Tree and Shrub Identification Made Simple

By Alice Brandon

FOREST PRESERVES of Cook County

IDENTIFYING SHRUBS AND TREES IN THE FOREST PRESERVES

This guide is useful for identifying woody plants you will find in the Forest Preserves of Cook County. ***"Woody" species are defined as plants whose stems and trunks survive above ground during the winter season.*** This is unlike herbaceous plants that might still be alive in the soil (roots) but the top of the plants dies back in the winter and must re-grow branches and stems each spring.

TIPS: Use your observation and sensory skills to thoroughly examine an unknown tree or shrub before you make an identification decision. Take your time and don't jump to conclusions.

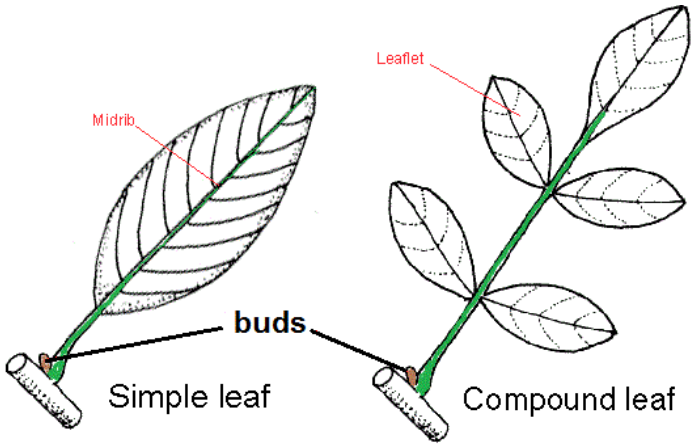
- **Avoid damaged leaves**
- **Examine multiple leaves and branches**
- **Observe the habitat where the tree is growing**
- **Smell the leaves (this might give you a clue)**
- **Touch the branches and leaves… are they soft or rough?**
- **Observe if the plant has thorns**
- **Does the plant have flowers, seeds or acorns…this may help you greatly**

Basic Plant Terminology

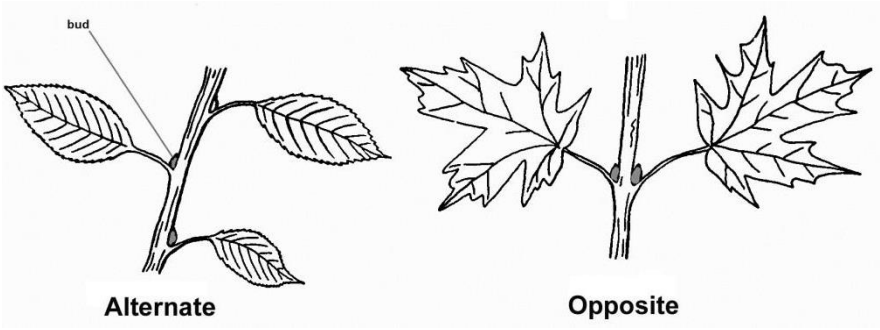
Before getting started with identifying woody species in the field, it's important to be familiar with basic plant terminology and woody plant growth structure. Plant identification books such as the "*Tree Finder" by May Watts* will use these terms to guide you through a series of questions to reach a conclusion on what species you are observing in the field.

The first two questions that must be answered to successfully identify the tree / shrub are:

1. Does the woody plant have compound or simple leaves? This is determined by finding where the bud is placed.

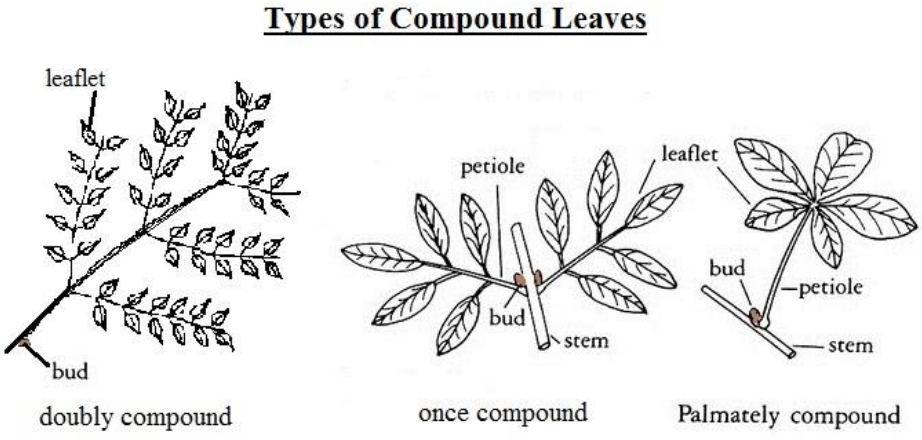


2. Are the branches arranged in an alternate or opposite pattern? There are far fewer species with opposite leaf structure. (If the tree has opposite branches, identification will be easier.)



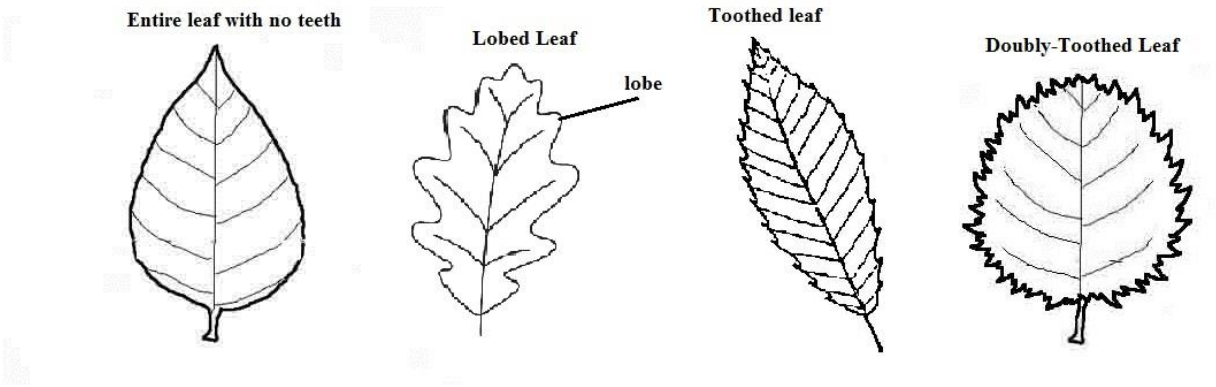
TIP: Opposite-branched trees often lose limbs and branches from diseases or big storms. Examine the whole tree before coming to a conclusion. At the very tip of new branches stems grow closely together. This can make it difficult to determine if the tree is opposite or alternative. In this situation, look at side branches and at the whole tree before making a final determination.

3. If you determine, your tree / shrub has compound leaves, then you will need to determine what type:

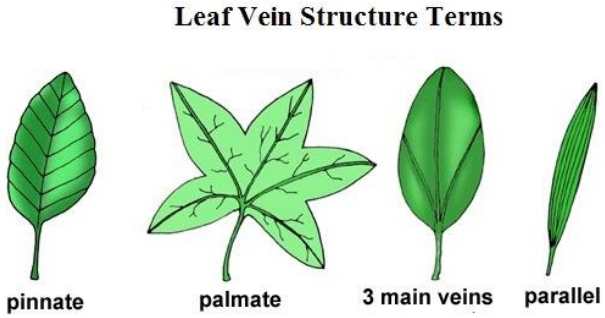


TIP: Compound leaves are less common in the preserves than simple leaves. The common tree species with compound leaves are: ash, hickory, locusts, black walnut and box elder.

