# BotSoc News

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# Once a colossus of the eastern forest, American sycamore is still an impressive tree rich in historical meaning and mention

By **Richard Ware**

Richard Ware here writes in depth about one of Georgia's inconic trees as part of an occasional, updated series on Georgia's trees that he first authored more than 25 years ago.

American sycamore (*Platanus occidentalis* Linnaeus) has, or had, the greatest girth of any deciduous tree in the eastern United States, especially in the Ohio Valley. Andre Michaux found one on an island in the Ohio River that had a circumference of 40 feet 4 inches and had been measured 20 years earlier by George Washington, with nearly the same dimensions. Michaux's son Francois in 1802 found a tree that beat his own father's record, with this tree measuring 47 feet in circumference.

American sycamore (*Platanus occidentalis* Linnaeus). Photo by Richard & Teresa Ware.

Nearly all sycamores over 100 years old are hollow inside, so early pioneers often stabled a horse, cow, or pig in a hollow sycamore, and sometimes a whole family took shelter in such an hospitable giant until the log cabin could be raised.

As the story goes, John James Audubon came upon such a hollow giant near Louisville, Ky., very near dusk one evening in July. As he neared the tree, he was astounded by the sights and sounds he observed, for thousands of chimney swifts (or "swallows as the pioneers often called it") were pouring inside the tree sometimes four or five at a time through a hole. He put his ear to the trunk and listened until after dark at the tremendous roaring sound made by the birds until that had all settled down for the night. He came back the next morning and waited for 20 minutes with his ear against the tree. All of a sudden he jumped away from

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## President's Perspective

**BotSoc News**
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I really had a lot of fun at the 2023 Spring Wildflower Pilgrimage. I saw many interesting plants and even more interesting plant people. Thank you Mei Lee Fung, trip leaders, and the many others that helped put such an excellent event together. Also thank you members and attendees for making it a great event.

People asked me what action they can do, how they can get involved in plant science, and produce something useful. If needing direction, start with what you have available. Step outside, find a plant you do not know, and study it. Years ago I did this with a common weed in my yard (Wayne County, Georgia) that had a pretty flower. Actions I took, not in any order, yet sort of all at once:

1) I used field guides to identify the species.
2) I examined multiple plants in my yard.
3) I examined parts of the plant.
4) I researched other literature on the plants.

Results:

1) From field guides I determined that the plant was broadleaf pink purslane (*Portulaca amilis).*
2) Although they were similar, I was confusing it with a larger version of plant, a different species, common purslane (*P. oleracea).* For a great, free resource for plant identification I recommend Weakley, A.S., Flora of the southeastern United States https://ncbg.unc.edu/research/unc-herbarium/flora-request/.
3) From examinations I saw neat stuff such as how hairy (dense trichomes) *P. amilis* appeared and with pink flowers; different from the not hairy (glabrous) plants of *P. oleracea* that have yellow flowers. By my counts, I found the most seeds in a seed pod of *P. amilis* was 216, yet only 43 seeds for *P. oleracea*. And *P. amilis* pollen looked very orange in color.

To summarize, by taking the time to examine unfamiliar plants in my yard, I was able to provide this report, teach a few botanical terms, and perhaps provide a few neat facts on these species. I left off a fourth result: You read what others have found, and from such discussions you too can join in and be a part of the science – knowledge and study of plants.

Go out and look at some plants. You may even find *Portulaca amilis* in your own yard. Have a great day!

*Timothy Estep*

## Member News

*Remembering Teresa Ware*

# BotSoc loses a longtime friend and tireless contributor

The Georgia Botanical Society deeply mourns the loss of beloved friend, botanist, editor, photographer, leader and BotSoc board member Teresa Ware, beloved wife of longtime member and key contributor Richard Ware. Teresa passed away April 24 after a long battle with ovarian cancer. She was 72.

