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UT Extension

PB1756

The All Season Pocket Guide To
Identifying Common Tennessee Trees

SUMMER/WINTER
TREE IDENTIFICATION

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TENNESSEE FORESTRY DEPARTMENT OF AGRICULTURE

The All Season Pocket Guide To

Identifying Common Tennessee Trees

Written by:
Michael D. Williams
Area Forester
Tennessee Division of Forestry

Edited by:
Wayne K. Clatterbuck
Associate Professor
University of Tennessee
Forestry, Wildlife and Fisheries

Photographs by:
Russ Cox
Nathan Waters
Mike Williams

Illustrations taken from:
Common Forest Trees of Tennessee
10th edition 1965, (used by permission)
or drawn by Mike Williams

2005

PREFACE

This booklet was prepared by professional foresters to help you identify Tennessee's most common trees. It is designed to go to the woods with you (where it is needed) by comfortably riding in your back pocket, pack or cruiser's jacket. Enjoy!

USEFUL TIPS

1. Get ready for variability! Tree leaves may vary in size on the same tree. Leaves growing in the shade are often much larger than leaves exposed to full sun.
2. Some trees may have more than one leaf shape growing on the same tree.
3. Learn bark characteristics and tree shape as quickly as possible. Leaves are not present on many trees at least half of the year.
4. Tree bark is oldest, thickest and roughest at the base of the tree trunk and youngest, thinnest and smoothest on the branch tips. There is usually a slow transition in bark pattern and thickness between the two points.
5. Use all of your senses. Some trees may have a unique smell, taste or feel that helps in identification.
6. If necessary, supplemental identification clues can be gathered from the leaves, twigs and fruit lying on the ground under the tree. Always remember that these items may have come from a neighboring tree.
7. To identify trees not listed in this book, collect or photograph samples that include several leaves and buds, then go to the Internet or other ID books to make the identification. State, university and USDA Forest Service Web pages are usually the best Internet tree identification sites.
8. Relax and have fun. Even the best professional foresters occasionally have trouble identifying trees.

Poison Ivy Alert

POISON IVY− Poison ivy is a common forest vine that grows along the ground and often climbs trees. When it climbs a tree it sometimes becomes so large and thick that it can be misidentified as being part of the tree. Climbing poison ivy vines are dark gray-brown, very "hairy" looking, and closely attached to the supporting tree. The many closely spaced branches of the vine may reach out 3 feet or more from the tree. The vine may climb 20 feet or more up the tree. **Poison ivy leaves are attached to the branch in clusters of three leaflets**. Leaflets average 3−5" long and 2−4" wide. **They may be toothless, have a large tooth-shaped lobe on one side, or have one large tooth-shaped lobe on each side.**

foliage

vine climbing tree

Contact with almost any part of the plant any time of year can cause the skin to break out in a severe, itchy rash. Avoidance is the best protection.

Virginia creeper is also a common vine that climbs forest trees, but human contact does not normally cause a rash. Virginia creeper has five leaflet cluster leaves and is often wrongly called poison oak. It is harmless.

Tennessee Terrain

Some trees can be found growing on many different sites. But, most trees prefer to grow in places that suit their particular needs. Almost all trees like to grow in the deep, well-drained soils of flat to easy rolling land. But, some grow in wet places; some in moist, well-drained coves, hollows or north-facing slopes; and some on hot, dry ridge tops and warmer, south-facing slopes. Knowing which trees are most likely to be encountered in different parts of Tennessee and on given sites can help speed up proper identification. Check the following guides to find the trees most likely to be encountered on any given site in Tennessee.

