

Newman Trail

January 29, 2024

	BOTANICAL NAME (with etymology & genus pronunciation)	FAMILY [CC] = Coefficient of Conservatism	COMMON NAME (with tips we learned)
<input type="checkbox"/>	Acer negundo (Acer = maple) (AY-sr)	Sapindaceae [CC1]	Boxelder (unlike most other maples, the Boxelder is fully dioecious, so only the female trees will display samaras / the samaras often persist throughout the winter, a good identifier / unlike most other maples, the Boxelder has pinnately compound leaves with 3 to 7 leaflets which can resemble Poison Ivy /)
<input type="checkbox"/>	Acer saccharum (= sugary, also the genus name for sugar cane: <i>Saccharum officinarum</i>) (AY-sr)	Sapindaceae [CC5]	Sugar Maple (leaf: 5 lobes, the basal pair are small, but the upper 3 lobes are large with notched / compared to the Silver Maple's narrow, angular sinuses, the Sugar Maple has more open, shallow, and rounded ones / buds: John demonstrated the hardness and sharpness of its dark buds)
<input type="checkbox"/>	Aesculus glabra (a type of tree + smooth [leaf]) (ESS-kyoo-luss)	Sapindaceae [CC5]	Ohio Buckeye (early to lose its leaves, chunky twigs, terminal buds very large, sharply-pointed, opposite / broad leaf scars)
<input type="checkbox"/>	Agastache nepetoides (= very much + spike + like catnip) (uh-GAH-stuh-kee / nep-uh-TOY-deez)	Lamiaceae (Nepetoideae subfamily) [CC4]	Yellow Giant Hyssop Easy to identify with its candelabra inflorescences
<input type="checkbox"/>	Alliaria petiolata (garlic-like + having a leaf stalk) (al-lee-AYR-ee-uh)	Brassicaceae [intro]	Garlic Mustard (hard to get rid of with its self-compatible flowers and its seeds that remain viable in the soil for years)
<input type="checkbox"/>	Ampelopsis cordata (resembling a vine + heart-shaped) (am-pel-OP-sis)	Vitaceae [CC3]	Raccoon Grape / Heartleaf Peppervine (fruit cluster more spherical than the long, conic shape of grape bunches in the <i>Vitis</i> species / bark deeply furrowed / stem less dense than <i>Vitis</i> species)
<input type="checkbox"/>	Asimina triloba (native American name of tree + 3 lobes) (uh-SIM-in-uh)	Annonaceae (a Basal Angiosperm family) [CC5]	Pawpaw (the only member of the family not confined to the tropics, hence the naked "paintbrush" buds in winter / tree branches can be flat, forming a terraced, planar architecture)
<input type="checkbox"/>	Asplenium rhizophyllum (uh-SPLEE-nee-um)	Aspleniaceae [CC7]	Walking Fern (stays green in winter / long, arrow-shaped leaves root from the tips to create clones / also produces spores like other ferns)
<input type="checkbox"/>	Boehmeria cylindrica (somebody's name + cylinder-shaped) (bo-MEER-ee-uh)	Urticaceae [CC4]	False Nettle (perennial / leaves opposite with long petioles / inflorescence is a spike from the leaf axils, angled at 45°, usefully diagnostic even in winter)
<input type="checkbox"/>	Campsis radicans (bent [stamens] + rooting stems) (KAMP-sis)	Bignoniaceae [CC3]	Trumpet Vine (opposite leaves / aerial rootlets attach to tree from nodes / vine has lighter color than most other vines)
<input type="checkbox"/>	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)
<input type="checkbox"/>	Carpinus caroliniana (= hornbeam tree) (car-PY-nus)	Betulaceae [CC6]	Musclewood Tree / American Hornbeam (habitat: shaded areas with moist soils / trunk ribbed like muscles / leaf: looks corrugated with prominent veins, but the veins are usually NOT forked [in contrast to <i>Ostrya</i>] / male and female catkins appear in spring with leaves)
<input type="checkbox"/>	Carya cordiformis (nut tree + heart-shaped) (KAYR-ee-uh)	Juglandaceae [CC5]	Bitternut Hickory (has naked buds, like the pecan / St. Louis has 7 different hickory species / the hickories can be divided into 2 sections: the Bitternut and Pecan belong to one section [Apocarya] while all the others, i.e. Pignut, Shellbark, Shagbark, Black, and Mockernut belong to the other section [Carya] which has scales on its buds)
<input type="checkbox"/>	Carya ovata (nut tree + egg-shaped) (KAYR-ee-uh)	Juglandaceae [CC4]	Shagbark Hickory (usually 5 leaflets with the terminal 3 leaflets much larger than the basal pair / mature trees have shaggy bark / monoecious with long-stalked male catkins and female flowers in short terminal spikes)

