

# Pea Ridge Trails

February 19, 2024

	<b>BOTANICAL NAME</b> (with <a href="#">etymology</a> & genus pronunciation)	<b>FAMILY</b> [CC] = <a href="#">Coefficient of Conservatism</a>	<b>COMMON NAME</b> (with tips we learned)
<input type="checkbox"/>	<a href="#">Campsis radicans</a> (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"/>	<a href="#">Carpinus caroliniana</a> (= 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"/>	<a href="#">Carya cordiformis</a> (nut tree + heart-shaped) (KAYR-ee-uh)	Juglandaceae [CC5]	Bitternut Hickory (has naked buds, like the pecan, but mustard-colored / 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"/>	<a href="#">Carya laciniosa</a> (nut tree + shredded) (KAYR-ee-uh)	Juglandaceae [CC7]	Shellbark Hickory / Kingnut Hickory (compared to Shagbark, Shellbark has leaves with 7 leaflets [instead of 5], larger nuts, orangish twigs, and prefers a moist bottomland habitat)
<input type="checkbox"/>	<a href="#">Elaeagnus umbellata</a> (= olive + chaste + umbel inflorescence) (el-ee-AG-nus)	Elaeagnaceae (in the Rosales order, far from the olive's Lamiales order) [intro]	Autumn Olive (leaves: alternate, wavy margins, silvery scales on undersides / stems with occasional sharp spines / clusters of fragrant flowers with white, 4-lobed, petaloid sepals / sweet edible fruit, translucent red with silver and brown dots / plant fixes nitrogen / invasive)
<input type="checkbox"/>	<a href="#">Fraxinus pennsylvanica</a> (ash tree + Pennsylvania) (FRACK-sin-us)	Oleaceae [CC2]	Green Ash (dioecious / buds: opposite, reddish-brown with velvety texture / twigs: new ones are somewhat flattened / leaves: opposite, compound, leaflets taper at base to a short, winged petiole; undersides not whitish (in contrast to <i>F. americana</i> ) / leaf scar: straightish, not strongly curved around bud / habitat: prefers wet / more than 99% of Green Ash trees that are infested with the Emerald Ash Borer will die, however a small number of "lingering ash" will survive for cultivation) /
<input type="checkbox"/>	<a href="#">Hamamelis vernalis</a> (= together with fruit [new flowers and fruit from preceding year at the same time] + spring) (ham-a-MEE-liss)	Hamamelidaceae [CC7]	Spring Witch-Hazel / Ozark Witch-Hazel ["witch" is from an Old English word meaning "bendable"] (has 4 shoestring-like petals; our petals were yellow in a small red calyx cup / very fragrant / more common here than the Fall species <i>H. virginiana</i> )
<input type="checkbox"/>	<a href="#">Hepatica acutiloba</a> (liver + sharply-pointed leaf lobes) (heh-PAT-tick-kuh)	Ranunculaceae [CC7]	Sharp-Lobed Hepatica (leaves: 3-lobed, resembling big, liver-colored, melted shamrocks; lobes rather pointed, at least in comparison to its cousin <i>Hepatica americana</i> / flowers: no petals; what look like showy petals are actually white sepals; what look like green sepals are actually bracts – and hairy ones at that / stems are also hairy / among our earliest spring ephemerals)
<input type="checkbox"/>	<a href="#">Juniperus virginiana</a> () (joo-NIPP-pr-russ)	Cupressaceae [CC2]	Redcedar / Red Juniper (dioecious / leaves [under magnification] appear as tightly-packed opposite scales, stacked 90° from neighboring pairs / all parts fragrant / gymnosperm, hence no flowers, ovary, or fruit / male trees have pollen cones / female trees have blue, berrylike seed cones / can live many hundreds of years)
<input type="checkbox"/>	<a href="#">Lindera benzoin</a> (person's name + aromatic resin) (lin-DEER-uh)	Lauraceae [CC5]	Spicebush (male plants have conspicuously larger winter flower buds)
<input type="checkbox"/>	<a href="#">Pinus strobus</a> (= pine tree + cone) mnemonic: of all the pines, this one would look best under a strobe light (PY-nuss)	Pinaceae [intro]	White Pine (5 needles per fascicle, just as the word WHITE has 5 letters)