Trees Likely to Be Found Growing On Well-Drained Land

ash	beech	black cherry
black oak	black walnut	blackgum
bur oak	cottonwood	flowering dogwood
hackberry	hickory	locust
pecan	persimmon	red maple
river birch	sassafras	scarlet oak
shingle oak	shortleaf pine	southern red oak
sourwood	southern red oak	sugar maple
sugarberry	swamp white oak	Virginia pine
white oak	white pine	

Trees Likely to Be Found Growing In Swampy Areas and Beside Streams

ash	baldcypress	beech
boxelder	cherrybark oak	cottonwood
hemlock	mulberry	Nuttall oak
overcup oak	pin oak	red buckeye
red maple	river birch	Shumard oak
swamp chestnut oak	swamp white oak	sweetgum
silver maple	sycamore	water oak
willow oak	yellow-poplar	

Trees Likely to Be Found Growing in Deep, Well-Drained Coves

ash	beech	black cherry
black oak	black walnut	blackgum
chinkapin oak	elm	hemlock
hickory	northern red oak	red maple
scarlet oak	shortleaf pine	Shumard oak
white pine	yellow-poplar	

Trees Likely to Be Found Growing on Dry, South-Facing, Middle Slopes

ash	black oak	blackgum
blackjack oak	chestnut oak	chinkapin oak
eastern redcedar	hackberry	hickory
loblolly pine	locust	post oak
red maple	scarlet oak	shortleaf pine
sourwood	southern red oak	sugarberry
Virginia pine	white oak	

Trees Likely to Be Found Growing on Dry Ridge Tops

ash	black oak	blackjack oak
chestnut oak	eastern redcedar	hickory
loblolly pine	post oak	red maple
scarlet oak	shortleaf pine	southern red oak
Virginia pine		

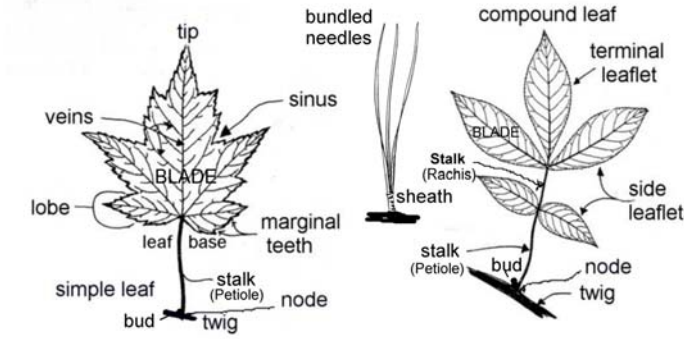
Summer Leaf Key

<u>Definitions Needed to Understand Tree Key</u>

The following terms need to be understood to use the tree guide.

1. Opposite growth pattern − Twigs and/or leaves are attached to the limb directly across from one another.
2. Alternate growth pattern − twigs and/or leaves are attached to the limb in a zigzag pattern where the attachments on either side are not directly across from one another.
3. Simple leaf − A leaf that has only one leaflet attached to the tree limb.
4. Compound leaf − A leaf that has two or more leaflets attached to a central leaf stem that is in turn attached to the tree limb.
5. Bristle tip − The portion of the leaf that projects out from the central leaf like a finger on a hand.
6. Lobe spikes − Needle-like point sticking out at the end of each lobe.
7. Leaf sinus − The dip in the leaf between the lobes.
8. Toothed margin − Coarse to fine-toothed edges.
9. Needle − Long, thin leaf shaped like a sewing needle.

Simple leaf Needle leaf Compound leaf



Leaf Key to Trees
Common in Tennessee

Leaves are needle-like or scale-like **(go to 1)**
Leaves are broad, flat and mostly deciduous **(go to 2)**

1
Needle-Like or Scale-Like Leaves
eastern redcedar, southern yellow pines,
white pine, hemlocks, baldcypress

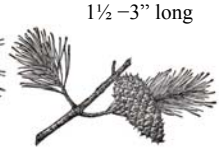
1a - Very small blue-green scale-like leaves growing on all four sides in tight aromatic prickly top.
eastern redcedar (page 29)

1b - Needles growing in bundles with two to three needles in each bundle.
southern yellow pines (pages 45, 47, 51)

loblolly pine
three needles
6−9” long

shortleaf pine
two and three needles
3−5” long

Virginia pine
two twisted needles
1½ −3” long



1c - Soft, flexible, blue-green needles, 3 − 5” and growing in bundles of five. Each needle has white lines along the length of the bottom edge. Dark gray-black bark; limbs growing from trunk at distinct intervals in whorls.

eastern white pine (page 36)

