Hawn State Park (Assorted Trails) May 27, 2024

We found these 7 ferns near the LaHae Spring on Bauer Rd:

BOTANICAL NAME (with <u>etymology</u> & genus pronunciation)	FAMILY [CC] = <u>Coefficient of</u> <u>Conservatism</u>	COMMON NAME (with tips we learned)
Asplenium platyneuron (without spleen [medicinal for aiding spleen] + flat veins) (uh-SPLEE-nee-um)	Aspleniaceae [CC4]	Ebony Spleenwort (cheerful little fern; fertile fronds stand upright but die off during winter; sterile fronds are evergreen and lie on ground during winter)
<u>Athyrium filix-femina</u> (bristle + fern- woman) (uh-THEER-ee-um)	Athyriaceae [CC8]	 Lady Fern <u>habit</u>: large, feathery, cespitose (fronds arise in a clump) <u>fronds</u>: deciduous, large (30" x 9"), very dissected (3-pinnate), light yellow-green <u>sori</u>: 1-6 per pinnule, located away from edges and tip, narrow ovate dots covered by whitish to brown reniform indusium. <u>stipe</u>: long, pale brown, papery scales at base <u>other</u>: usu. split into 3 species: <i>A.felix-femina</i>, <i>A.angustum</i> (Narrow Lady Fern), <i>A.asplenioides</i> (Southern Lady Fern)
<u>Botrypus virginianus</u> (cluster of grapes) (bo-TRY-pus)	Ophioglossaceae [CC4]	Rattlesnake Fern (Although it appears as a whorl of 3 leaves, the STERILE frond is just one large triangular leaf, 3 or 4 times pinnately compound, that is held parallel to the ground / the FERTILE frond is a branched cluster of "grapes" without leaf lamina.)
<u>Ophioglossum vulgatum</u> (snake + tongue + common) (O-fee-o-GLOSS-um)	Ophioglossaceae [CC7]	 Adder's Tongue This small fern looks like an arum with a spathe and spadix. It has a 2-part frond: a 3 or 4-inch shield-shaped leaf sheath a branchless, spore-bearing spike
<u>Osmunda spectabilis</u> (fern name + worth seeing) (oss-MUN-duh)	Osmundaceae [CC7]	 Royal Fern (American) <u>habit</u>: deciduous / large, imposing, shrublike, with deltoid fronds over 3ft long and over 2ft wide (like a Kentucky Coffeetree leaf) <u>fronds</u>: bipinnate with the pinnules held-on by a tiny base / sterile and fertile fronds similar, except that the tops of fertile fronds are narrow without leaf lamina and bear naked sporangia that turn brown when mature in early summer <u>sori</u>: the upper portion of fertile fronds is narrow and densely covered with bead-like sporangia (not clustered into sori or covered with indusia) / these tassel-like fertile clusters give the plant its "Flowering Fern" common name <u>stipe</u>: <u>other</u>: tolerates light better than most ferns, but requires moist soil / the Osmundaceae has an ancient lineage that is classified as neither eusporangiate nor leptosporangiate, but somewhere in the middle / <i>Osmunda regalis</i> is a non-native sibling /
<u>Polystichum acrosticoides</u> (many rows + resembling Acrostichium, the Elk-Horn Fern, which also has its sori densely packed on pinna underside) (po-LISS-tick-um)	Dryopteridaceae [CC5]	Christmas Fern (evergreen – which is how it gets its common name because it's still green at Christmas, except for those fronds that have fertile tips which dry-up and turn brown)
Woodsia obtusa (somebody's name + blunt)	Woodsiaceae [CC5]	Bluntlobe Cliff Fern

(WOOD-see-uh)	evergreen / leaves twice compound / persistent old stem bases of varying length / lobed indusia that surrounds the sori /
	sparsely to moderately hairy (both glandular and non-glandular)
	/ distinctive to the <i>Woodsia</i> genus is the enlarged pore
	[hydathode] at vein tips / similar to <i>Cystopteris</i> ferns /

George Van Brunt and Stephen Dilks reported that these 16 species were among the many observed by the botanists who walked the new "Spanish Land Grant Trail":