<input type="checkbox"/>	<u><i>Celtis occidentalis</i></u> (tree name + western) (SELL-tiss)	Cannabaceae [CC3]	Hackberry (easy to identify from its laminated bark / on hackberry, witches broom [dense, stunted, abnormal growth from a single point] is caused by powdery mildew + a mite)
<input type="checkbox"/>	<u><i>Cystopteris bulbifera</i></u> (sis-STOP-tr-riss, [but a more etymologically meaningful pronunciation would be “sis-toe-TAYR-us”])	Cystopteridaceae [CC8]	Bulblet Fern (dried-up in winter, but during the growing season it has very long, slender, deltoid fronds with bulblets along bottom)
<input type="checkbox"/>	<u><i>Diospyros virginiana</i></u> (= divine + pear) (dee-OSS-pr-us)	Ebenaceae [CC3]	Persimmon Tree (dioecious / leaves entire / bark blocky / hard wood for golf club heads and pool cues)
<input type="checkbox"/>	<u><i>Euonymus alatus</i></u> (= good name + winged) (yoo-ONN-i-mus)	Celastraceae [intro]	Burning Bush or Winged Euonymus (at least some stems likely have corky ridges / flowers are pale / leaf undersides are glabrous / leaf petioles shorter than our native tree)
<input type="checkbox"/>	<u><i>Gymnocladus dioica</i></u> (naked branch + dioecious) (jim-no-KLAY-dus)	Fabaceae (Caesalpinioideae subfamily) [CC6]	Kentucky Coffeetree (huge double-pinnate leaves / large legumes [from female trees] and leaf rachides on ground in winter aid identification / bark ridges slightly concave)
<input type="checkbox"/>	<u><i>Hydrangea arborescens</i></u> (= water-vessel + tree) (hy-DRANN-jee-uh)	Hydrangeaceae [CC7]	Wild Hydrangea / Smooth Hydrangea (winter capsules resemble summer inflorescences / any showy flowers around the periphery of the inflorescence are sterile / the flowers without the large white petaloid sepals are fertile / toothed, ovate leaves are opposite with long petioles)
<input type="checkbox"/>	<u><i>Lindera benzoin</i></u> (person’s name + aromatic resin) (lin-DEER-uh)	Lauraceae [CC5]	Spicebush (male plants have conspicuously larger winter flower buds)
<input type="checkbox"/>	<u><i>Ostrya virginiana</i></u> (= Gk name of tree) (o-STRY-yuh)	Betulaceae [CC4]	Hop Hornbeam (hop-like fruit, shredded bark on older trees, leaves often marcescent [retained throughout winter], with venation that is forked at margin [in contrast to <i>Carpinus</i>])
<input type="checkbox"/>	<u><i>Phacelia purshii</i></u> (fuh-SEE-lee-uh)	Boraginaceae [CC4]	Miami Mist (newly-emerging leaves have “water spots” on them, as does the closely related <i>Hydrophyllum</i> [Waterleaf] plant)
<input type="checkbox"/>	<u><i>Phytolacca americana</i></u> (plant + red shellac color) (fy-toh-LACK-uh)	Phytolaccaceae (Caryophyllales) [CC2]	Pokeweed (leaves opposite, marcescent)
<input type="checkbox"/>	<u><i>Platanus occidentalis</i></u> (= plane tree + western) (PLATT-tuh-nuss)	Platanaceae [CC3]	Sycamore (brown bark famously exfoliates in irregular pieces to reveal a white inner bark / can be used to locate where streams are from a distance)
<input type="checkbox"/>	<u><i>Polystichum acrostichoides</i></u> (many rows + resembling <i>Acrostichum</i> , 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 the fertile tips of fronds which are dried up and brown)
<input type="checkbox"/>	<u><i>Quercus alba</i></u> (oak + white) (KWERK-us)	Fagaceae (white group) [CC4]	White Oak (leaves usually with 7 rounded lobes, with sinuses sometimes deep [sun leaves] or sometimes shallow [shade leaves] / leaves mostly fall from older trees while often remaining on younger ones [marcescent] / bark light gray that tends to form overlapping scales a little over halfway up the trunk / buds reddish-brown, blunt tip / acid soil)
<input type="checkbox"/>	<u><i>Quercus bicolor</i></u> (oak + 2 colors) (KWERK-us)	Fagaceae (white group) [CC7]	Swamp White Oak (leaves with shallow lobes – more like big rounded teeth / shiny above, downy-white below / leaf widest near the middle / acorns in clusters of 1-3 on long, dark, slender 2.5” peduncles / bark on smaller limbs peels in papery shreds / furrows on trunk more distinctive than <i>Quercus alba</i> . /)
<input type="checkbox"/>	<u><i>Quercus rubra</i></u> (oak + red) (KWERK-us)	Fagaceae (red group) [CC5]	Northern Red Oak (leaf: pointed lobes are not divided again at their tips [in contrast to Shumard], with shallow sinuses for shade leaves and more deeply cut sinuses for sun leaves / petiole sometimes red / ski tracks down trunk / acorns: as wide as long, with very shallow cap / buds: long, pointy, sometimes with hair on upper half /)
<input type="checkbox"/>	<u><i>Sassafras albidum</i></u> (sassafras + white) (SASS-uh-frass)	Lauraceae (Laurel Family) [CC2]	Sassafras (has green twigs, even in winter / scratch to enjoy Juicyfruit Gum or Fruit Loops fragrance / terminal buds green and plump / plant is dioecious / leaves: some mitten-shaped / no longer sold as food because of safrole’s cancer link)
<input type="checkbox"/>	<u><i>Staphylea trifolia</i></u> (cluster [of flowers] + trifoliate leaf) (staff-ill-LEE-uh)	Staphyleaceae [CC5]	American Bladdernut (inflated, bladderlike, papery seed capsules often persist into winter / terminal bud lacking, but often replaced with 2 lateral buds / opposite leaf arrangement)