1d - Flat needles are ½–¾” long with blunt ends. Two parallel pale blue lines often present, along the bottom of each leaf.. Needles lay flat (eastern). Needles stick out in all directions (Carolina).

hemlocks (page 32)

eastern hemlock **Carolina hemlock**

1e - Needles are lime green to yellow-green ½–¾” long, growing feather-like in two rows along lateral branches. Needles stand on small pegs. Needles turn dull red and drop in fall, leaving stubby pegs on the branch.

baldcypress (page 41)

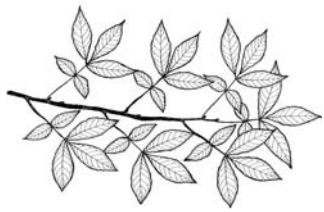
2
Leaves That Are Broad and Flat

2a. Leaves, buds and branches that have opposite arrangement with simple leaves (go to A).

2b. Leaves, buds and branches that have opposite arrangement with compound leaves (go to B).

2c. Leaves, buds and branches that have alternate arrangement with simple leaves (go to C).

2d. Leaves, buds and branches that have alternate arrangements with compound leaves (go to D).

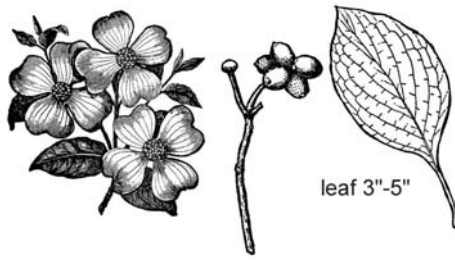


A
Opposite Arrangement Simple Leaves

flowering dogwood, red maple,
sugar maple, silver maple

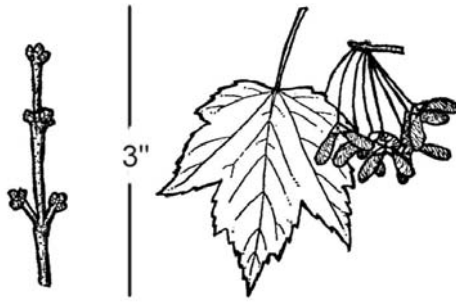
A-1 Dark green leaves are football-shaped, 3−5” long and 2−3” wide with smooth but wavy outer edges. The veins make pronounced sweeping upward curves from the center line of the leaf to the outside edge.

flowering dogwood (page 30)



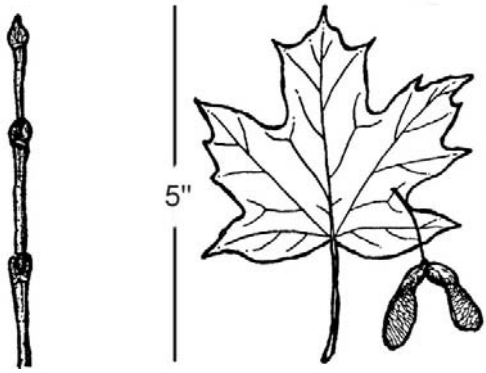
A-2 Smooth leaves with red petiole are 2½−4” in length and width with toothed edges along the lobes. Usually there are three large lobes and sometimes two more smaller lobes. The sinuses between each lobe forms a sharp V notch.

red maple (page 58)



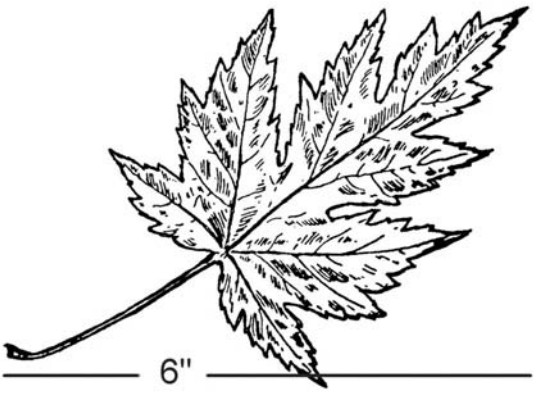
A-3 Smooth leaves are 3−5” long and wide with smooth edges along five main lobes that have pointed tips. Deep U-shaped sinuses between lobes.

sugar maple (page 49)