<input type="checkbox"/>	<a href="#"><i>Prunus serotina</i></a> (plum or cherry tree + late) (PROO-nus)	Rosaceae [CC2]	Black Cherry (mature trees develop dark, scaly, “burn cornflakes” bark / younger trees display horizontal lenticels / a common fungus disease called “Black Knot” can unfortunately aid in identification)
<input type="checkbox"/>	<a href="#"><i>Quercus imbricaria</i></a> (oak + roofing tile [wood use]) (KWERK-us)	Fagaceae (red group) [CC3]	Shingle Oak (leaf: of our 3 lobeless native oaks (water, shingle, willow), this has the “middle-size” leaf / leaves marcescent (stay on tree throughout winter) /
<input type="checkbox"/>	<a href="#"><i>Staphylea trifolia</i></a> (cluster [of flowers] + trifoliolate 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)

## NOTES

**GETTING THERE:** Since it’s tricky to find the Pea Ridge Conservation Area, we first met at Meramec State Park so that we could caravan to Pea Ridge. Meramec and Pea Ridge are connected by only one road – Hwy 185 – so that part’s simple. The tricky part is finding the turnoff onto the little gravel entrance road. Here’s how to do it: take Hwy 185 for 15.2 miles to [38.075943, -90.989494](#). There’ll be a Conservation Dept sign on the left side of the street. That’s where you’ll make a right turn onto the unmarked gravel road, which you’ll take to its end – about ¾ mile.

**OZARK WITCH-HAZELS:** Our main goal for driving all the way out to Pea Ridge was to find the flowering Ozark Witch-Hazels (*Hamamelis vernalis*). And find them we did! Actually, they found us. We were still in the parking lot when John exclaimed: “Can you smell them?” Yes we could! Their honeylike perfume wafted over us and pulled us in like flies – just as it’s designed to do.

The flowers of these large shrubs are like none other. Each flower has 4 very long, narrow, shoestring-like, yellow petals. Those long petals radiate from the center of a small, red, 4-lobed calyx cup. Interior to them are 4 stubby little stamens standing guard around the 2 tiny styles.

But wait, there’s more! Winter turns to Spring, and Spring to Summer, but the flowers still aren’t done entertaining us. By late summer the fertilized flowers will have produced fruit capsules. John explained that these capsules will explosively dehisce at the slightest touch, launching their seeds quite a distance from the mother plant, much as our touch-me-not *Impatiens* do.

“*Vernalis*” suggests “Spring”. But it’s a good thing that we didn’t wait until Spring to visit Pea Ridge. Witch-Hazel flowering is linked to temperature. With our warmer winters, maybe mid-February is the new Spring. Anyway, we timed it just perfectly. Witch-hazels were everywhere. In the distance we could see large swaths of their hazy yellow blooms – especially on the other side of Indian Creek. (John joked: “The plants are always more floriferous on the other side of the water.”)

**BUTTERNUT vs BITTERNUT:** Ugh, layers of confusion! In the past there have been reports of Butternut trees (*Juglans cinerea*) in the area, and so we were all hoping to find one. But the Butternut Canker (a fungus disease that girdles the branches) has wiped out most of the Butternuts, so finding a healthy one would be very special indeed.

Apparently the confusion began when somebody said that they had found a “Bitternut” (a type of Hickory) which was misunderstood as “Butternut” (a type of Walnut). Everybody who arrived at the tree then excitedly asked “You found a Butternut?” No, a Bitternut. (With all the “bitternuts” and “butternuts” flying around, I tried to make a humorous tongue-twister “Better not call a Bitternut a Butternut” but the words came out scrambled and nobody laughed.)

John once described how in earlier days people would gather butternuts, boil them in a pot, and then skim off the oil to use as butter. Nowadays the Butternuts (also called “White Walnuts”) can no longer be purchased as food – and in Minnesota it’s even illegal to harvest them. The only Butternut recipes I could find on YouTube are those for “Butternut Squash”.