Leaves come in all sizes and shapes. Below are basic terms used to describe leaves:



Leaf veins export sugars from the leaves down through the tree and import water and nutrients from the roots. Here are some of the common vein types:

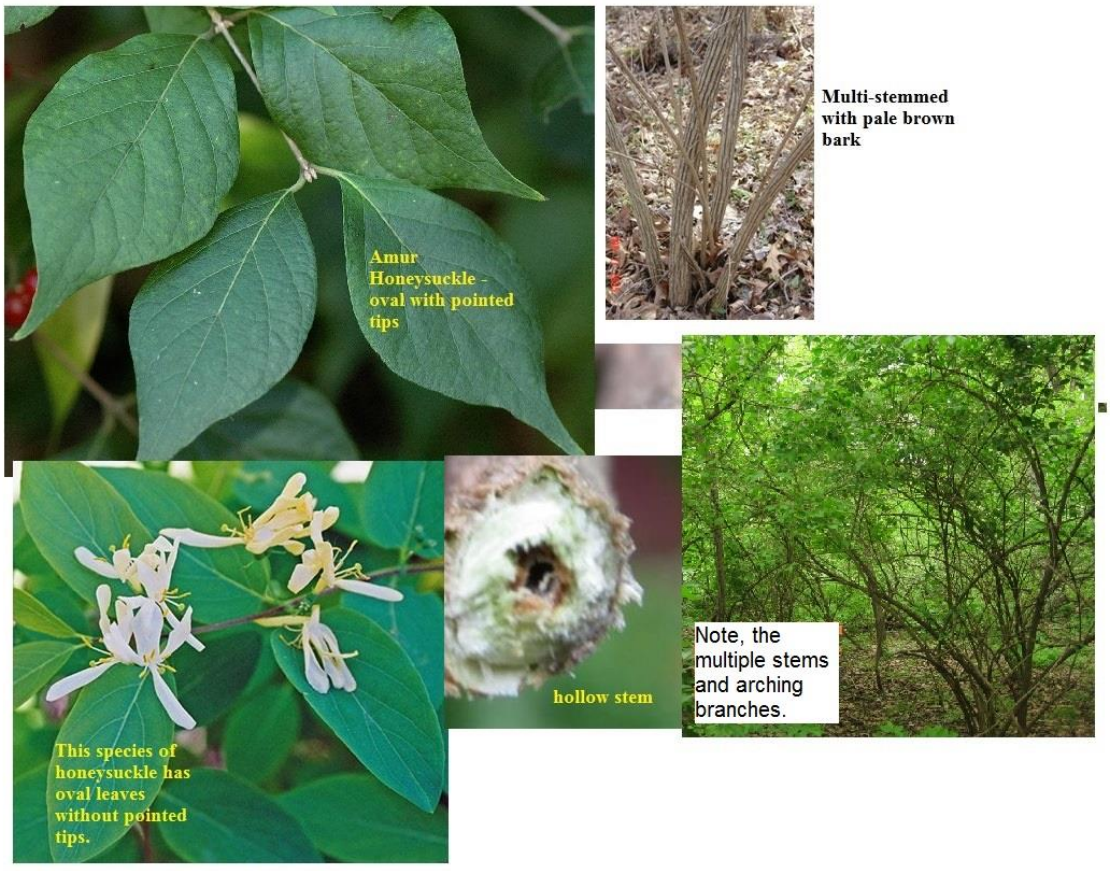


TIP: I have included the Latin names for the species listed in this guide. Learning scientific (Latin) names is useful for many reasons. For one, the Latin names can give hints as to what features the plant may have. Example: rubra means "red" in Latin. *Quercus rubra* is the Latin name for red oak. Secondly, different species of plants can have the same common name or one plant can have several common names. For example, the species of tree, *Ostrya virginiana*, is sometime called Ironwood but is also called hop horn beam, which can be confusing at best. See Appendix for additional Latin name tips.

PART ONE: COMMON INVASIVE WOODY SPECIES These are the most frequently encountered invasive shrubs and small trees you will be asked to identify and control. Learn these seven invaders and you will be a highly successful member of your team.

Bush Honeysuckle (*Lonicera* species)

- Shrub (multi-stemmed at base)
- Simple, **opposite** leaves
- Leaf entire, oval shaped or oval with pointed ends
- Bark is light brown to yellowish brown
- Old stems and branches are hollow in center
- Berries are red to orange
- Leaves (2 in. long) and doesn't have hollow stems



Locations: Most prevalent in the Palos region, where it is the dominant woody invasive shrub. Bush honeysuckles are the 2nd most common woody invasive group of the FPCC.

Potential Look-Alikes: Coralberry (a shrub native to central Illinois, uncommon Chicago region) looks somewhat similar but this species is low growing (2 ft. tall) and sprawling rather than upright, it has smaller leaves and pink colored berries.

Common Buckthorn (*Rhamnus cathartica*)

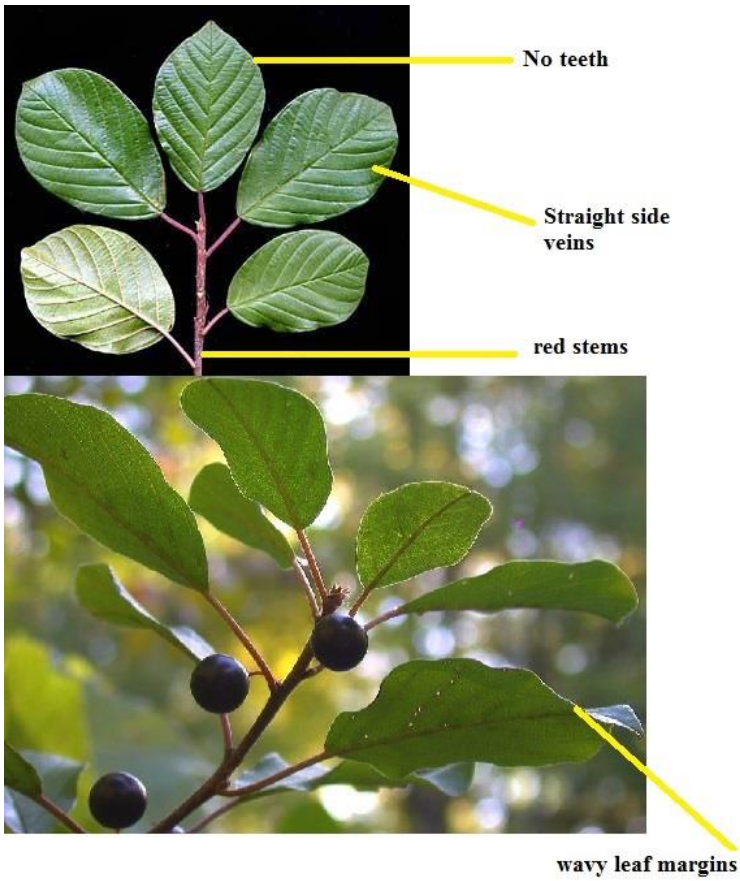
- Shrub or small tree
- Round leaves are **sub-opposite**, toothed, usually dark green
- Small, weak "thorns"
- Deep pitchfork veins on underside (curved towards the leaf margins)
- Dark gray / black bark with orange under-bark.
- Sapling stems have lenticels (salted pretzel rod)

Locations: This is our most common invasive woody plant. It is especially dense along the North Branch of the Chicago River.