Teresa Ware, whose presence and many gifts graced our society for more than 36 years. Photo by Richard and Teresa's son-in-law Chris Morrison.

Teresa and Richard joined BotSoc in 1987 and have made countless major contributions throughout the intervening years. Teresa served as our society's treasurer for 6 years; was for more than 20 years co-editor with Richard of the society's journal *Tipularia*, where their superb photographs of wildflowers and trees enhanced every issue; and served on the board of directors for 28 years. She and Richard together also led countless field trips and workshops, and they together took, collected and posted online their first-rate photographs of trees and flowers, creating a rich, extensive resource for all regional botanists and nature lovers.

Yet it is Teresa's presence that may be most remembered by many members. Her ready smile, lovely personality, upbeat attitude, and decades-long hard work on behalf of our society will be missed in a big way and for a long time by BotSoc members. ◙

## Field Trip: Mulky Gap Revisited

*Two years on, the future of Mulky Gap's spectacular display remains uncertain*

# BotSoc revisits site where it has led innovative effort to prevent future prescribed burns of sensitive areas

**Felid Trip:** Mulky Gap, Cooper's Creek WMA near Blairsville

**Date**: April 28, 2023

**Trip Leader:** Clayton Webster

**Trip Report:** Clayton Webster

On April 28, 11 members of the Georgia Botanical Society met with four members of the U.S. Forest Service (USFS) at Mulky Gap in the 30,000-plus-acre Cooper's Creek Wildlife Management Area (WMA) near Blairsville. This meeting was the culmination of a two-year process led by BotSoc to have the USFS agree to adjust the way they do prescribed burns in areas with significant wildflower populations.

Mulky Gap had long been known by the botanical and hiking communities as the best place in Georgia to see pink lady's slippers (*Cypripedium acaule*) in bloom in the spring. There could be

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## American sycamore—Continued from Page 1

the tree thinking the great tree was giving way, only to discover the tree was still upright and the commotion was from the “swallows” now pouring out in a black stream.

It is also said that the fruit of the sycamore was the favorite food of the Carolina parakeet (or paroquet in former usage), the only member of the parrot family native to the United States. These gaily-plumaged birds are now extinct, as are the gigantic sycamores of the virgin forest. Long ago these giants were recklessly cut down to clear the land or to feed the sawmills. The trees we see today are the merest shadows of their former dimensions.

Other names for the American sycamore include sycamore, buttonwood, planetree, buttonball-tree, plane, whitewood, water beech, and Virginia maple.

**Taxonomy**: American sycamore is a member of the sycamore or planetree family (Platanaceae). Platanus has been variously described as being from the Greek *platys*, meaning broad, apparently referring to the large leaves, or meaning flat-leaf (the Greek name for a planetree); or from *platanos*, the Greek name for *P. orientalis* (oriental planetree). The species name *occidentalis* means western; i.e., of the Western Hemisphere. The sycamore family has only one genus and six or seven species, with three being native to the United States. The other two, *P. wrightii* and *P. racemosa*, are natives of the Southwest and California, respectively. The London planetree (*P. acerifolia*), which is planted as a lawn and street tree, is probably a hybrid between our own American sycamore and the oriental planetree (*P. orientalis*).

Views of three morphs of the iconic bark of the American sycamore (*Plantanus occidentalis* Linnaeus). Photos by Richard & Teresa Ware.

**Description**: A large tree, 100 feet to 170 feet in height, with a straight or leaning trunk 3 feet to 14 feet in diameter, usually branching about 20 feet to 80 feet above the ground into a massive, spreading, open, somewhat irregular head. Leaves are alternate, simple, deciduous, broadly ovate, 4 inches to 7 inches (rarely up to 14 inches) in diameter, palmately three to five-lobed, with broad, shallow sinuses; apex, long-tapered; base, flat or heart-shaped; margin, wavy, with short or long, tapering teeth; light green, glabrous above, with pubescence below; petioles, stout 3 inches to 5 inches long, enclosing the lateral buds in their swollen bases; stipules, leafy, surrounding the twig, often persisting through the season.

