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SOURWOOD

(*Oxydendrum arboreum*)



Frank Oliver photo

This plant is tough to find in Indiana outside of a few counties. Chewing a leaf will tell you all you need to know about how it got its name, but its honey is considered a delicacy by some people.

By Michael Homoya

In far southern Indiana there's a band of counties bordering the Ohio River that could rightly be referred to as "Little Appalachia." At least when it comes to plants.

If you could hop from the Great Smoky Mountains in Tennessee to Indiana's hills between New Albany and Tell City, you would see plants that might make you think you'd never left the mountains. The roster includes mountain laurel, umbrella magnolia and Virginia pine.

Sourwood is another. While mountains aren't its only home—it grows wild, even in the Florida panhandle—most of the land it inhabits is rugged terrain. Steep rocky slopes characterize its Indiana habitat, especially those areas with rather dry, acid soils and sandstone outcrops.

Also known as sorrel tree for its sour-tasting leaves, sourwood's botanical moniker, *Oxydendrum arboreum*, was given for the same reason. The Latin name means "sour tree," from the Greek *oxys*, meaning sour, and

dendron, meaning tree. Chew a piece of sourwood leaf and it all makes sense.

The tree is a member of the heath family (*Ericaceae*). This is the same plant family that includes rhododendron, mountain laurel and blueberry. The family ties are especially apparent between blueberry and sourwood. Their tiny tube-shaped flowers are almost identical.

Sourwood is a small to medium-sized tree resembling the much more common sassafras in growth form and bark. It is quite attractive overall, and in some parts of the country, it's planted as an ornamental. While sourwood's natural range in Indiana is limited to the extreme south, it's tolerant of cold temperatures and can be grown throughout the state in appropriate soil conditions.

Several aspects of the tree warrant consideration for landscaping use, including the sprays of tiny white flowers that form on branch tips in mid-summer. To some people these flower clusters resemble those of lily-of-the-valley,

State Range: Floyd, Harrison and Perry counties.

Habitat: Dry forest with acidic soil over sandstone.

Blooming Period: Late June into July.

Flowers: Tiny white urn-shaped flowers assembled in sprays at branch tips.

hence another common name for sourwood—lily-of-the-valley tree. Its foliage is also attractive and is commonly ablaze in red or reddish-purple in autumn.

Sourwood is not a common tree in Hoosier wildlands. It is officially designated by the DNR as State Rare (SR). Such a designation means that the number of populations existing in the entire state is 20 or fewer, but more than 10. Almost all Indiana populations of sourwood are in Perry County.

Sourwood honey is a delicacy, considered to be a gourmet honey by some. Sorry, but Indiana probably doesn't have sufficient numbers of sourwood trees for honey production. You'll need to go south-east into the tree's main range for that.

It may be called sourwood, but this is a sweet tree. □

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DWARF LARKSPUR

(*Delphinium tricorne*)



Thomas Swinford photo

This relatively short plant boasts a charming appearance and a defense against predators that earned it the nickname “staggerweed.”

By Thomas Swinford

Dwarf larkspur is the only native Indiana member of a familiar group of plants commonly found in perennial gardens. The larkspurs that form this group are often referred to by their scientific name, *delphinium*, even by those who don't typically use scientific names when identifying plants.

The larger, showy larkspurs typically available at garden centers are hybrids and cultivars of plants that are found throughout the northern hemisphere, especially in its mountainous regions. Many larkspur species are found in the high-country meadows of the western United States.

As you might guess from its name, the dwarf larkspur is one of the most diminutive members in its genus of plants, which is otherwise tall and stately. It is rarely found to have grown more than a foot in height.

But what it may lack in leggy-ness, it more than makes up for in beauty and charm.

The colorful and unusual flowers are tidily arranged along a stout single

upright stalk, gracefully arising from interesting, deeply lobed foliage. The individual flowers are a distinctive soft velvety purple, and have a five-pointed star-like appearance further adorned with a long, curving floral spur.

If you use your imagination, you might be able to see the flowers as little “star-men” adorned with purple wizard's hats.