Potential Look-Alikes: Young black cherry trees also have "salted pretzel rod" but their leaves are alternate and lance-shaped not broad and rounded. Black cherry has no thorns, and no orange under their bark. The glossy buckthorn also looks similar because it has pretzel rod bark (see next page) but has entire leaves.

Glossy Buckthorn (*Rhamnus alnus or Rhamnus frangula*)

- Shrub or small tree (12 ft.)
- **Alternate** entire leaves with wavy margins
- Leaf stems often reddish (can be green)
- Prefers moist habitats
- Gray bark with lenticels (salted pretzel rod)
- Bright orange under-bark

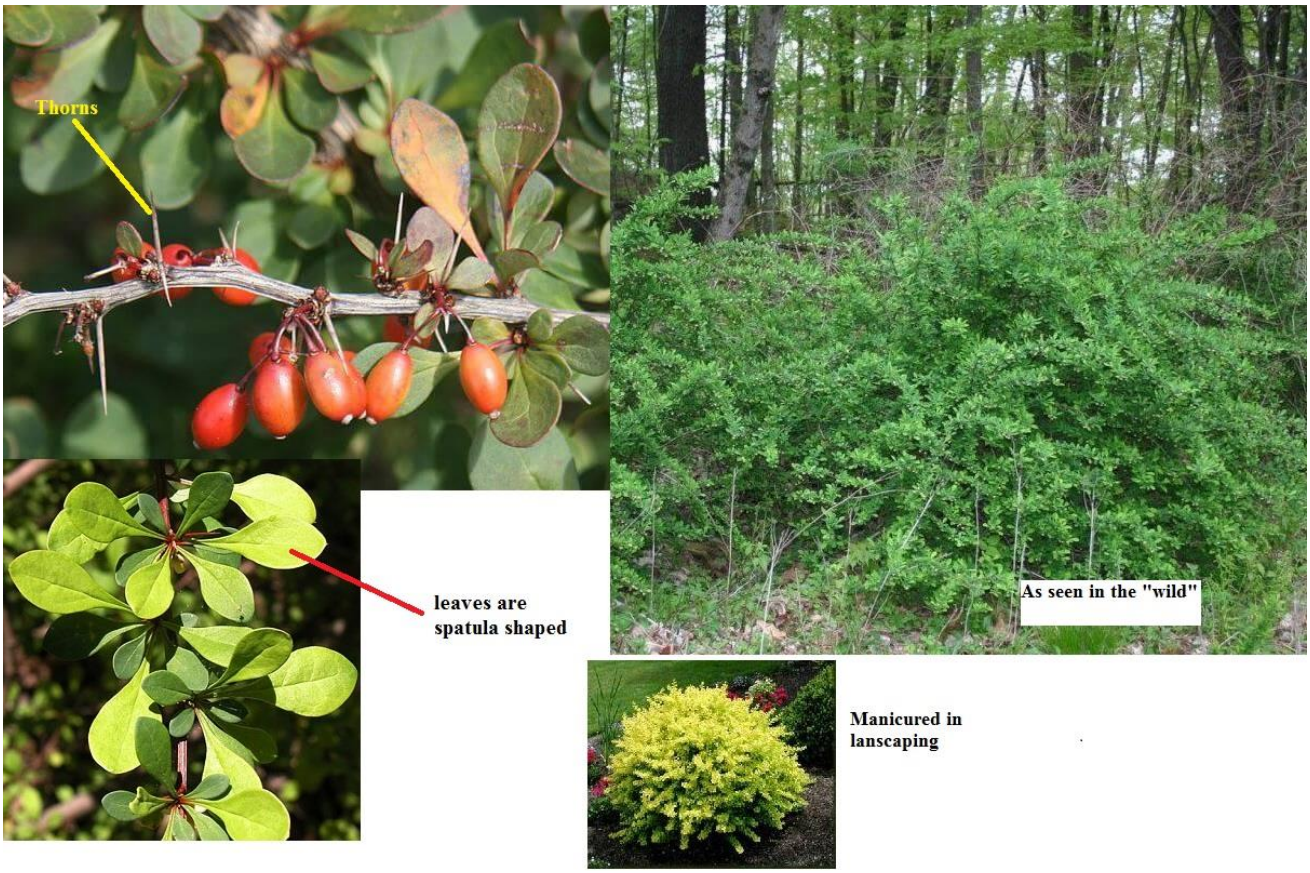


Locations: This species is less common than common buckthorn. It is most frequently seen in wet woodlands and prairie habitats in the Calumet region.

Potential Look-Alikes: Young black cherry also has the "salted pretzel rod" bark (lenticels) but the leaves have teeth and are lance shaped. See part two for pictures and a description of black cherry.

Japanese Barberry (*Berberis thunbergii*)

- Multi-stemmed bushy shrub (2-8 ft.)
- Tiny leaves, oval to spatula-shaped (green or reddish-purple)
- Sharps spines /thorns
- Bright red berries (fall)