Bitternuts usually (though not always) taste bitter. But they are more cold-hardy than the closely related Pecans. So the two plants are often grafted together, with the Bitternut used as the rootstock, and the Pecan used for the scion. This allows the Pecan to be planted far north of its native range. (It’s interesting that the roots determine a plant’s vigor, cold-hardiness, and disease resistance, while the scion determines a plant’s flavor.)

Another related bit of confusion occurred when somebody used the word “Beech” and John corrected them with the word “Birch” (or vice versa). Those two words – “Beech” and “Birch” – are famous for turning people’s brains into molasses. But “Beech” (*Fagus*) and “Birch” (*Betula*) are important words to keep straight because each is a “type genus” from

which an entire family is named. So let's sort-out these 4 confusing "nut" words which unfortunately all start with the letter "B":

- Butternut (*Juglans cinerea*) is a Walnut in the Walnut/Hickory Family (Juglandaceae)
- Bitternut (*Carya cordiformis*) is a Hickory in the Walnut/Hickory Family (Juglandaceae)
- Beech (*Fagus grandifolia*) is a Beech in the Beech/Oak/Chestnut Family (Fagaceae)
- Birch (*Betula nigra*) is a Birch in the Birch/Hazelnut/Hornbeam Family (Betulaceae)

All 3 families (Juglandaceae, Fagaceae, and Betulaceae) are related and belong to the same glorious "nut" order: Fagales.

#### MYSTERY OF THE FALLEN JUNIPER TIPS:

It was brilliant of Lorie to ask so directly and unabashedly: "Why are there so many branch tips underneath the Juniper trees?" Most of us had probably never even noticed them before. But Ted had. He replied without hesitation: "I've been wondering the same thing for years!"

What in the world are they talking about? I walked over to a Juniper tree. Sure enough, there were branch tips littering the whole area underneath the tree. I picked one up. It was about a foot long. It didn't look like it had fallen naturally from the tree. The severed end showed no abscission zone. It showed no sign of disease or evidence that an insect had chewed it off. In fact it looked like it had been forcibly torn from the tree. What could possibly be happening?

Then came our big, big, big clue. Ted said: "I've only noticed them under female trees."

A short pause from our story. Our Red Juniper (*Juniperus virginiana*) is not a flowering plant. It's a gymnosperm. In fact it's the only native gymnosperm we have in St. Louis. (Yes, we have the Shortleaf Pine, but that's still a bit too far south to be considered a St. Louis native. We also have Bald Cypress, Ginkgo, and all kinds of conifers in our parks and in people's yards. But those don't count.) Our Juniper (usually called a "Redcedar" even though there are no true cedars native to North America – or to South America for that matter) can be found everywhere here. They can even be found overlooking the highways, growing sideways from the rock walls of road cuts. Amazing! In fact, if the dandelion and the Juniper weren't so common, people would probably describe them both as being "magnificent". And as if that weren't enough, the species is also dioecious, meaning that each tree is either "male" or "female". But being a gymnosperm, the Juniper doesn't have any flowers. Flowers hadn't been invented yet. And "no flowers" means "no ovaries" and "no fruit". They only have cones. The female tree has "seed cones" and the male tree has "pollen cones". Now, back to our story.

Immediately after Ted voiced his "female trees only" observation, we all set out to verify it. It was exciting. Finding Juniper trees was no problem because they were everywhere. Sexing the trees was easy too. The "male" trees had yellow blotches of tiny pollen-laden cones here and there on its branches, while the "female" trees had the familiar little BB-size blue cones that are used to flavor gin. At least they were *supposed* to have those little blue cones. Many didn't. Instead, they had plenty of branch tips carpeting the ground below. Yes, under the female trees were the clipped branch tips. Under the male trees there were none. Ted's observation was correct. But what does it mean? Everybody sensed we were getting close to solving the puzzle. It felt thrilling! The group deduced that some animal must be feasting on the female cones. Questions popped up: "Could deer have bitten off the branches?" No, the branches were too high. "Could squirrels have ripped them off?" No, the branch ends were much too flimsy to support a squirrel's weight. But what if a squirrel had chewed off the tips from above, and then climbed down the tree to eat the little blue cones from the fallen tips? Eureka! That can explain it all!