This plant is an early spring bloomer, often appearing in the second week of April. This trait is likely an adaptation to the forest habitats in which it is typically found. It seems to prefer somewhat open wooded slopes.

This plant reaches its greatest abundance in southern Indiana, where large colonies may cover several acres. It is, however, found throughout most of the state, except in the northern tier of counties, where it is entirely absent.

Dwarf larkspur is pollinated by insects, primarily the bumblebees and miner bees that possess the long tongues required to reach the nectar deep in the

State Range: Near statewide, more common south of Indianapolis.

Size: 1.5 feet maximum.

Habitat Requirement: Open woodlands, ravines and slopes.

Blooms: April 15–June 1.

floral spur. As the bees strain to reach the rich reward, their heads become dusted with pollen, which they then carry to the next plant to cross-pollinate.

This plant belongs to the buttercup family, which is best known for its members' bright and shiny yellow flowers. However, many plants in the buttercup family, dwarf larkspur included, possess atypical flowers that capture the imagination with interesting shapes and varied bright other colors. Others in this group include columbine, monkshood and baneberry.

Dwarf larkspur is not a wild edible. It possesses highly poisonous foliage and leaves to deter herbivore predators. Some cattlemen call it staggerweed because of its deadly effects upon livestock. Although it is not known to have been documented in a human fatality, its alkaloid poison is suitably toxic.

But it still pleases the eye. □

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NODDING ONION

(Allium cernuum)



John Maxwell photo

Nodding onion's flowers, like these at O'Bannon Woods State Park last July, often seem to nod to the ground, as the plant's name suggests.

By Benjamin W. Hess

Just hearing the word “onion” often conjures up memories of childhood. Usually, those thoughts are about onions planted in a garden. But native onions grow wild throughout Indiana, and can make memories, too.

Nodding onion is one of those. It's traditionally in the Lily family but recently has become a new member of the Amaryllis family, which have bulbs and linear leaves and exhibit umbels of flowers. It prefers full to partial sun, can tolerate a wide range of soil moistures and can be found in various habitats. It was once one of North America's most widely spread native onions, but as with most native species, habitat loss has restricted it to a few remaining remnants.

One place you may see nodding onion is in a prairie remnant of northwest Indiana. Other possible locations are the high, dry bluffs of the rivers and creeks of northeast and southeast Indiana. Although nodding onion grows

along these scenic rivers, it can be hard to spot there. The reason is the riverside conditions that make it difficult for it to bloom the beautiful flowers that are its most distinctive feature.

The culprit is the shade on the bluffs from large oak and maple trees. This condition may hinder flowering until one of these great trees returns to the forest floor and opens the river bluff to more sunlight. Despite its flowering challenges, the plant itself can tolerate partial shade because of its enlarged underground stem/bulb.

These elongated bulbs, which are characteristic of the Amaryllis family, act like large storage tanks of energy until more favorable flowering conditions emerge.

When blooms do arrive, they protrude from a stiff central stem in a beautiful umbel of pink-to-lavender flowers that seem to bow or nod to the ground. Even when the flowers begin to fade and transition into seed

Habitat: Grows in, loam, sandy, or clay soils.

Flower period: July to August.

River bluff companion plants: Shooting star, savanna blazingstar, round-leaved ragwort, white oak.

production, the umbel stays in this position and produces many small black, shiny seeds.

The flowers' position relative to the forest floor tends to favor pollinators that can collect pollen upside-down or hover while drinking nectar. Among this group are European honeybee and native ground-dwelling bees such as sweat bees, mason bees and miner bees, all of which typically travel close to the ground when seeking pollen.

Hikers may often overlook or even step on nodding onion along the Maumee or Wabash rivers in the spring and early summer, when its grass-like leaves are present. If so, the distinct onion scent from the crushed leaves may rise from the high river bluff, causing pause to look for the source of that familiar, nostalgic smell. □

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PURPLE FRINGELESS ORCHID

(*Platanthera peramoena*)



Frank Oliver photo

One of the most attractive wildflowers in the state, this plant is found mostly in southern Indiana, in floodplains and streamside habitats.