**Flowers** are minute, appearing with the leaves in dense, stalked, unisexual heads; staminate heads, dark red, axillary, each flower with three to six minute sepals and three to six long-pointed petals; stamens, with short filaments and two-celled anthers; pistillate, green or reddish green, on long, terminal stalks, each flower with three to six small sepals and three to six large petals; sterile

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## Trees of Georgia: American sycamore—Continued from Page 4

stamens, present; ovaries, narrowed into bright-red styles.

**Fruit** is a persistent multiple of achenes, forming a head 1 inch in diameter, borne on slender stalks, 3 inches to 6 inches; achenes, elongated, obovoid, with a blunt apex and persistent style; seed, oval, yellow-brown. Twigs are slender, zigzag, orange-brown, becoming gray; terminal buds, wanting; lateral buds, conic or slightly curved, divergent, with a single, brown, resinous scale; leaf scars, horseshoe-shaped, surrounding the bud; bundle scars, five to nine, large, distinct; stipule scars, encircling the twig; pith, homogeneous.

The distinctive leaf of the American sycamore (*Plantanus occidentalis* Linnaeus) can grow big as dinner plates. Photo by Richard & Teresa Ware.

The most distinctive feature is the **bark**, which is thin, at first creamy white, becoming brown, and later mottled by the formation of large, deciduous, plate-like scales; inner bark, whitish or greenish; bark near the base of old trunks, becoming brown, furrowed, and scaly.

**Habitat and distribution:** Found on moist, rich soil on margins of streams and lakes or on rich bottoms, sycamore is found from southern Maine through New York to Ontario, Michigan, central Iowa, and eastern Nebraska; south to Texas and thence east to northern Florida.

**Uses:** The wood is not strong and has little resistance to decay, but is hard, tough, and the interwoven fibers make it practically impossible to split. Therefore, in early days it was used as primitive solid wheels for the ox cart. Later it was used for barber poles, wooden washing machines, lard pails, Pullman cars, stereoscopes, Saratoga trunks, piano and organ cases, phonograph boxes. And today it is used for crates, boxes and in some furniture manufacture, but the main use is for butcher's block, for it will take endless hacking without being split. It is also used as an ornamental tree and is good for planting along streams where the interlacing roots serve to retard erosion.

**Famous sycamores:** The Battlefield Sycamore, located on the State Capitol grounds in Montgomery, Ala., was dug and transported from the battlefields of Virginia by then Gov. Thomas G. Jones in 1893. The Cary Sisters Sycamore is a living monument to the talented poets, Alice & Phoebe Cary. According to the story on the way home from school in 1837, Alice thrust a freshly cut shoot of a sycamore into the ground near their back door and this shoot developed into a tree which still stands at 7000 Hamilton Ave., Cincinnati. Under The Daniel Byrnes Sycamore, on September 6, 1777, General Washington, Lafayette and staff met in council to plan strategy for the Battle of Brandywine. The Hale-Byrnes house is located at the intersection of Delaware Routes 7 and 4 in Stanton, Del. In July of 1782, on his way from Bethlehem, Pa., to Easton, N.J., General George Washington stopped to rest under the spreading boughs of a sycamore tree. The General Washington Sycamore still stands 1.5 miles south of Hope, N.J., on Route 521, and is 21 feet 8 inches in circumference. The largest Sycamore in Connecticut was dedicated in 1965 as The

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## Trees of Georgia: American sycamore—Continued from Page 5