<input type="checkbox"/>	<i>Symphoricarpos orbiculatus</i> (= gather together + fruit + round [leaf]) (SIMM-for-ee-KARR-pos)	Caprifoliaceae [CC1]	Coralberry (leaves opposite, sessile / fruit in leaf axils: purple-red drupes with 2 stones, persistent through winter / monoecious)
<input type="checkbox"/>	<i>Tilia americana</i> (= linden tree) (TILL-ee-uh)	Malvaceae [CC5]	Basswood (“has red buds, but it’s not a Redbud” – Fr. Sullivan’s joke / zigzag twigs / look for telltale bracts with attached peduncles / asymmetric leaf base, hyaline tissue along leaf margins, upper surface glabrous)
<input type="checkbox"/>	<i>Viburnum rufidulum</i> (= to tie [maybe referring to the pliancy of the twigs] + reddish) (vy-BURR-num)	Adoxaceae [CC4]	Rusty Blackhaw (opposite arrangement / short stubby twigs at almost right angles to main stems / buds velvety, dark rusty color)

NOTES

Scarify, Stratify, Vernalize:

On the way back to the cars, Ted found a large legume from a Kentucky Coffeetree. Intending to plant its seeds, he asked Sebastian whether or not the seeds needed to first be scarified. “Absolutely” answered Sebastian without hesitation, who then explained how to do it with a file edge, vigorous sanding, or a diamond-tipped drill bit. (Evidently the seeds are extremely hard.)