By Andrew Reuter

Sluggish, humid air roasts in southern Indiana during late-July days. The cacophony of dog-day cicadas, katydids and near-eye gnats composes a familiar forest soundtrack. Unrequested spider-web masks frequently drape faces.

But such discomforts may be worth the inconvenience when searching for purple fringeless orchid.

This plant blooms in Indiana in midsummer. Bold and brilliant, it is one of the most attractive native wildflowers in Indiana.

“*Peramoena*” roughly translates to “loveliness.” The praise refers to the inflorescence (the collective flowers) the color of which ranges from pale rose-purple to rich magenta.

Eight to 25 flowers adorn the stem in what’s known as a raceme—each flower is attached to the end of a semi-curved pedicel (i.e., the stem between stalk and flower). Each flower sports a long nectar spur, luring certain daytime moth and butterfly pollinators that have

equally long proboscises, or tongues.

Strategically placed within the structure of the flower, the plant’s pollen masses evolved to be able to attach to the compound eyes of compatible pollinators. Several species of moth and butterfly pollinators carry purple fringeless orchid pollen masses. These include monarch butterfly, swallowtail and small sphinx-moth species, like hummingbird clearwing.

Those species’ affinity for pink to purple flowers, their anatomical features and feeding strategy—and multiple records from different states—point to their being primary pollinators of this plant. Research on the subject is underway at Lynchburg College in Virginia.

Purple *fringeless* orchid can be confused at first glance with purple *fringed* orchid. The plants’ respective names convey one of their differences—the “fringiness” of their respective flower’s lower lips.

Divided into three lobes, the lower-lip edges of purple *fringeless* orchid have a ragged appearance, resembling a petal

State Range: Southern half; primary range is southern third.

Bloom Dates: Mid-July to late August.

Height: Up to 3 feet.

Habitat: Various habitats; mostly ephemerally wet and riparian areas.

or leaf that has been slightly damaged or gnawed. Purple *fringed* orchid has deep cuts into the lobes that are one-third or more of the lobe length, causing the lower lip to look toothed. Or fringed.

One of the easiest ways to tell the difference between the two, in Indiana at least, is range and habitat. Purple *fringeless* orchid prefers the southern portion of the state in ephemerally wet, more acidic silt-loam soils associated with floodplains and streamside habitats. Purple *fringed* orchid is found primarily in northern Indiana in sandy, muck soils associated with groundwater-fed wetlands.

If you’re willing to sweat and stray from the beaten path (where that’s allowed, of course), the swelter of the streamside woods in mid-summer Indiana may well be worth the energy to catch a glimpse of purple fringeless orchid. □

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SHRUBBY CINQUEFOIL

(*Dasiphora fruticosa*)



Frank Oliver photo

Like many of its fellow native Hoosiers, shrubby cinquefoil, a widely cultivated landscape plant, hates heat and humidity.

By Emily Stork

You may never have seen this shrub in its native Indiana habitat, but you've seen this shrub.

This cool-climate species has found niches across the northern and western United States. It can be found growing in places ranging from low valleys, springs and stream banks to subalpine meadows, rocky ledges and mountain peaks. It's also native to Europe and Asia.

But it hates heat and humidity.

That's why its range does not extend into any southeastern states, and why its Indiana range is restricted to hard-to-find habitats fed by cool, chalky groundwater. It also explains, in part, why it's such a widely cultivated landscape plant. Both it and its cultivars can tolerate a wide range of conditions, from wet to dry and full sun to partial shade.

Which explains why you've seen it, but possibly not in Indiana's nature.

This plant's original Latin name, *Potentilla fruticosa*, is still widely used. The genus *Potentilla* refers to the

theory that the plant contained potent compounds useful in medication.

The common name for *Potentilla* is cinquefoil, which means five leaves. Most cinquefoils have leaves with five leaflets, often arranged like the fingers on your hand. Shrubby cinquefoil also often has five leaflets (varying from three to seven) and has similar-looking five-parted yellow flowers.