Gifford Pinchot Sycamore, in honor of the chief of the U.S. Forest Service and its predecessor organizations from 1898 to 1910, and twice governor of Pennsylvania. The Glebe House Sycamore stands on the lawn of the Glebe House in Woodbury, Conn., where Samuel Seabury was selected the first bishop of the Protestant Episcopal Church in 1783. One of the Historic Trees of Williamsburg, Va.,an ancient sycamore, is one of the original plantings at the home of George Wythe, lawyer, educator, patriot, first professor of law at the College of William and Mary, friend and mentor to Thomas Jefferson, and a signer of the Declaration of Independence. On a visit to his ancestral home at Linwood, Md.. in 1929, President Herbert Clark Hoover, pointed out The Hoover Sycamore, planted by his forefather Andrew Hoover in 1740. The Liberty Tree in Newport, R.I. was dedicated in 1766 as a rallying monument in opposition to the Stamp Act of 1765, which taxed numerous items of commerce and transactions to help pay the expense of Britain's government of the colonies. Following an old custom, newly married Matthew Lowber and his bride planted "bride and groom" trees at the entrance of their new home. This was in 1774. The house still stands today, and so do The Lowber Bride and Groom Trees on the east side of U.S. 113A, adjacent to the fire hall, in Magnolia, Del. The Oysterponds Sycamore is said to have been standing on July 4, 1776, in what is now Orient, Long Island, N.Y.; is maintained by the Oysterponds Historical Society, and stands on the north side of Highway 25 at its junction with Youngs Road.

The fruit of an American sycamore (*Plantanus occidentalis* Linnaeus) is a persistent multiple of achenes forming a head 1 inch in diameter. Photo by Richard & Teresa Ware.

**Champion Sycamores:** The National Champion Sycamore is located in Ashland, Ohio, and has a circumference of 432 inches (36 feet), a height of 124 feet, and spread of 88 feet. The Georgia Champion Sycamore is located in Fulton County and has a circumference of 257 inches (21 feet 5 inches), a height of 110 feet, and a spread of 125 feet. ◙

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## BotSoc Intervention: Mulky Gap—Continued from Page 3

hundreds, if not thousands, of them in bloom from mid-to-late April and into early May. The author annually led trips here for BotSoc, the Benton MacKaye Trail Association, and his Over the Hill Hiking Group. But on April 19, 2021, the USFS did a prescribed burn at this location when the lady's slippers were already in bloom or fully formed. One hundred percent of them were burned in what the USFS described as a "hot fire." A scheduled BotSoc trip had to be cancelled by Webster. He reported this to then president, Dr. Bobby Hattaway.

Standing in the forest at Mulky Gap with struggling emerging pink lady's slippers, including a few with blooms, are from left: Dr. Bobby Hattaway; Steve Bowling (BotSoc); Dr. Steverson Moffat, District Ranger USFS; Clayton Webster (BotSoc), USFS; David Vinson, USFS wildlife biologist and fire manager, Lakemont District; and Charlie Gray, USFS Blue Ridge fire manager. Photo by Stephanie Byrne.

Bobby involved botanists and knowledgeable outdoor organizations in a three-state area to see if anyone had previously encountered a situation like this. This seemed to be a first. He contacted the USFS Blue Ridge District. Jimmy Rickard, Biologist and Forest Ecologist, took the lead for the USFS to try and determine how something like this could have happened and what needed to be done to prevent a reoccurrence in the future.

After a year of correspondence, then-acting District Ranger Dr. Steverson Moffat called a meeting of representatives from many government and outdoor organizations to be held at Mulky Gap on May 2, 2022. Seventeen people from the USFS, the Georgia Department of Natural Resources, the US Fish and Wildlife Service, the Athens Botanical Garden, BotSoc and several other organizations met at Mulky Gap. On this particular date, in a normal year, there might be thousands of pink lady's slippers in bloom. On this day we counted less than 20 blooms even though numerous small plants were emerging through the ground.

After an early struggle to get on the same page, USFS and other organizations agreed that the goal should be to see what could be done to prevent anything like this happening again. All agreed that fire is a good management tool, but not when such a special population as the pink lady's slippers is burned while in full bloom.