It’s easy to confuse the terms “scarify”, “stratify”, and “vernalize”. As Ted and Sebastian used it, “scarify” means to somehow break through the seed coat so that the seed can absorb water. At least “scarify” is easy to remember because the seed needs to be “scarred”.

Not so easy is the term “stratify”. What does a “cold treatment” have to do with “layers”? The seeds from many of our native plants must go through a period of coldness before they’ll germinate, which is why gardeners either plant them outside in the fall between *strata* of soil (one way to remember the word “stratify”) or they use the *strategy* of putting them in the refrigerator for a while (with “strategy” being another way to remember the word). By the way, the refrigerator seeds need to be in a moist medium. Keeping them in the dry seed package won’t do the trick).

Finally we have the term “vernalize” (“vernal” meaning “spring”). This too involves a “cold treatment”, but the term is used with plants rather than seeds, and it’s meant to induce flowering rather than germination. Just as seeds need to know when to germinate, plants need to know when to flower. Coldness is sometimes the cue. Even wheat – our most important flower – requires vernalization.

Sebastian is Back:

Everybody was happy to see Sebastian back from his botanical studies in Ecuador and Costa Rica. James Trager once told us that all botanists owe it to themselves to go abroad at least one time in their lives to explore a different ecosystem. Sebastian has done this bigtime. Among other places, he studied the plants in the PARAMO ecosystem. The paramo is in the cold tropics of the Andes Mountains above the treeline yet below the snowline. One of its iconic plants that he described is the *Espeletia pycnophylla* (from the Aster Family). You can see an online photo [HERE](#).

Brian the Bryophyte:

I’m constantly trying to create little memory aids to save myself from drowning in this vast ocean of botanical information. I probably forget most of them. But there’s one simple little mnemonic about the 3 Bryophytes that I haven’t yet forgotten. It has saved me countless times over the years. It goes like this:

Brian the Bryophyte LIVES in MOSSachusetts where he plays the HORN.

(LIVES = Liverworts) (MOSSachusetts = Moss) (HORN = Hornworts)

Not only does it help us remember the 3 bryophyte divisions, the *order* in which they appear helps us remember the sequence in which they first appeared on earth. (Actually, there’s some dispute about this now. Liverworts were once thought to be the first land plants because they don’t have any stomata. But now it’s proposed that they originally had stomata but lost them later. So someday we may need to rearrange the order in our sentence. But it’ll still work.)

Speaking of Liverworts:

Instead of turning back when we reached the Johnson Trail, we proceeded a bit farther to a wet rock wall. That's where we found our liverworts (and walking ferns, and lichens). Somebody wondered aloud "Is it a "leafy" liverwort?" Whoever said this knew something about liverworts. Liverworts are traditionally divided into 2 very distinctive groups: the LEAFY liverworts and the THALLOID liverworts.

The LEAFY liverworts look like moss, but with 2 rows of "leaves" instead of the moss's spiraling leaves. (Actually, true leaves had not yet been invented. They're just thin round outgrowths – only 1 cell thick and without a vascular system.) By contrast, the THALLOID liverworts have no "leaves" at all. They're the iconic creeping snakeskins that we all enjoy finding.

Was our liverwort a LEAFY or a THALLOID liverwort? As luck would have it, we found one of each! Nobody offered an identification for the THALLOID liverwort. But Kathy decided that the LEAFY liverwort was likely one of the *Porella* Liverworts (known as "Scaleworts"). As for species, she leans towards *Porella pinnata*.

Strange Fungus:

This time of year it's always exciting to find something green popping-up through the fallen leaves. So it was no surprise that many of us were mesmerized by what looked like a green and orange fungus rising up near the side of the trail. It wasn't the dark, wintery, "don't pay attention to me" shade of green that we find now and then in the winter woods. This was a bright, cheerful "it's springtime!" green that we never see in January. And we couldn't take our eyes off of its bright scarlet splotch that some mushrooms are known to display. We couldn't take our eyes off of it, that is, until David realized that it was just a ripped-up tennis ball that a dog or some animal had probably regurgitated (or worse). When he told us, our buzz of excitement stopped. Is he joking? David then used a stick to turn it over. There was a moan of embarrassment. How could we have made such a stupid mistake? We all silently resumed our walk along the trail.