A-4 Leaves are 5−7” long and, deeply-lobed, with large marginal teeth, silvery beneath.

silver maple

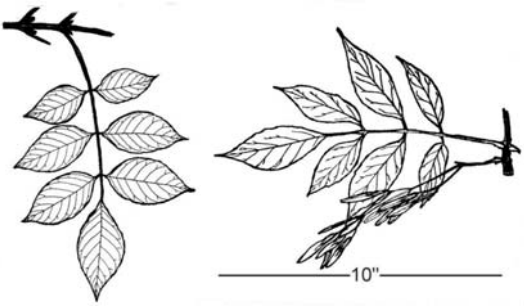


B
Opposite Arrangement Compound Leaves
ash, boxelder, buckeye

B-1 8−12” leaves have three to seven, 1½−4” long leaflets growing along the sides and on the end of the leaf stalk**.** Twigs ends look large and blunt. Green ash has a prominent bud nestled in the crotch between the twig and leaf. White ash has a small bud that is buried in the crotch and not readily visible to the naked eye.

ash (page 27)

green ash white ash

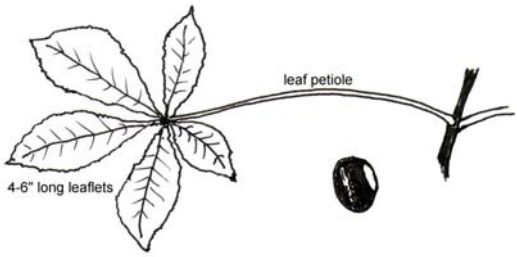


B-2 Leaves are 8−12” long and have 2−4” leaflets that have several shapes, with some jutting out to the side like pointed thumbs. Edges are toothed. Twigs are long, slender and often green.

boxelder (page 43)

B-3 Five leaflets that fan out like spread fingers from the same point at the end of the leaf petiole. Leaflets are bright green on top and yellow on the bottom. Edges may be both fine and coarse-toothed. If the crushed leaf or stem has a foul odor, the tree is **Ohio buckeye**. If the crushed leaf or stem has no odor, the tree is either yellow or red buckeye. **Yellow buckeye** grows to be a large tree and is not usually found in clumps. **Red buckeye** is shrub-sized with rounded shape and root sprouts forming clumps of new trees.

buckeye



C.
Alternate Arrangement Simple Leaves

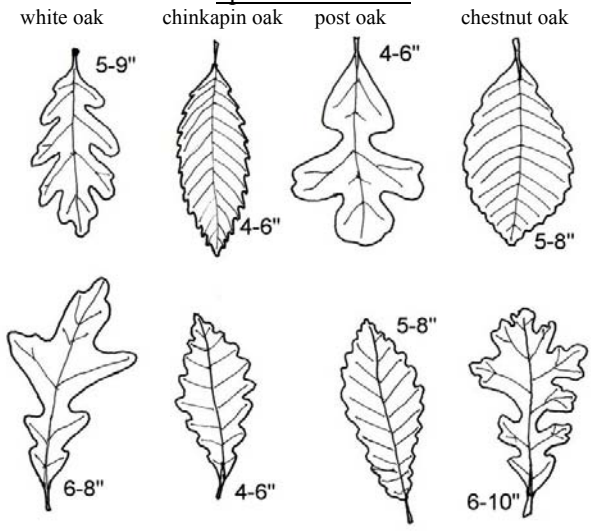
Leaves have rounded lobes (go to C-1)
Leaves have pointed lobes (go to C-2)
Leaves have no lobes (go to C-3)

C-1
Leaves have rounded lobes
white oaks, sassafras

C-1a Leaves are tough, varying in size and shape but almost always have the same number of rounded lobes or blunt teeth on each side of the leaf. The outside edge of the leaf is smooth, with the main leaf vein ending at the center of the center tooth or leaf lobe, while veins to the other teeth or lobes are at different places along the central vein.

white oaks (pages 44, 52)