The very next day, Steverson Moffat recapped the meeting for all involved, including those invited but unable to attend. He assigned BotSoc members Bobby Hattaway, Hal Massie, and Clayton Webster to map the lady's slipper population boundary at Mulky Gap and along the Duncan Ridge Trail using a system compatible with the USFS computer system so that going forward, any future prescribed burn proposed in this area would only be done in the dormant season. Bobby recruited

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## Field Trip: Mulky Gap Revisited—Continued from Page 7

BotSoc veteran Steve Bowling to take the lead in the mapping project. On June 13, 2022, these four met at Mulky Gap with Jimmy Rickard of the USFS to successfully accomplish this project.

In the July 2022 issue of *BotSoc News*, in his farewell "President's Perspective" message to our society, Bobby said that during his tenure the thing he was most pleased about concerned our society's efforts to get the USFS to modify its approach to controlled burns at Mulky Gap. We have since provided USFS with GPS locations of other significant wildflower populations.

Clayton Webster, on the right leads the discussion at Mulky Gap. On the left is USFS Blue Ridge District Ranger Dr. Steverson Moffat. Photo by Suzy Downing.

Pictured are pink lady's slippers (*Cypripedium acaule*) in bloom, which years past bloomed in the hundreds—if not thousands—annually at Mulky Gap. Photo by Charles Seabrook.

Where does that leave us with Mulky Gap's recovery? Just hopeful.

Last year, with only less than 20 lady's slippers in bloom, we saw lots and lots of little baby plants coming up. That had us very hopeful for this year. This year, while there were over 100 plants in bloom, we saw almost zero young plants. That certainly was not a very promising sign that we would ever have a display like the ones we were used to seeing prior to 2021 when there would be a thousand or more in bloom.

Bobby contacted other experienced botanists in 2021 to see what they thought about a possible return, but no one seemed to have ever experienced such a burn when they were in full bloom. To me, that leaves us "just hopeful" that they will return to their former glory. With the USFS admitting it was a "hot fire," these tender plants may not have been strong enough to once again make the Mulky Gap display what it once was. ◙

## Roadside Botanizing: Yellow trillium

# *Yellow trillium: A sign of spring in the Smokies*

By **Rich Reaves**

Editor's Note: This is the third in a series of articles celebrating beautiful flowers that can sometimes be glimpsed along our area roads. Author Rich Reaves is a botanist, a frequent leader of BotSoc field trips (including hugely popular trips to view flora in the western United States), and an inveterate roadside botanizer.

Yellow trillium (*Trillium luteum* [Muhlenberg] Harbison). Photo by Rich Reaves.

Much like the orchids, there are many species of trillium that we may encounter along the roadside. Our first foray into this genus is my favorite one: yellow trillium (*Trillium luteum* [Muhlenberg] Harbison). To me this is the signature plant for spring in Great Smoky Mountains National Park, on the Tennessee side of the park, and it occurs along U.S. Forest Service Road 64 in the Cohutta Mountains, among other sites in northern Georgia. According to most write-ups, yellow trillium has a lemony smell. I have noticed that this fragrance is most obvious when sniffing plants that have been in the sun for a while and is much less obvious, if noticeable at all, in deep shade and early in the morning.

There are other trillium species that are showier, but none speak to me the same way as yellow trillium. Perhaps because for many years I saw it only while camping in the Smokies due to living outside its range. Yellow trillium evokes the tranquility, happiness, and generally overall good feeling that comes with being in the Smokies in the spring like no other plant. Now I get to see this plant regularly in Georgia and it always makes my day. ◙

## Getting Started: The Pitfalls of Tree ID

# Leaf persistence, hybrids make tree ID more challenging

By **Bobby Hattaway**

**Editor's Note**: This is the fifth installment in a series based on Bobby's The Pitfalls and Other Problems Associated with Tree Identification in Georgia. A sixth installment will appear in a future issue. For print copies of the entire series, including the full text and all 23 illustrations, contact Bobby via his email address, botanikman@g-net.net.