BOTANICAL NAME (with <u>etymology</u> & genus pronunciation)	FAMILY [CC] = <u>Coefficient of</u> <u>Conservatism</u>	COMMON NAME (with tips we learned)
<u>Achillea millefolium</u> (= the plant used medicinally by the mythic Greek Trojan War hero Achilles + thousand-leaved) (ack-ill-LEE-uh)	Asteraceae (Anthemideae tribe) [CC1]	Yarrow (leaf deeply tri-pinnately lobed / smells nice too!)
<u>Andersonglossum virginianum</u> (Anderson's tongue + Virginia) (an-dr-sun-GLOSS-um)	Boraginaceae [CC6]	Wild Comfrey / Hound's Tongue [formerly <i>Cynoglossum</i> , until they realized that the dog's name was "Anderson"] perennial, unbranched, hairy plant / basal leaves: large, entire, tapered into winged petioles / stem leaves: large, entire, sessile, clasping stem / once used for food and tea, the FDA now bans its sale because of known liver damage /
<u>Borodinia canadensis</u> (bor-o-DINN-ee-uh)	Brassicaceae [CC4]	Sicklepod Rockcress St. Louis has 4 Borodinia species. Click to compare photos: <u>Borodinia canadensis</u> <u>Borodinia dentata</u> <u>Borodinia laevigata</u> <u>Borodinia missouriensis</u>
<u>Carex crinita</u> (sedge + long-haired) (CARE-ex)	Cyperaceae [CC7]	Fringed Sedge
<u>Cirsium caroliniana</u> (thistle + Carolina) (SR-see-um)	Asteraceae (Cardueae tribe) [CC8]	Carolina Thistle (tall but more friendly than other thistles, with narrow leaves and fewer spines / involucral bracts have conspicuously white midribs and long spines / garden-worthy)
<u>Coreopsis lanceolata</u> (buglike + lance- shaped [leaf]) (kor-ee-OPP-sis)	Asteraceae (Coreopsideae tribe) [CC5]	 Lanceleaf Coreopsis / Sand Coreopsis St. Louis has 6 species of Coreopsis: [C.grandiflora, C.lanceolata, C.palmata, C.pubescens, C.tinctoria, and C.tripteris]. They all have rays with lacerated tips and translucent "ghost phyllaries" behind their main green ones. C.lanceolata is distinguished by having: only a few leaf nodes – and these are restricted to the bottom half of the plant opposite leaves that are long and narrow, sometimes with a pair of lateral lobes near the base
<u>Frangula caroliniana</u> (= brittle) (FRANG-goo-luh)	Rhamnaceae [CC6]	Carolina Buckthorn / Indian Cherry / Rhamnus thornless / leaves are smooth, simple, waxy, dark green, elliptic, toothless, entire /
Frasera carolinianus (John Fraser) (FRAY-zr-uh)	Gentianaceae [CC7]	American Columbo (monocarpic / bolting may be triggered by environmental cues 2 years prior / may exist as a basal rosette for 30 years)
<u>Hypericum gentianoides</u> (above + picture + resembling a gentian) (hy-PAYR-i-kum)	Hypericaceae [CC5]	Orangegrass / Pineweed / (annual / even with its needle-like leaves, the characteristic dark glandular dots can be seen in a row on both sides of the midvein / faint odor of citrus or peaches from crushed leaf)
<u>Krigia biflora</u> (somebody's name + 2 flowers) (KRIGG-ee-uh)	Asteraceae (Cichorieae tribe) [CC5]	 Two-Flowered Dwarf-Dandelion St. Louis has 4 Krigia species. Although they all look similar with their ligulate flowers, a combination of features may help distinguish this <i>K.biflora</i> from its siblings: life cycle: perennial size: the tallest at about 2ft