Summer Eyes:

It's probably safe to say that most St. Louis botanists do their botanizing during the growing season. This gives them "summer eyes". Summer-eyed people develop skills in reading flowers and leaves. When winter rolls around, summer-eyed people either stay home or try to use their summer skills in a winter landscape. When they come upon a dried-up seedhead, they try to decipher which flower it might have looked like in the summer. They try to uncurl a dead leaf in hopes of finding a summer clue in its venation. Summer-eyed people can find winter botanizing frustrating.

But there are presumably people with "winter eyes" – people such as snowplow mechanics who have to regularly jump hemispheres to be in wintery places. With no green memories to rely on, winter-eyed people develop skills in reading tree silhouettes from a distance. They can easily recognize the distinctive interplay of their skeleton branches. In a field they can instantly decipher the many sepia puzzles of vertical stems. When they come upon a dried-up seedhead, they can read and identify it *for what it is - not for what it used to be*. It's a different way of thinking.

Just as summer eyes can be useful in the winter, winter eyes can be useful in the summer. Fortunately for us, we have the rare opportunity to get "eyes for all seasons" – Sir Thomas More eyes. Thanks not only to John but to all in our group who step-by-step, week-by-week, season-by-season, story-by-story, and joke-by-joke contribute in helping all of us open our eyes to better understand our natural world.

Here are some short observations:

- Kathy found a gall on a spicebush. Ted found it interesting and identified it as a Cynipid Wasp gall.
- We passed a large mound of soil that had broken apart and had slid down into the creek. Laura observed that the soil had no strata.
- We came upon 2 very large trees whose trunks seemed to have fused together. Mark described it as "inosculation" (which George confirmed was from the Latin *osculari* meaning "to kiss") But were the 2 trees actually sharing their vascular system? One was an oak and the other was a sycamore – very different plants that are far from each other on the tree of life.
- We passed quite a few very large Sassafras trees. Mark and John remarked that the Sassafras has interesting wood.
- Kathy observed that tiny *Corydalis* plants were beginning to pop up in the leaf litter. St. Louis has 3 different species of this poppy, but it's too early to tell which is which.

- There were many small Sugar Maples at the beginning of our walk. Unlike the more mature ones, young Sugar Maples hold-on to their leaves. The leaves are very pale – even ghostlike. This makes them easy to differentiate from the *Ostrya* (Hop Hornbeam) trees which were also numerous along the trail because the hornbeam’s marcescent leaves are noticeably darker. (By the way, *Ostrya*’s brother *Carpinus* [Muscle Tree] was also along the trail. Both of these Betulacs often have marcescent leaves.)
 - When we found the *Hydrangea* bushes, Kathy and Ted both emphatically remarked on the importance of *Hydrangea* flowers to pollinators.
 - At the beginning of the trail, quite a few of the trees had identification signs attached to them. This always leads to some good jokes from John.
 - Later along the trail we noticed that a number of vines had been cut. We understood why the Wintercreepers had been cut, but were perplexed why the *Ampelopsis* vines were also cut. At least people are trying to take care of the trail. We hope to return during the growing season.
 - We found 3 ferns, each having a catchy name: Christmas Fern, Walking Fern, and Bulblet Fern.
 - John pointed out that the young *Phacelia purshii* (Miami Mist) leaves had “water spots” on them (as does another of our Borage family members - the closely-related *Hydrophyllum* [Waterleaf] plant).
 - John has taken a special interest in lichens lately. He introduced us to several, including a *Dermatocarpon* (Stippleback Lichen). He mentioned that lichens are now considered to not only contain an alga and a fungus, but also a yeast (which is also a fungus).
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Thanks to the 12 participants who came out on this wet and very foggy morning. When we started it was in the upper 30’s but when we finished it was sunny and probably near 50°.

In alphabetical order: Kathy Bildner, Wayne Clark, Sebastian Forward, Michael Laschober, Ted & Lynn MacRae, John Oliver, Tina Richardson, David Steinmeyer, Mark Tolcou, George Van Brunt, and Laura Yates.