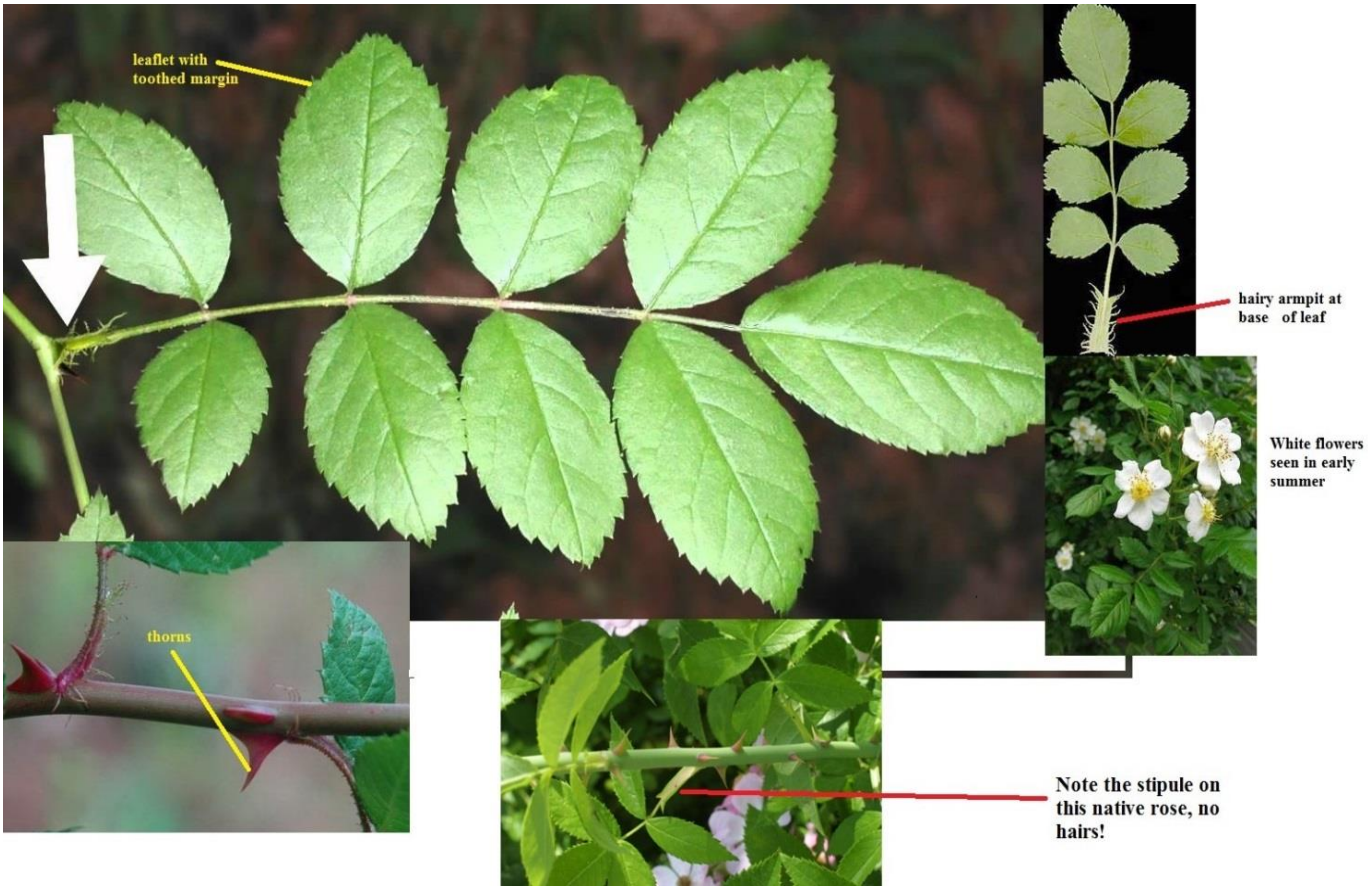


Potential Look-Alikes: none, easy to identify.

Locations: Prevalent in the Palos region and some areas of the Calumet region and quickly becoming a problem in other areas. Used extensively in landscaping, take a walk down your street and you'll find it!

Multi-Flora Rose (*Rosa multiflora*)

- Thorny, multi-stemmed shrub
- Compound with toothed leaflets (5-11)
- Each leaf stalk has a "hairy arm pit" (stipule)
- Showy white flowers in spring; red rose hips in fall

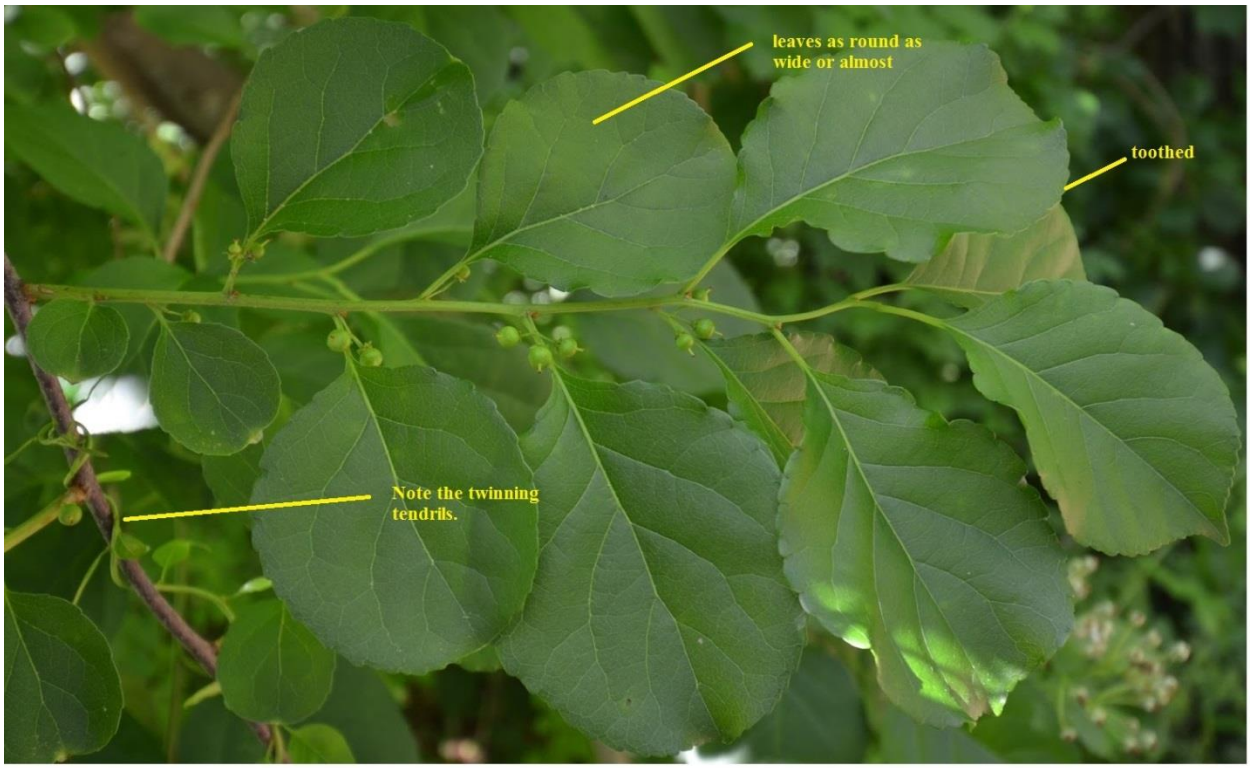


Locations: Common throughout the preserves in woodlands.

Potential Look-Alikes: There are many native roses to watch out for but none have "hairy armpits" or curved thorns.

Oriental Bittersweet (*Celastrus orbiculatus*)

- Woody vine (can cover ground / climb trees)
- Alternate, toothed leaves (almost as long as wide)
- Vines twine and wrap tightly around trees and other plants
- Red-orange seeds (fall)