		 leaves: mostly basal, with 1 or 2 smooth, glaucous, lance-shaped leaves strongly clasping the stem halfway up the plant / heads: more of an orange than yellow color, with up to 6 heads per stalk, though rarely more than 2 blooming at the same time) habitat: often found in woods
<u>Krigia dandelion</u> () (KRIGG-ee-uh)	Asteraceae (Cichorieae tribe) [CC6]	 Potato Dwarf-Dandelion St. Louis has 4 <i>Krigia</i> species. Although they all look similar with their ligulate flowers, a combination of features may help distinguish this <i>K.dandelion</i> from its siblings (without needing to dig-it-up to check for its "potato"): life cycle: perennial size: rather tall at about 20" leaves: long, narrow, rubbery, glaucous, all in a basal rosette heads: larger than the others, with 1 flower head per stalk / other: has a small tuber ("potato") growing below its base
<u>Phemeranthus calycinus</u> (living for one day + flower + special calyx) (femm-r-ANN-thus)	Montiaceae [CC8]	Fame Flower [syn: <i>Talinum calycinum</i>] flowers: purple-pink, open around noon and typically stay open until mid-afternoon leaves: succulent, needle-like
<u>Pinus echinata</u> (= pine tree + hedgehog) (PY-nuss)	Pinaceae [CC5]	Shortleaf Pine Fascicles of 2 and 3 leaves (mixed) At 3-4", the leaves aren't exactly "short" Attractive bark with large plates Pinecones short (about 2") and armed with short prickles Sold as "Yellow Pine" for lumber Resinous wood easy to light with only 1 match Missouri's only native pine
<u>Sabulina michauxii</u> (sandy + botanist's name) / synonyms: <i>Minuartia michauxii</i> and <i>Arenaria stricta</i> (sab-yoo-LY-nuh / mish-SHOW-ee-eye)	Caryophyllaceae [CC9]	Rock Sandwort / Stiff Sandwort / (leaves: needle-like, dense lower on stem, absent higher on stem / habitat: limestone glades, rocky soils / attractive)
<u>Scutellaria parvula</u> (small dish + small [flower]) (skoo-teh-LAYR-ee-uh)	Lamiaceae / Lamiales [CC4]	 Small Skullcap St. Louis has 5 different species of Skullcap [S.elliptica, S.incana, S.lateriflora, S.ovata, and S.parvula]. They all have opposite leaves, square stems, and a "tractor seat" protuberance on the back of their calyx called a "scutellum". This Scutellaria parvula has distinguishing features: It's short (3-9" tall) It has ovate leaves with entire leaf margins It has small (1/3") blue flowers Its inflorescence is special with flowers produced individually from leaf axils [rather than in terminal or axillary racemes] It grows in shallow soils over bedrock There are 3 varieties are distinguished by differences in leaf blade venation and pubescence. var.australis var.leonardii var.parvula
<u>Tradescantia ohiensis</u> (somebody's name + Ohio) (trad-eh-SKANT-ee-uh)	Commelinaceae [CC3]	 Ohio Spiderwort St. Louis has 4 spiderworts: <i>Tradescantia bracteata, T.ohiensis, T.subaspersa,</i> and this <i>T.virginiana</i>) Ohio Spiderwort has these identifying features: narrow leaves buds and sepals that are glabrous and glaucous
<u>Verbesina helianthoides</u> (vr-beh-SEE-nuh)	Asteraceae (Heliantheae tribe) [CC5]	Yellow Crownbeard / given the " <i>helianthoides</i> " epithet, "Yellow Sunflower Wingstem" would be a more practical name /

It's great to have such an identifiable feature as winged stems – and with a wonderfully practical common name "Wingstem" to match. Unfortunately, St. Louis has 3 Wingstems [V.alternifolia, V.helianthoides, V.virginica]. How to tell them apart? Our attractive V.helianthoides can be distinguished by: SIZE: the shortest of the three (<4ft)FLOWERING: first to bloom in early summerWINGEDNESS: reliably has winged stemsLEAVES: mostly elliptic /HEADS: Yellow / terminal clusters of 1-5 heads, each with 8-15 ray florets / disk florets mostly aligned (rather than pointing in all directions)
[the genus name " <i>Verbesina</i> " is easier to remember if we consider that we have to use more VERBS to describe not just the leaf and flower, but also the special stem.]

Here are 16 more species that we talked about – mostly from the "LaMotte Sandstone Barrens Natural Area":