Had we been able to get a cellphone signal, we could have learned online that squirrels absolutely love Juniper "berries". We could have read complaints about squirrels tearing apart people's Juniper hedges. We could have saved so much time had we not tried to discover something that had long ago already been discovered. But that would have taken away our adventure. Yes, this is one cellphone signal that we're probably all happy we never got.

#### OLD MAN'S BEARD LICHEN:

Recently John has been inspired by his botanist friend Doug Ladd to learn more about lichens. And fortunately for us, he's taken us along on his journey. Lichens can be tricky to identify, but the iconic, hard-to-forget one we met today at the end of our walk (near the spring) looked more like a moss than a lichen. In fact its genus name "*Usnea*" actually means "moss" in Arabic.

People must really like the word "moss". It's used to name some lichens (which are in an entirely different kingdom from the mosses). And it's used to name some flowering plants (which are in yet another kingdom). Case in point: Spanish Moss. It's neither Spanish nor a moss. It's in the pineapple family (of all places!).

Old Man's Beard (*Usnea*) somewhat resembles a refined Spanish Moss (*Tillandsia usneoides*). But as Ted pointed out, this is etymologically backwards. The species epithet "*usneoides*" means "like *Usnea*". So we should say that Spanish Moss resembles Old Man's Beard rather than the other way around.

Our *Usnea* is classified as a FRUTICOSE lichen (as opposed to a FOLIOSE or a CRUSTOSE lichen). "Fruticose" is an adjective for "shrub", not for "fruit" (an easy-to-make mistake). We found quite a few *Usnea* lichens growing on *Gleditsia triacanthos* (Honeylocust trees).

As John was explaining that the fungus controls the algae/fungi/yeast relationship, Kathy Thiele quipped "I'm like'n it! Everybody laughed.

Here's an easy-to-read primer on Missouri lichens written by John's friend Doug Ladd:

<https://mdc.mo.gov/magazines/conservationist/1998-10/looking-lichens>

#### SHORT OBSERVATIONS:

- Brenda mentioned that her friend already got a tick! Not a good omen for what's to come.
- As in previous weeks, we found Hackberry trees that had galls on their leaf petioles. They are caused by the "Hackberry Petiole Gall Psyllid" (*Pachypsylla venusta*) – one of the host-specific "Jumping Plant Lice"
- We found a very long beaver dam that crossed Indian Creek, backing-up the water. Standing in the downstream side of the dam, we were wondering why the riverbed looked higher on the upstream side. The dam did not appear old enough for so much sediment to have accumulated. Then somebody who was still up on the hill shouted down that both sides looked the same. We were just confused by an optical illusion.
- Kathy Bildner commented on the diversity of rocks on the creek-bed. David showed us samples of Druzy Quartz and Chert. Rich Thoma found the diversity curious given that the hills on both sides were mostly limestone. He suggested that over the millennia water had carved away the limestone until reaching this harder bedrock.
- The spring that John led us to flowed from a small cave. Tina found a beautiful spiral fossil in a piece of sparkly sandstone there.
- Not for the first time, Ted was able to identify a tree just by noticing abnormal growth. This time it was a Black Cherry tree. Its dark, abnormal swellings were caused by the Black Knot fungus.
- The whole area appeared quite free from litter. We did find a couple of plastic containers, but David Steinmeyer bagged them and carried them out.
- Our bryologist Lorie identified 8 mosses. You can find them on our special bryophyte page [HERE](#).
- Ted seemed happy to have found a fallen branch that had a spiral tunnel carved into its broken end. He said that the spiral was diagnostic of a Longhorn Beetle. Ted explained that a Longhorn Beetle larva had chewed off the branch, causing it to fall so that the larva would have a food source all to itself. He plans to take the branch home and wait for the beautiful insect to emerge.

#### PARTICIPANTS:

There were 19 of us botanists today, who are (in alphabetical order):

Brenda Adams, Rick Armstrong, Fran Armstrong, Kathy Bildner, Steve Bizub, Jerry Castillon, Wayne Clark, Greg Gaines, Lorie Hetrick-Volenberg, Michael Laschober, Sharon Lu, Ted MacRae, Burt Noll, John Oliver, Katie Pittman, Tina Richardson, David Steinmeyer, Kathy Thiele, and Rich Thoma