twinnig and covering the ground

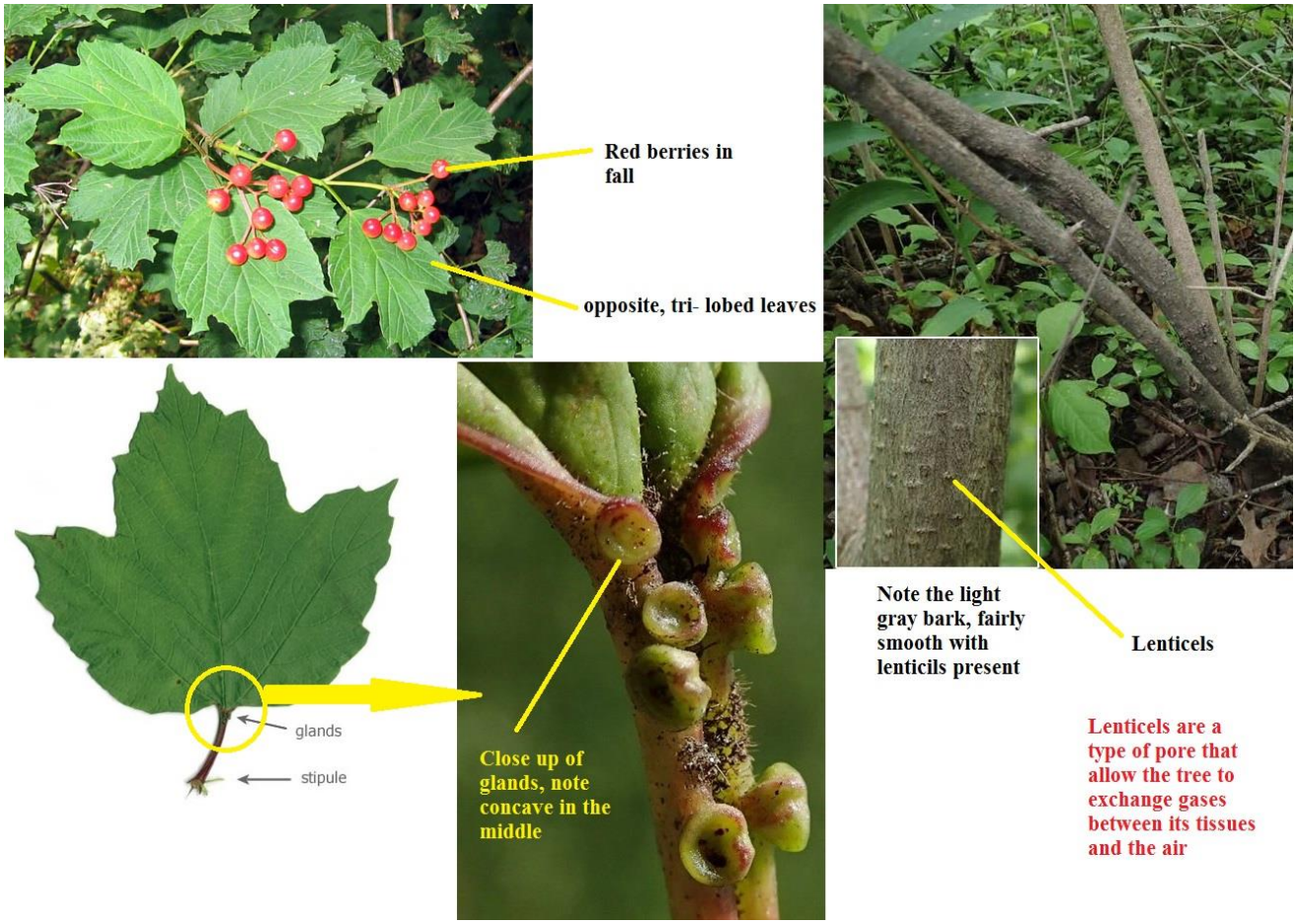
ripe berries in late fall

Locations: Can cover large areas in the Palos, Calumet and Spring Creek regions. Found throughout the county.

Potential Look-Alikes: There is a native bittersweet, but it is uncommon and the leaves are twice as long as wide. Its berries grow at end of twigs. In contrast, berries on oriental bittersweet grow along the branches.

European High Bush Cranberry (*Viburnum opulus*)

- Multi-stemmed shrub
- Leaves opposite, palmately-lobed (resemble a maple leaf), tri-lobed
- **Distinctive glands on leaf stem**
- Prefers moist woodlands



Locations: Prevalent at Dan Ryan Woods. Found at other sites but not in high densities, however, it is important to know and eradicate so it doesn't become a larger problem.

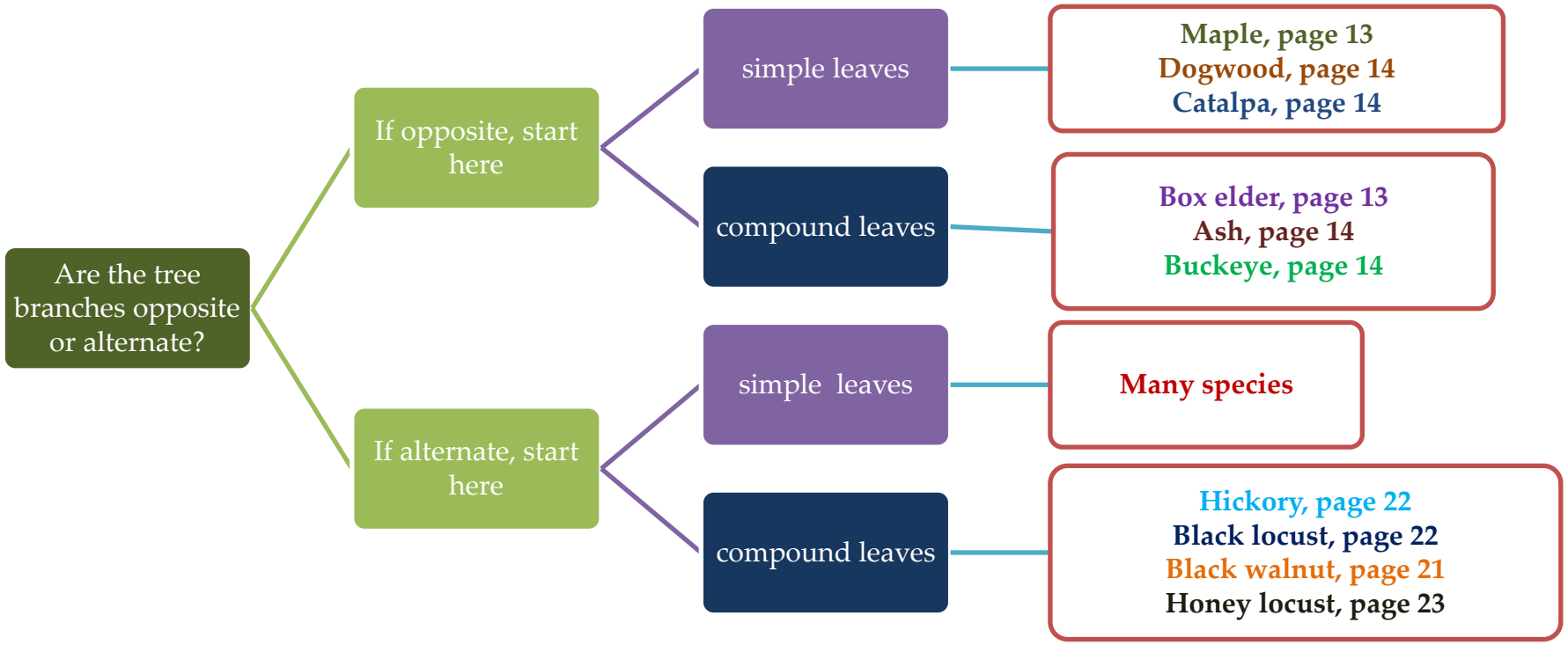
Potential Look-Alikes: The leaves resemble sugar maple, however, sugar maple doesn't have glands on the leaf stems, has 5 lobes not 3, and are trees not shrubs with multiple stems at the base.

PART TWO: COMMON NATIVE TREES OF THE FOREST PRESERVES

These are the trees you are most likely to encounter in the Forest Preserves. This is not a comprehensive list (there are over 100 species present), but is a good place to start and master before learning other trees. Suggested further reading and tree identification books are listed in the appendix.