When grouped with other *Potentilla*, this was the only cinquefoil species that was woody (*fruticosa* means shrub-like). But molecular biology shows that shrubby cinquefoil isn't that closely related to other cinquefoils. Thus it has been moved to a new genus, *Dasiphora*, which means thick, hairy or shaggy. All aptly describe shrubby cinquefoil and give rise to its rugged yet delicate beauty, which accounts for the rest of the reason this plant is so popular in landscapes.

Shrubby cinquefoil is a small, erect shrub with numerous, delicate branches, giving rise to a bushy

State Range: Scattered in the northern third of state with outlying occurrences to the south.

Size: One to 3 feet tall.

Habitat Requirement: Wetlands that contain calcium carbonate.

Blooms: Late May to September.

appearance. Its leaves are covered in silky hairs, giving the plant a gray-green cast. The young, slender pale-brown to purplish-red twigs are covered with long, silky hairs. These hairs are shed with age on older branches from which the brown to gray-black bark will shred and dangle.

The pale to bright yellow flowers are $\frac{3}{4}$ - to 1-inch wide. The flowers have one of the longest blooming periods among native Indiana plants, starting in early summer and persisting through fall. That duration might help you find this species in nature.

You may find other cultivated color forms, from white to orange to red, in landscaping. To see the variety of this species in Indiana's nature, try the fen near the Welcome Center at Pokagon State Park's Trine State Recreation Area. □

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CHRISTMAS FERN

(*Polystichum acrostichoides*)



John Maxwell photo

One of the most common or at least the most familiar fern species in Indiana, this Christmas fern was found at Fall Creek Gorge in Warren County.

By Roger L. Hedge

To some people, ferns may conjure thoughts of cool, dark, mature forests.

Or rich, moist, shady ravines bordered by steep rocky cliffs.

Both are certainly habitats for many fern species, including Christmas fern. But Christmas fern can also be more wide-ranging and not as finicky about where it grows as some of its ilk.

Christmas fern is one of our most common Indiana ferns, or at least one of our most familiar. Its evergreen fronds may adorn the high-quality forests described above—and indeed may prefer them—but don't be surprised to also find this plant in more disturbed second-growth woodland or even in drier sites and areas with small openings in the canopy.

Although the plant generally has a statewide distribution, Christmas fern is decidedly more common in hilly portions in the southern half of Indiana. This bulk of occurrence extends into the west-central part of the state, especially

following areas of more-rugged terrain.

Christmas fern usually occurs in clumps, with its arching fronds radiating out in a circular pattern. The fronds, or leaves, are shiny green and widest near their middle, narrowly tapering to their tips. The narrow tips of those that are fertile will curl over, offering some protection to the brown spore clusters on the back side of the frond.

A closer look at the base of a fresh, new cluster of Christmas fern growth in spring may reveal the previous year's fronds that overwintered. They usually lie flat against the ground. This prostrate tendency may enable the plant to use the limited winter light more efficiently.

These older fronds are dark green and leathery, and their appearance differs greatly from the plant's fresh leaves of spring.

Christmas fern's familiarity may stem from the species' superficial resemblance to the popular house plant, Boston fern. In an Indiana woods, however, there aren't many lookalikes.

State Range: Frequent in the southern half of the state, uncommon in northern Indiana.

Habitat: Woodlands of all types, especially rich forested slopes.

Size: One- to 2-feet tall evergreen, each frond (leaf) is 3–4 inches wide.

Reproduction: Does not have flowers. Look for crowded spore-cluster dots on back of frond.

Probably the closest Indiana plant to Christmas fern in appearance is glade fern (*Diplazium pycnocarpon*), a generally taller, non-evergreen fern, with leaflets that have smooth edges and a smooth stalk.

Christmas fern has spiny-tipped teeth along its leaflet margins and a rough, scaly stalk. The base of an individual leaflet has a distinctive lobe, or toe. By using your imagination, the leaflet might remind you of a tiny Christmas stocking—and help you remember the name Christmas fern.

Some say Christmas fern's shiny, evergreen, holly-like leaves make it an attractive winter holiday decorative, and several sources mention it being used for such Christmastime purposes by early pioneers. Doing so would certainly have added some much wanted greenery to their mantelpiece during the sometimes dreary winter season. □

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