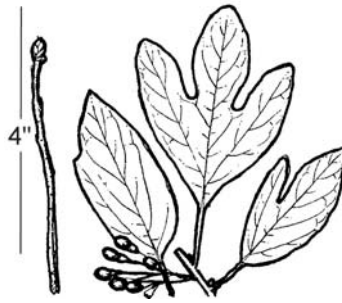
upland white oaks



lowland white oaks

C-1b Tree may have a mixture of 3−5” leaves having no lobes, two lobes or three lobes all growing together in the crown. Edges of the leaves are smooth, giving the lobed leaves the look of mittens. Crushed leaves have distinct orange peel fragrance.

sassafras (page 59)

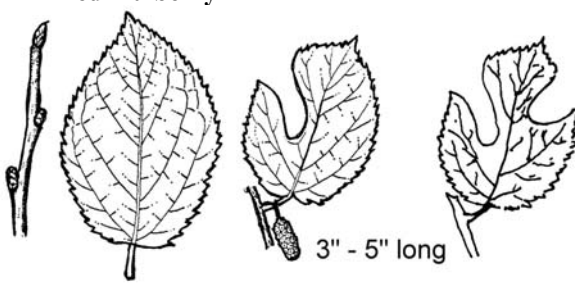


C-2
Leaves Have Pointed Lobes

red mulberry, yellow-poplar, sycamore, sweetgum, red oaks

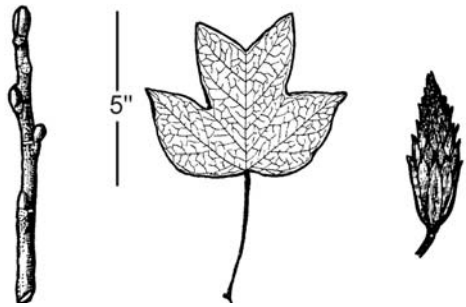
C-2a Trees may have mixture of 3−5” long, rough-textured leaves with some leaves having no lobes, two lobes or three lobes all growing together to form the tree crown. The edges of the leaves are rough and jagged toothed.

red mulberry



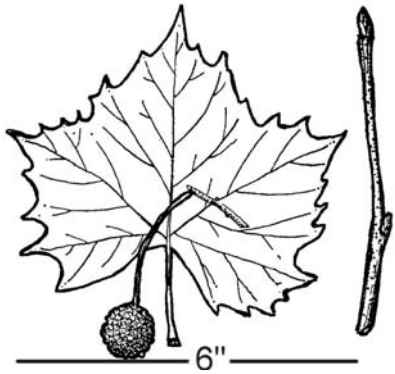
C-2b Leaves the size of a man's hand, have four pointed lobes forming a distinct tulip shape. Center vein ends in center of sinus.

yellow-poplar (tulip-poplar) (page 38)



C-2c Leaf is wide and irregularly fan-shaped, usually slightly longer and wider than a man's hand. Major veins for the leaf all originate at the base stem of the leaf and fan out like fingers into the lobes.

sycamore (page 34)

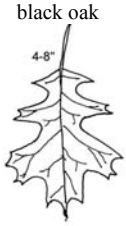


C-2d Leaves are tough and vary in size and shape but usually are from 4−7” long and 1−5” wide, with prominent lobes and deep, rounded sinuses between lobes. There is a definite bristle on the end of each lobe. Leaf veins to lobes start from several places along the central leaf vein.

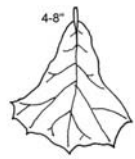
red oaks (pages 46, 54, 57, 60)

upland red oak

black oak



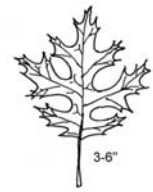
blackjack oak



northern red oak

shingle oak

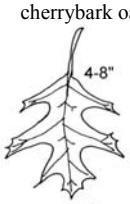
southern red oak



scarlet oak

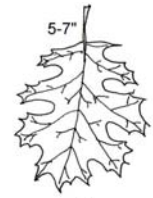
lowland red oaks

cherrybark oak



Nuttall oak

Shumard oak



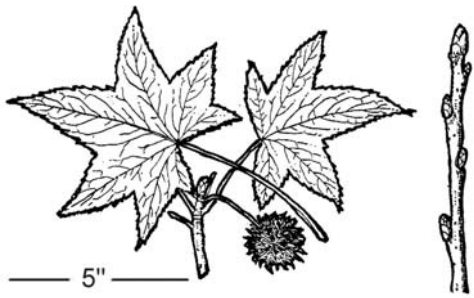
pin oak

water oak

willow oak

C-2e 4−7” wide leaf forms a distinctive, five-pointed, star shape with deep V sinuses and long, pointed lobes. Leaf veins fan out from the base of the leaf at the stem.