Opposite Branched Trees	**Alternate Branched Trees**
Maple (Silver, Sugar and Box elder) Ash Dogwood (small trees and shrubs) Ohio buckeye Catalpa	*A. Simple Leaves* American basswood Black cherry Cottonwood Elm (American and Slippery) Hackberry Hawthorn Mulberry (Red and White) Sycamore Oak (White, Swamp, Bur, Red, Black, and Pin) *B. Compound Leaves* Black walnut Black locust Hickory (Shagbark and Bitternut) Honey locust

Tree Key for this Guide



Opposite Leaved Trees – Simple and Compound

TIP: Use this saying to help with remembering opposite-leaved tree species: "MAD Bucking Horse Charges"
M = maple
A = ash
D = dogwood
Bucking = buckeye
Horse = horse chestnut (not found in the FPCC)
Charges = catalpa

Maple (Acer species)

Silver Maple

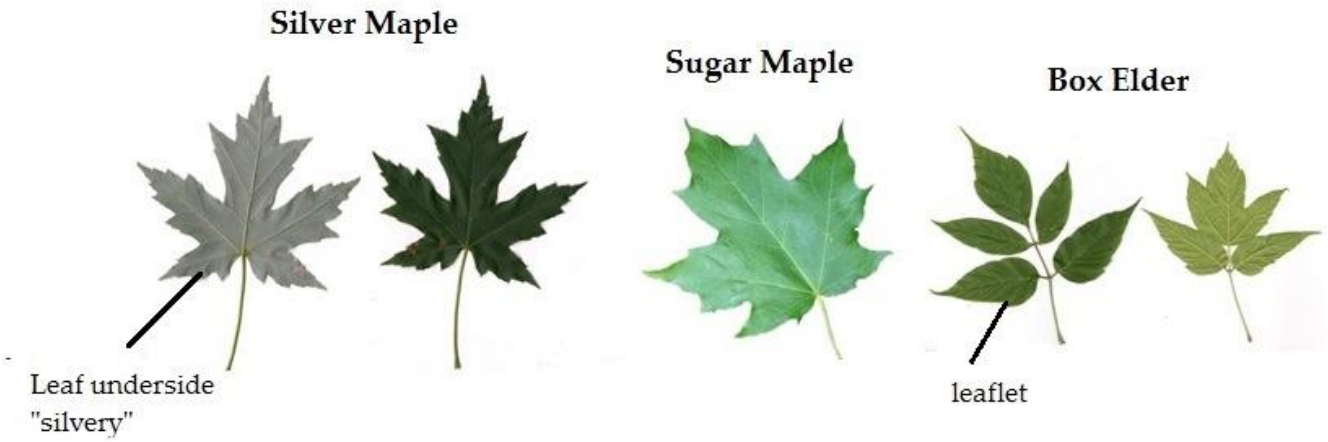
- Prefers moist woodlands, streams
- Deeply cut lobes

Sugar Maple

- Looks like Canada's flag

Box Elder

- Compound leaves, 3-7 leaflets
- Saplings sometimes confused with poison ivy
- Young stems bright green
- Lives in disturbed habitats, especially along streams



Ash (*Fraxinus* species)

- Compound leaves, leaflets lance shaped
- Bark has diamond pattern (large trees)
- Multiple species, most common green ash
- Declining due to Emerald Ash Borer

Dogwood (*Cornus* species)

- Small trees and shrubs
- Opposite simple leaves with no teeth
- Leaf veins curve out towards leaf edge
- **Silky connectors** in leaves when torn **(unique)**
- Common in prairies (can be aggressive)

(Ohio) Buckeye (*Aesculus glabra*)

- Leaves **compound and palmately lobed unique**
- Distinctive prickly fruit

Northern Catalpa (*Catalpa speciosa*)

- **Large, heart-shaped leaves**
- Long distinctive seed pods ("big green bean")
- Native downstate (rare preserves)
- Popular neighborhood street tree

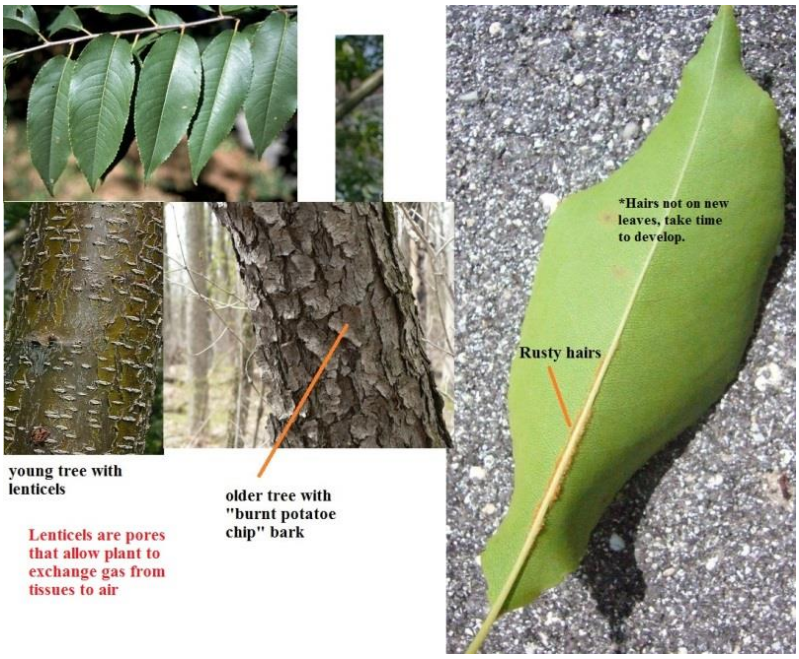
Alternate Leaf Tree Species – Simple Leaves

American Basswood or Linden (*Tilia americana*)

- Large leaves (8 in. long), heart-shaped, lopsided base
- Often **multi-stemmed tree (unique)**
- Prefers moist woodlands along rivers and streams
- Winter buds bright red

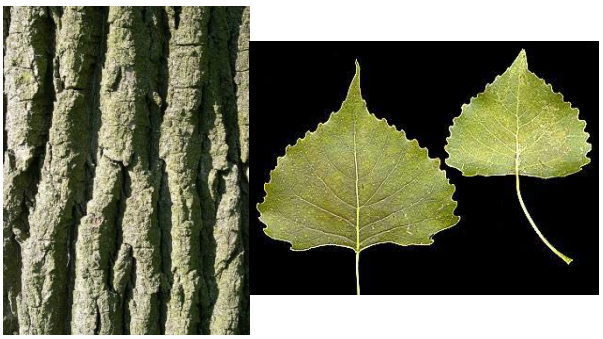
Black Cherry (*Prunus serotina*)

- Toothed leaves (longer than wide)
- Leaf underside has **rusty hairs along main vein**
- "**Burnt potato chip bark**"



Cottonwood (*Populus deltoides*)

- Triangular shaped leaves (flat base)
- Light brown, deeply-furrowed bark (old)
- Wind-pollinated with "cotton" like seeds
- Common along streams, wet areas