Woody Plant ID Problem #5: Leaf persistence. Keys often have the user to decide on whether the leaves are evergreen or deciduous, and I am not talking about conifers. Distinguishing deciduous from evergreen angiosperm species is not as easy as one might think. The further one goes toward tropical latitudes the more evergreen angiosperms one encounters. There is even a discernible difference in the number of evergreen species between north and south Georgia, with the latter having more evergreen woody species. The difference between old and new leaves on an evergreen is best illustrated by showing an example. The photo of dahoon holly (*Ilex cassine*) on the next page shows both old persistent leaves and new growth. This photo was taken

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## Getting Started: The Problems of Tree ID—Continued from Page 9


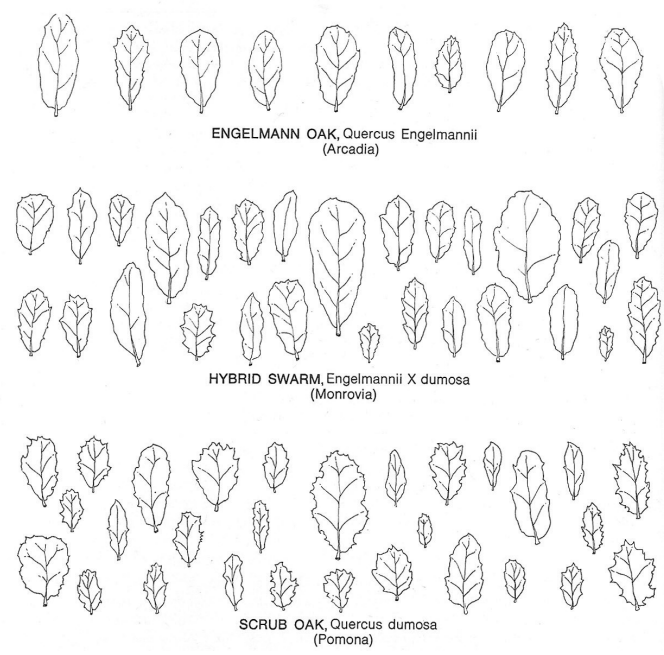


Illustration at top, the evergreen dahoon holly (*Ilex cassine*) has both new and old growth on the same twig. Photo by Bobby Hattaway. Above, oaks hybridize readily. Neighboring Engelmann (*Quercus engelmanni*) and scrub (*Q. ilicifolia* Wangenheim) oaks can produce a "hybrid swarm" of leaf shapes like those in the center group.

in the spring and telling the difference later in the season is not as easy. For non-spring times, look at last year's portion of the twig which is slightly behind this year's new growth. Except for oaks, leaves will only be on the current season's growth region of the twigs.

When it comes to leaf persistence, some of the problems are related to the few species that routinely have tardily deciduous leaves. That means that at least some leaves are slow to fall off. Three tardily deciduous species come to mind. They are sand live oak (*Quercus hemisphaerica*), summer titi (both i's are long) (*Cyrilla racemiflora*) and horse sugar or sweetleaf (*Symplocos tinctoria*). I elaborate on the last two species below under "The Remaining Impediments to Woody Plant ID."

Woody Plant ID Problem #6: Real hybrids. Oftentimes when someone can't decide on the ID, they "play" the hybrid card. In reality, except for certain groups that readily hybridize, successful hybrids are rare. I have saved this one for last because it is probably not significant unless you are dealing with oaks or hawthorns, which hybridize often. Species separation for some oaks can depend on simple habitat niches. Hollies hybridize often too, but few recognize that because the offspring seldom can get beyond the seedling stage (Greg Krakow, personal communication). Plus, what makes the oak example a good one is that the hybrids often back cross with one another and the original parents. The intergrading assemblage of plants is referred to as a hybrid swarm. This back-crossing pattern is called introgressive hybridization.