sweetgum (page 50)



C-3
Leaves Have No Lobes

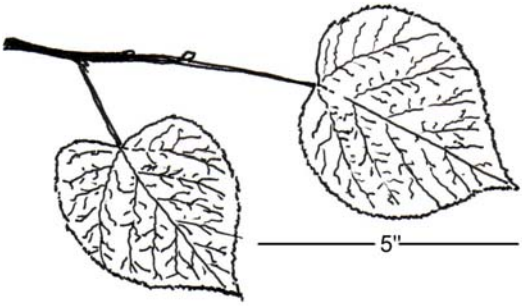
American beech, basswood, black cherry, blackgum, cottonwood, elms, hackberry, persimmon, river birch, sourwood, sugarberry

C-3a Spear-shaped, sharp-tipped leaves 3− 5” long with toothed edges and very prominent, straight veins that stand out along the bottom of the leaf. Twig has pronounced zigzag pattern with long, slender bud and leaf attached to the outside turning points of the pattern.

American beech (page 26)

C-3b Heart-shaped, 3½−5½” leaf with one side of the base higher than the other. Rounded to an abrupt tip with coarse, sharp-toothed margins. The blade is soft-textured. Large trees usually have sprouts growing around the tree’s base.

basswood

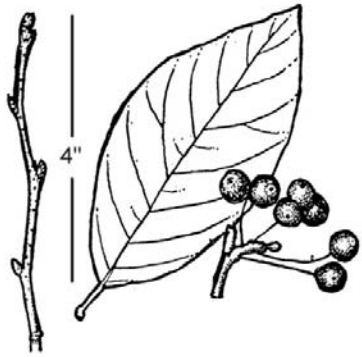


C-3c Oval to speartip-shaped leaves 2−4” long and 1−1½” wide. Edges broken by many fine, curved teeth, thick and shiny above, and paler below. Small nodules often protrude from both sides of petiole just below leaf blade. Stem releases pungent odor when scraped with fingernail.

black cherry (page 42)

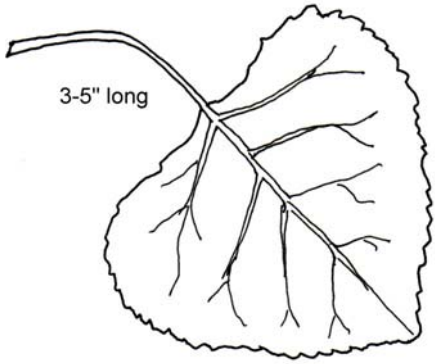
C-3d Leaves are 2−5” long, and 1−2” wide, oval speartip-shaped, smooth-edged with shiny dark green top upper surface. Fruit clusters of two to three bluish-black berries often present in late summer. Leaf tip often curls down and to the side.

blackgum (page 55)



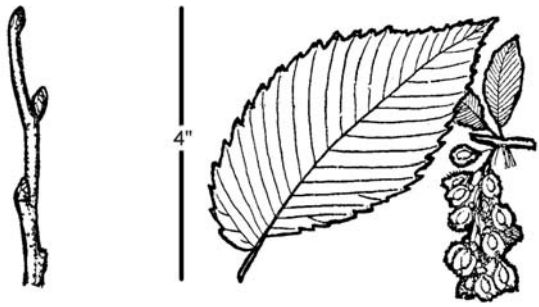
C-3e Triangular-shaped leaf with base that is almost straight across. Coarse-toothed edges; long, flat petiole.