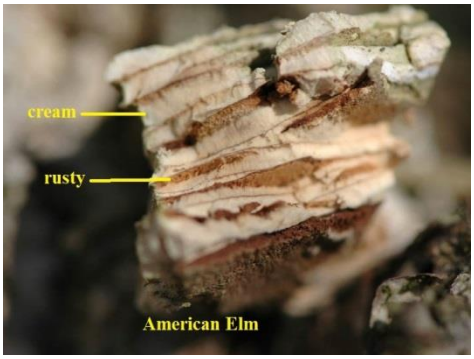


Elm (*Ulmus* species)

- Simple pinnately veined leaves (lopsided bases)
- Leaves doubly toothed

American Elm (*Ulmus americana*)

- Under bark has layers of cream and rusty colors…"patriotic"
- Mildly rough leaves



Slippery Elm (*Ulmus rubra*)

- Under bark layers are only rusty layers
- **Leaves feel like sandpaper**

Hackberry (*Celtis occidentalis*)

- Simple, toothed leaves (lopsided heart-shaped bases)
- **Distinctive " warty" bark**


Young hackberry bark

older hackberry bark

Hawthorns (*Crataegus* species)

- Sharp, pointed thorns
- Simple, toothed leaves (some species also have shallow lobes)
- Leaves get a fungus that forms yellowish spots (rust)
- Shaggy, loose appearing brown bark

Mulberry Tree *(Morus species)*

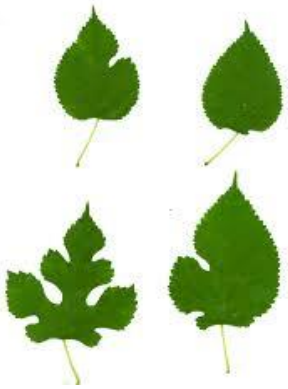
Simple, toothed leaves. Some leaves are entire but others have lobes

Red Mulberry (*Morus rubra*)

- Hairs on underside of toothed leaves
- Most leaves unlobed with heart-shaped bases

White Mulberry (*Morus alba*)

- No hairs on leaf underside or if present, only on main vein
- Lobed and unlobed leaves of diferent shapes on the same tree (distinctive)

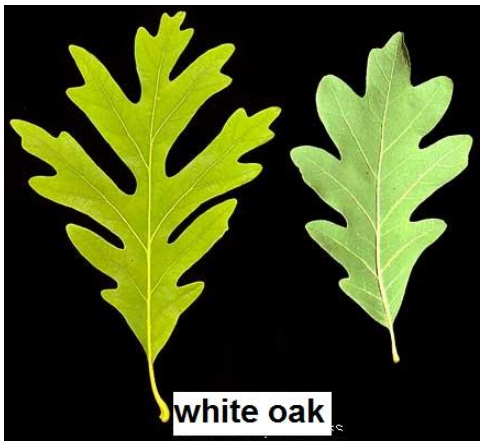


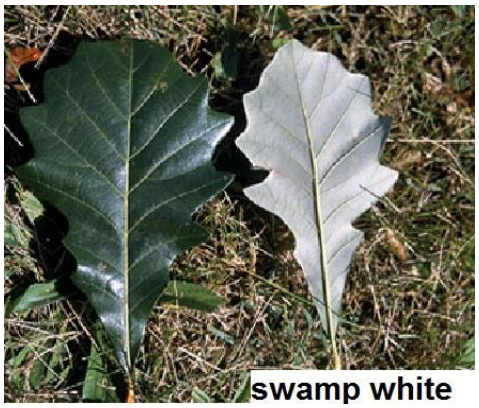
American Sycamore (*Platanus occidentalis*)

- Large, simple leaves with 3-5 shallow lobes.
- Bark sheds to reveal "white" bone **"sick" appearance**
- Lives along streams

COMMON OAK SPECIES OF THE PRESERVES		
There are many Oak species, making them hard to identify but fortunately only a few common ones found in the FPCC. They are separated into 2 major groups. These species are the dominant trees of our woodlands and savanas.		
	Habitat	**Tips**
A. White Oak Group – no bristle tips		
Swamp White Oak (*Quercus bicolor*)	Wetlands and swampy areas	Dense hairs on the underside of leaves, acorns have long stems
White Oak (*Quercus alba*)	Mesic habitat (in between wet and dry)	White bark, as it gets older, bark forms large flakey plates that look like they might fall off
Bur Oak (*Quercus macrocarpa*)	Most adapted to fire, lives well in prairies and dry habitats but also found in woodlands	Dense, craggy bark. The leaves are indented almost to the mid-vein at the center of the leaf, makes the leaf look like a "witch"
B. Red Oak Group – bristle tips		
Red Oak (*Quercus rubra*)	Mesic habitat (in between wet and dry). Common in woodlands	Glossy leaves. Bark is grayish when large. Has "ski" tracks along with bark. Glossy, angled buds. Acorns are large and look like a frenchman wearing a beret
Black Oak (*Quercus velutina*)	Dry habitat. Does well in sandy soils. Also seen in Woodlands.	The leaves are waxier than the Red oak but can be hard to differentiate from Red oak. The buds are usualy densly hairy and grayish. The acorn caps have fringed, loose edges. Dark bark
Pin Oak (*Quercus palustris*)	Swampy places, not common in the preserves	Tiny leaves, shiny and waxy. Acorns are also "tiny". Lower branches often angle downward, narrow canopy

