out an audible "WOW!" when we came upon these giant white flowers. We weren't expecting them. A few weeks ago when the weather was still wintery, we drove all the way up to Troy Missouri to see a different white trillium – the Snow Trillium (*Trillium nivale*). But those were puny compared to these magnificent "Nodding Trilliums" – the largest-flowered trillium that we have in Missouri.

TWO C9 SEDGES
As it happens, we once again got bogged-down trying to identify sedges. In the front of the line, John found a flowering *Carex caryana* (Carey's Sedge) which he explained had broad leaves with some red or purple coloration down at its base.

Sedges are monoecious. John pointed to its male spike and its female spikes to show us the difference. Meanwhile near the back of the line James and Mark were examining other sedges. But the most memorable sedge (at least to me) was the White Bear Sedge (*Carex albursina*). It had very wide leaves with substantial spikes. Kathy Bildner reminded us of Father Sullivan's observation: "Where you find White Bear Sedge, you'll find orchids."

THREE BUTTERCUPS

We found 3 Buttercups in 3 flower sizes:

1. TINY FLOWERS: The smooth, tiny-flowered Buttercup that we found was *Ranunculus abortivus*. It's lookalike is *Ranunculus micranthus*. But our *R.abortivus* has no stem hairs while "Hairy Mike" *R.micranthus* does.
2. MID-SIZED FLOWERS: The small but "at least I'm not *abortivus* or *micranthus*" Buttercup that we found was *Ranunculus harveyi* (which James said was named after his dog Harvey). It has no close St. Louis lookalikes.
3. LARGE FLOWERS: The large-flowered Buttercup we found was *Ranunculus fascicularis* (= fascicled, or clustered in bundles). Its lookalike is *Ranunculus hispida* (= bristly). We know ours is not Bristly Buttercup because some of our long, narrow leaflets resemble webbed bird feet. Birds don't have bristles.

SHORT OBSERVATIONS:

- The first (and last) distinctive plant that we stopped to admire was a large beech tree (*Fagus grandifolia*) near the parking lot. It had surely been planted because Beech trees are not native to the St. Louis Area (although as John said they can do quite well here). Its buds were the longest I've ever seen – seemingly a good 3 inches (although I didn't measure them and unintentionally tend to exaggerate). After all these years it's surprising that nobody has yet carved their name into its smooth, inviting bark. We should probably thank the tiny parking lot for that.
- Kathy Bildner (who is almost always the first to spot things) noticed a huge ant nest. She shouted back to our ant expert: "James, look at this huge ant nest!" James excitedly scampered to the front of the line where he suddenly stopped and dropped his shoulders. "You call THIS huge?" Everybody laughed. Evidently he has seen *Formica subsericea* nests that are much, much larger.
- When John found a *Borodinia laevigata* (aka *Boechera laevigata* or Smooth Rockcress) he said "Borodin was a composer. Now he's a decomposer." Everybody kind of laughed and groaned at the same time.
- Our naturalist Kathy Thiele translated the lyrics of the ever-singing Red-Eyed Vireo as: "Here I am. Where are You?"
- John noticed a bright yellow spot on a Mayapple leaf. He explained that it is caused by Mayapple Rust (*Allodus podophylli*), a common fungal parasite. Although we didn't check, the rust is reportedly worse on the underside of the leaf.

PARTICIPANTS:

There were 16 of us botanists today, who are (in alphabetical order):
Renee Benage, Kathy Bildner, Steve Bizub, Jerry Castillon, June Jeffries, Michael Laschober, Sharon Lu, Pat Lynn, Burt Noll, John Oliver, Tina Richardson, David Steinmeyer, Kathy Thiele, Deb Tolcou, Mark Tolcou, and James Trager.