eastern cottonwood



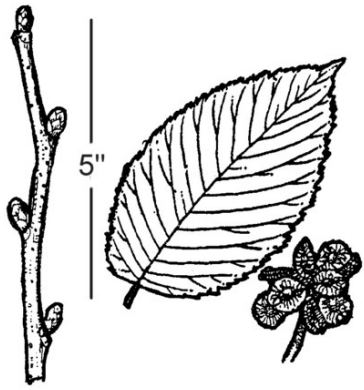
C-3f Leaves are 3−5” long, oval and double-toothed with fine teeth along edge between evenly spaced larger teeth. The base of the leaf is lopsided, with one side higher on the leaf than the other.

elm - American (page 40)



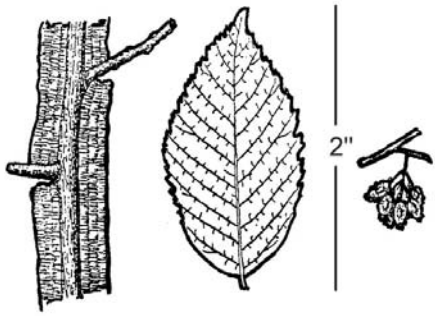
C-3g Double-toothed leaves 4−7” long and 2−3” wide are fairly oval; with pointed tips and very rough sandpaper-feeling; dull, dark green upper surface; lopsided base on leaf. Thick, slimy sap present when twig is broken.

elm – slippery (page 40)



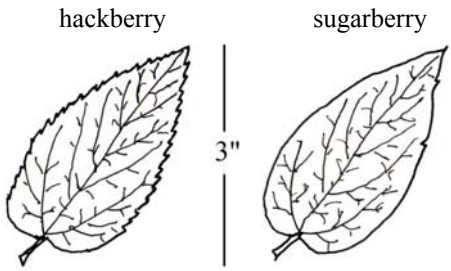
C-3h Leaves are 1½−3” long and 1−1½” wide, double-toothed with fine teeth between evenly spaced larger teeth. One side of the leaf is larger than the other as though the yellow leaf stem is slightly off on one side of the base circle. There are usually flat-topped corky ridges along the twig between the leaves.

elm - winged (page 37)



C-3h Light green speartip-shaped leaves 2−4” long and 1−2’ wide with smooth edges around the base and fine teeth along the sides up to the tip. Three distinct veins come up from the base. Tree trunk is light gray with corky warts in singles and clusters.

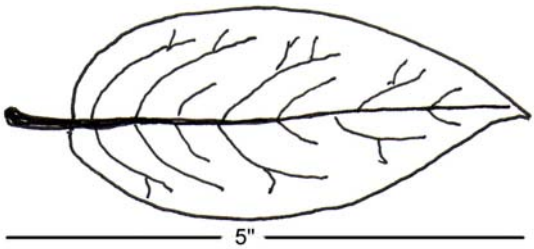
hackberry* (page 31)



*If teeth do not start along edge until approximately one-third way from the base to tip, the tree is **sugarberry**

C-3i Alternate 4-6” long leaf is oval with rounded base and pointed tip, smooth edges, shiny dark green top, and paler green bottom. The petiole is ⅓−1” long and covered with tiny hairs. Tree trunk is covered with rough, knobby shaped bark.

persimmon



C-3j Alternate 1½−3” long leaves with broad, triangular shape, long, tapered tip and both coarse and fine teeth along the edges. Veins flair out in straight lines from the central vein to the outside edges.

river birch

C-3k Lance-shaped leaves 4−7” long and 1−2” wide with finely toothed outside margins. Hairs stick up along the center vein when leaf is folded back in half along vein. Leaf has a very sour taste. Long strands of small berries often found hanging from branch tips.

sourwood (page 48)

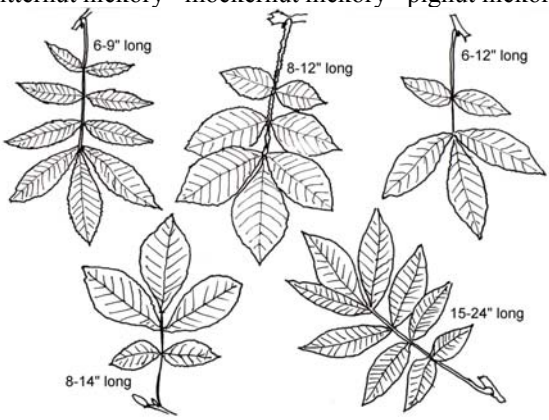
D.
Alternate Arrangement, Compound Leaves

hickory, black walnut, locust

D-1 Leaf is 8−14” long with from five to nine fine-toothed leaflets that are usually yellow green on top and paler on the bottom. Leaflets come off a central leaf stem at intervals along the side and off the end of the stem.