White Oak Group – No bristle tips





White Oak Acorns

acorn tends to be oblong rather than rounded

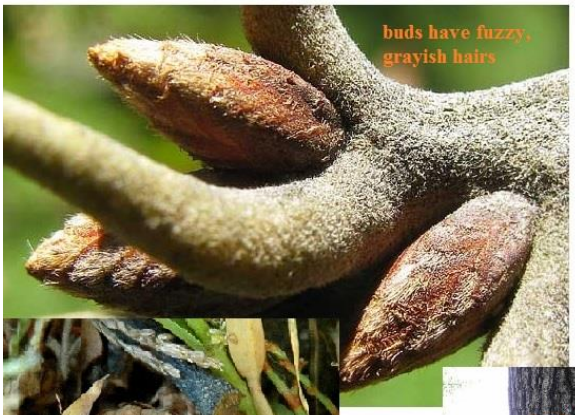
Swamp White Acorn

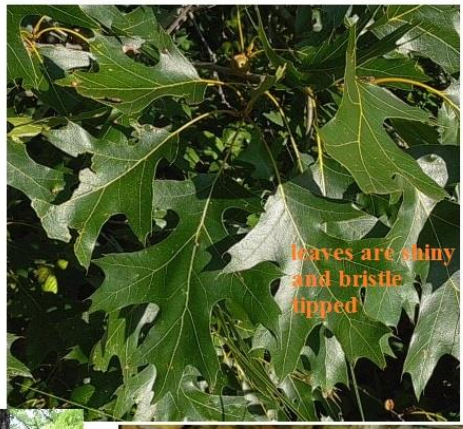
Bur Oak Acorns

acorn cap envelops the acorn and has shaggy ends

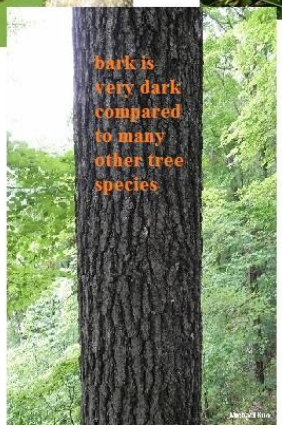
Red Oak Group – Bristle Tips

Black Oak





cap's edge is "fringed" and appears loose



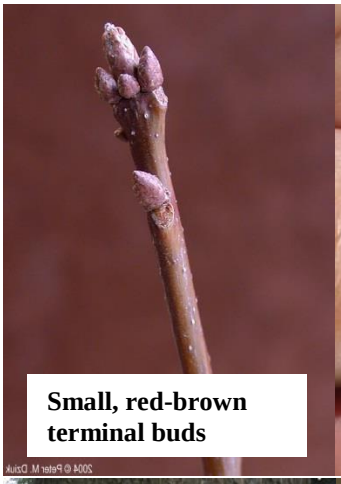
shiny smooth buds

Red Oak

gray, ash colored bark when old

middle aged trees

Pin Oak



Small, red-brown terminal buds

Very small, flat shallow cap, round acorn

Dark green, shiny, waxy leaves with bristle tips

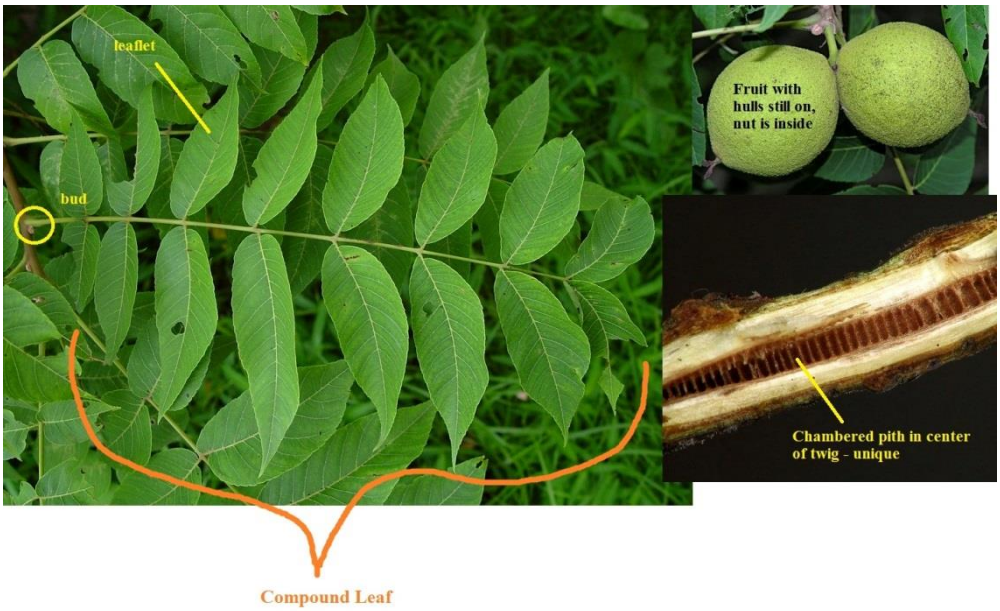
Slightly ridged, shallow furrowed. Dark gray-gray-brown bark

Deep, U-shaped sinus

Alternate Leaf Tree Species – Compound Leaves

Black Walnut (*Juglans nigra*)

- 15-23 leaflets, pointed tips, pinnately veined
- Leaves aromatic when crushed (lemony smell)
- Nut trees
- Stems with chambered pith (see picture)



Black Locust (*Robinia pseudoacacia*)

- 7-21 leaflets (no teeth, oval-shaped)
- **Pair of spines (distinctive)**
- Furrowed light brown bark
- Introduced from southern U.S. **(considered invasive)**

Hickory (*Carya* species)

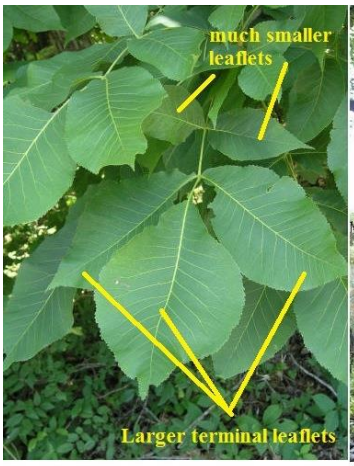
- 5-9 leaflets (for species found here)
- The 3 terminal leaflets are larger than the other leaflets
- Nut trees

Shagbark Hickory (*Carya ovata*)

- Distinctive shaggy bark
- 5-7 leaflets with teeth
- Large buds

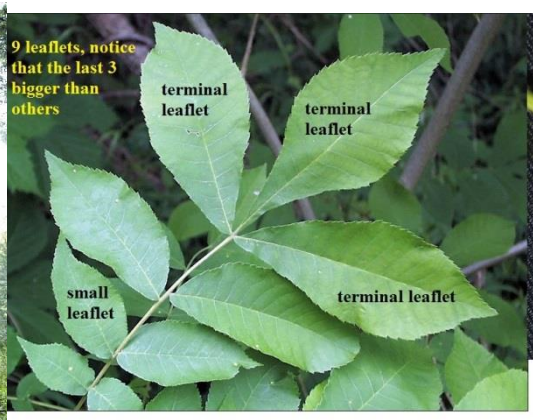
Bitternut Hickory (*Carya cordiformis*)

- 7-9 leaflets with teeth
- Mustard yellow buds (distinctive)
- Small nuts



Distinctive "shaggy" bark

Shagbark Hickory

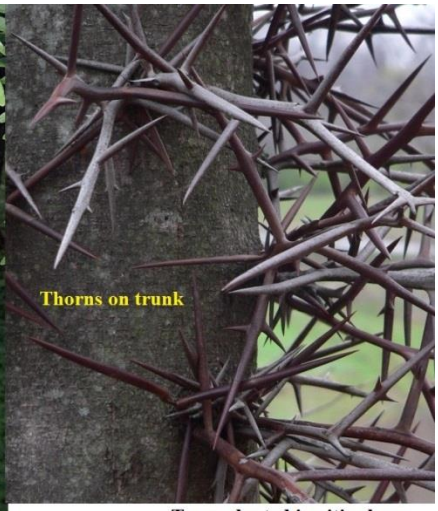


Distinctive Mustard Yellow Buds

Bitternut Hickory

Honey Locust (*Gleditsia triacanthos*)

- Once compound or doubly-compound, leaflets, oval, no teeth
- Many leaflets!
- Dark brown bark
- Common street tree, tolerant of air pollution
- Pea family (seeds resemble green bean)



Trees planted in cities have been bred without thorns

Honey Locust

APPENDIX

Common Scientific (Latin) names with their English Meaning:

Latin Term(s)	English Meaning
Alba	White
Bicolor	Two-colored
Deltoides	3-sided
Nigra	Black
Palustris	Swampy or marshy
Rubra, Rubrum	Red

Suggested Guides & Further Readings

- **"Tree Finder" –** May Theilgaard Watts ($6; fits in pocket)
- **"Michigan Trees" –** Burton V. Barnes and Warren H. Wagner, Jr. ($20 in-depth book)
- **"Forest Trees of Illinois" –** Jay C. Hayek and Robert H. Mohlenbrock (Available on the University of Illinois Extension website: https://pubsplus.illinois.edu/C1396.html $12)