BOTANICAL NAME (with <u>etymology</u> & genus pronunciation)	FAMILY [CC] = <u>Coefficient of</u> <u>Conservatism</u>	COMMON NAME (with tips we learned)
<u>Anagallis arvensis</u> () (uh-NAG-uh-liss)	Primulaceae [intro]	Scarlet Pimpernel (annual / leaves: small, opposite, ovate, sessile, entire, with brown speckles on underside / flowers: small, with 5 roundish, famously scarlet petals, interspersed behind with 5 narrow, green, pointed sepals / the filaments of the stamens are bright red with dense, white, cotton-candy hair at its base, and topped with bright yellow anthers / tiny, but quite spectacular)
<u>Aristolochia serpentaria</u> (best childbirth + used for snakebites) (uh-RISS-toe-LO-kee-uh)	Aristolochiaceae [CC6]	Virginia Snakeroot (leaf: long, narrowly lanceolate, indented where the petiole joins the leaf)
<u>Cyperus echinatus</u> (SY-pr-us)	Cyperaceae [CC3]	Globe Flatsedge Believe it or not, St. Louis has 94 sedges! (list <u>HERE</u>). 61 are in the " <i>Carex</i> " genus. The remaining 33 are distributed among 10 non- <i>Carex</i> genera. This "Globe Flatsedge" is one of 10 St. Louis sedges that are in the <i>Cyperus</i> (Flatsedge) genus. These plants are usually leafless for most of their length, with slender grass-like leaves at the base, and a whorl of leaves at the top of the flowering stems.
<u>Eleocharis palustris</u> (marsh-beauty + marsh) (ell-ee-AH-kr-russ)	Cyperaceae [CC5]	Marsh Spikerush Believe it or not, St. Louis has 94 sedges! (list <u>HERE</u>). 61 are in the " <i>Carex</i> " genus. The remaining 33 are distributed among 10 non- <i>Carex</i> genera. This "Marsh Spikerush" is one of 6 St. Louis sedges that are in the <i>Eleocharis</i> (Spikerush) genus.
<u>Erigeron strigosus</u> (early old man + strigose [bristly with stiff, straight, flat- lying hairs]) (er-RIJ-er-on)	Asteraceae (Astereae tribe) [CC3]	Daisy Fleabane (St. Louis has 5 species of Erigeron (<i>E.annuus, E.canadensis, E.philadelphicus, E.pulchellus, E.strigosus</i>). Daisy Fleabane can be distinguished by: stem leaves that are NARROW)
<u>Galium pilosum</u> (milk + fine hairs) (GAY-lee-um)	Rubiaceae [CC6]	Hairy Bedstraw (whorl of 4 leaves, each with 1 prominent vein [which distinguishes it from <i>G.circaezans</i> which has 3 prominent veins] / also distinguished by its tiny maroon [rather than whitish] flowers)
<u>Krigia virginica</u> () (KRIGG-ee-uh)	Asteraceae (Cichorieae tribe) [CC3]	 Virginia Dwarf-Dandelion St. Louis has 4 <i>Krigia</i> species. Although they all look similar with their ligulate flowers, a combination of features may help distinguish this <i>K.virginica</i> from its siblings: life cycle: annual size: the shortest at about 14" leaves: small rosettes (only 6" across), with each leaf only 3" long and ¾" wide heads: each floret and fruit has 5 long pappus bristles / phyllaries: 9-18 habitat: prefers acidic soils

<u>Oenothera linifolia</u> (wine flower + linear leaves) (ee-no-THEER-uh)	Onagraceae [CC4]	 Sundrops St. Louis has plenty of confusing narrow-leaved plants with yellow flowers (such as <i>Linum striatum, Linum virginianum, Linum sulcatum, Linum medium,</i> and <i>Hypericum drummondii</i>). A couple of features that helps set our Sundrops apart from those lookalikes: Sundrop flowers only have 4 petals (instead of 5) Sundrop flowers have a conspicuous inferior ovary (like its siblings from the Evening Primrose Family) that is surprisingly far away from the corolla.
<u>Opuntia cespitosa</u> (o-POON-tee-uh)	Cactaceae [CC4]	Eastern Prickly Pear (the large white spines aren't the problem, it's the tufts of little barbed glochids that ruin the "I found a cactus!" experience.)
<u>Plantago rugelii</u> (plantain + somebody's name) (plan-TAY-go)	Plantaginaceae [CC0]	Rugel's Plantain St. Louis' most common plantain / has large, glabrous leaves with some redness at the base of its leaf petiole / instead of "Rugel" think "Rouge" or "Regal" to better remember that all- important redness / inflorescence: long spike(s) /
<u>Ruellia pedunculata</u> (somebody's name + stalked) (roo-ELL-ee-uh)	Acanthaceae [CC5]	Stalked Wild Petunia (however "real" petunias are from the Tomato/Potato Family)St. Louis only has 4 species from the Acanthus Family (list HERE), and 3 of them are from the <i>Ruellia</i> genus. They all have opposite, deep-green leaves and large, lavender, petunia- like flowers. Here are some characteristics that point to <i>R.pedunculata</i> :•long, thin sepals – almost like bristles • flowers borne on long peduncles
<u>Stylosanthes biflora</u> () (sty-lo-SAN-thees)	Fabaceae (Faboideae subfamily) [CC5]	Pencil Flower (trifoliate bean-family plant with pencil-yellow, papilionaceous flowers that resemble those of Birdsfoot Trefoil)
<u>Tephrosia virginiana</u> (ash-colored) (teff-RO-see-uh)	Fabaceae (Faboideae subfamily) [CC5]	Goat's Rue Leaf: alternate, pinnately compound with 8-15 pairs of oblong leaflets, hairy especially on their undersides / resembles Leadplant [<i>Amorpha canescens</i>], but Leadplant leaflets have rounded bases while Goat's Rue has leaflet bases that taper to their short petioles / Flower: bicolored with yellow banner petal and pink keel and wing petals /
<u>Triodanis perfoliata</u> () (try-o-DAY-niss)	Campanulaceae [CC2]	Clasping Venus's Looking-Glass (even though it's a small, common, C2 annual often pulled from the garden as a weed, it offers lessons in botany. Its little purple flowers are quite beautiful. They have 5 petals, 5 stamens, and a long white style with a 3-lobed tip. The plant also has closed, self-pollinating cleistogamous flowers. Its wide leaves strongly clasp the stem. It has milky sap. Its fruit is a capsule which has windows midway up along its side. When the windows split open, numerous seeds spill out. The location and shape of the windows are used to determine which species it is. So, they're worth examining with a hand lens.)
<u>Ulmus alata</u> (= elm + winged) (UL-muss)	Ulmaceae [CC4]	Winged Elm conspicuous wings on branches / base of leaf more symmetrical than other elms / terminal leaf is larger than lateral leaves / leaves double-serrated /
<u>Vaccinium arboreum</u> (blueberry + treelike) (vack-SINN-ee-um)	Ericaceae [CC6]	Farkleberry (of our 3 St. Louis blueberries [<i>V.arboreum</i> , <i>V.staminium</i> , and <i>V.pallidum</i>], this is the tallest and has the most OPEN leaf venation)