<u>The Remaining Impediments to Woody Plant ID</u>

For the last suite of problems with ID of woody plants, I have decided to number the plant groups (families or genera) or species (last two) instead of enumerating the problem features would-be identifiers run into. Not only have these few been my personal bane, but I have seen so many people, including students, struggle with them over and over again. All of these have alternate simple-leaves. Except for some of the species of holly (*Ilex*) which may or may not have teeth on the leaf margins, the others have mostly entire leaf margins. The other exceptions are two of the four

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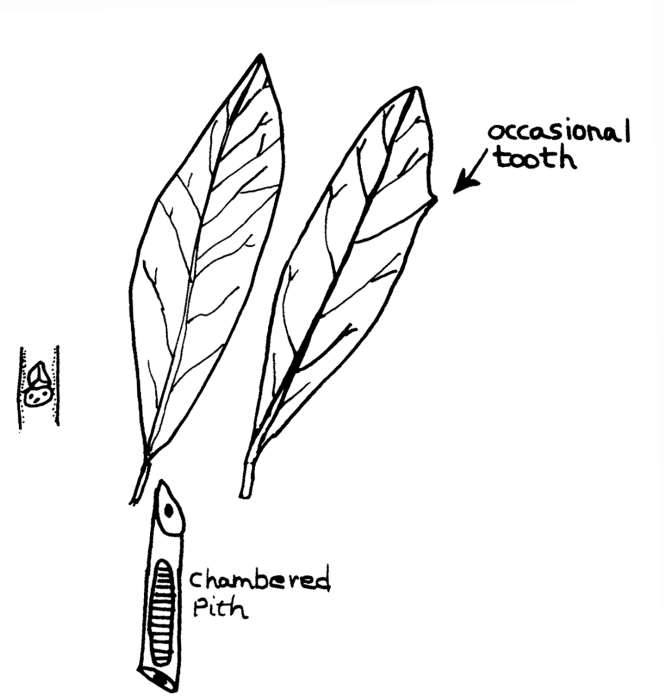
## Getting Started: The Problems with Tree ID—Continued from Page 10

species of tupelo (*Nyssa*) that have an occasional aberrant tooth or two in the upper half of the leaf. (See the illustrations on this page.) Though not in the perfect order of encounter difficulty, they are:

1) Most of the Heath family (Ericaceae) in the Southeastern United States and especially the Coastal Plain.
2) Members of the oak genus (*Quercus*) with entire-margined leaves (primarily here meaning neither lobes nor teeth).
3) Species of the holly genus (*Ilex*) without sharp-pointed lobes like those on American holly—but some have small marginal teeth [big gallberry holly (*Ilex coriacea*) and dahoon holly (*Ilex cassine*) may or may not have marginal teeth].
4) Species of the tupelo or black-gum genus (*Nyssa*), especially sterile specimens of the one upland species, black tupelo (*Nyssa sylvatica*).
5) Common persimmon (*Diospyros virginiana*).
6) Horse sugar or sweet leaf (*Symplocos tinctoria*).




Top and bottom illustrations: Two of four species of tupelo (*Nyssa*) may have an occasional aberrant tooth on the upper part of the leaf. Photo at top by Bobby Hattaway. Bottom drawing also by Bobby Hattaway.

Over the years I have wrestled with what to call this problem group. Here I will simply label them as the Magnificent Six (in contrast to the *The Magnificent Seven* – a classic American western movie). If I added summer titi or red titi (*Cyrilla racemiflora*), which used to be problematic for me, that would make it the Magnificent Seven. However, despite this plant being common in Georgia, I don't remember others complaining about identifying it.

All six (or seven, if you add summer titi) of these problem plants have one thing in common. They are relatively *non*-distinct in terms of form or structure (or morphology). In other words, when it comes to recognizing them most of the year, they have a sort of "blah" look to them. They are nondescript species that do not stand out much when not in fall color or when they are sterile (without reproductive features). ◙

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