NOTES

WHERE WE WALKED:

At first we were excited to be among the first to test-drive the newly opened "Spanish Land Grant Trail". Then we started reading about its severe tick infestation. Walking a short distance down the trail to check it out ourselves, we could see

countless ticks at the tips of leaves eagerly pacing back and forth, just waiting to latch onto somebody. For those of us who are tick-averse, it was like being in a horror movie.

Thankfully, John changed his plans to accommodate us tickaphobes. We divided into two groups. A dozen of us went off to botanize with John in a couple of safer areas off of nearby Bauer Rd ("LaHae Spring" and "LaMotte Sandstone Barrens Natural Area"), while 3 intrepid botanists decided to stay and explore Tick City.

DAMSELFLY COLOR:

As we began exploring the LaHae Spring area, we were charmed by a large number of damselflies who joined us. (Damselflies are similar to dragonflies but are smaller and fold their wings alongside their body when at rest.) One person described them as being "green". Another person described them as being "blue". Fortunately we had our entomologist Rich Thoma with us who explained that the colors were caused by neither blue nor green pigments, but rather from light diffraction. Problem solved.

ALL GOLDENRODS SMELL LIKE CARROTS:

It's hard to identify goldenrods (and most other plants) by stem and leaf alone. John spent quite some time paging through Vol 23 of Justin Thomas' key, trying to verify his suspicion that the green plant before him was a *Solidago rugosa*. Wayne reminded us of the old saying:

"Keys are written by people who don't need them for people who don't use them."

Everybody laughed. John often mentions that "all goldenrods smell like carrots". The smell of carrots may not be as inviting as the fragrance of "buttered popcorn" (Prairie Dropseed) or "maple syrup" (Sweet Everlasting) or "Fruit-Loops cereal" (Sassafras). But it seems worth repeating here because goldenrods really are hard to identify.

SHORT OBSERVATIONS:

- The "Winged Elm" (*Ulmus alata*) trees that we found near the LaHae Spring were the largest ones we've ever seen. And they didn't have wings! It was their small leaves that gave them away.
- The St. Louis area has 4 *Krigia* species. We found 3 of them! (2 by the LaMotte group and 1 by the Tick group).
- We found 6 different ferns in the LaHae area! (They're listed separately at the top of the species lists.)

PARTICIPANTS:

There were 15 of us botanists today, who are (in alphabetical order):

Kathy Bildner, Steve Bizub, Wayne Clark, Stephen Dilks, Rick Gray, June Jeffries, Michael Laschober, Sharon Lu, Burt Noll, John Oliver, Kathy Thiele, Rich Thoma, Mark & Deb Tolcou, and George Van Brunt.