hickory (pages 35, 56)

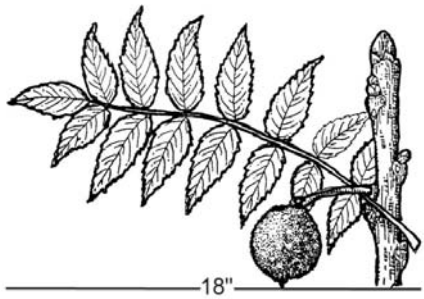
bitternut hickory mockernut hickory pignut hickory



shagbark hickory shellbark hickory

D-2 Leaves 1−2’ in length with 13 to 23 leaflets 2−4” long and 1−2” wide, sharply toothed and pointed. Terminal leaflet is often missing. Inner bark of soft tree trunk is dark chocolate brown.

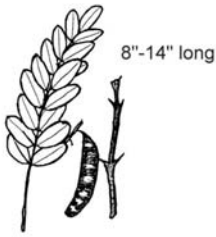
black walnut (page 28)



D-3 Leaves are 8−14” long with 12 to 20 small oval leaflets ½−1” long and ¼−½” wide. The base and tip of the leaflets are rounded at the ends.

locust (page 33)

black locust
(compound leaf)



honey locust
(double compound leaf)

Identifying Trees in the Winter
When There Are No Leaves on the Tree

Identifying trees any time of the year can be a challenge. It can be especially difficult in the winter when the leaves have fallen and the remaining buds and twigs are high in the tree and out of reach. Fortunately trees do not move around so their probable identities can usually be narrowed down by location. The bark and overall growth form are the most readily available and accurate sources of clues to winter identification of trees. Looking on the ground beneath the tree for shed leaves and seeds can often help. You have to be careful not to misidentify the tree by picking up leaves from a neighboring tree by mistake.

Many trees have bark characteristics that, when known, make positive identification possible. Others are more subtle. This guide offers clues for identifying those trees that can be identified without first having to learn the leaves. They are classified as:

1. Easy-to-Identify Trees.
2. Trees of Medium Difficulty.
3. Trees That Require Close Examination.

Trees in this booklet that are not listed under one of these three categories are considered to be too variable or too subtle in their form and shape to be described for winter identification.

EASY-TO-IDENTIFY TREES

Each of the following trees has characteristics that are easy to identify. With practice, many of these trees can be recognized from a distance. Others may require touching, scuffing and sniffing in addition to just looking; but in each case the results are unique enough for an easy, positive identification to be made.

Name	Page
American beech	26
Ash	27
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Eastern redcedar	29
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Sycamore

Easy-to-Identify Trees – American Beech

AMERICAN BEECH – American beech retains its **very smooth, mouse-gray bark** without peeling, no matter how large it grows. It is very particular about growing in moist, well-drained areas such as hollows and north-facing lower slopes. Because of its dense summer foliage, the area under the tree is usually free of any undergrowth except occasional beech sprouts. Often, it will retain its leaves (light tan after frost) most of the winter. **Twigs have a pronounced zigzag pattern with long, slender bud and leaf scar at each outside turning point of the pattern.**

bark

leaf

upward view

Leaves are oblong, sharp-tipped, 3−5” long with toothed edges and very prominent, straight veins that stand out along the bottom of the leaf.

Easy-to-Identify Trees –Ash

ASH – The two most common species of ash in Tennessee are green ash and white ash. Green ash often inhabits wet sites, while white ash is usually found growing on well-drained to dry soils. Both have corky light tan to gray, rough bark that sometimes forms a tight, diamond chain-shaped pattern. The surface of the bark will usually rub off in a crumbly manner. When the outer bark is **sliced away, a very light cream-colored inner bark is exposed. The branch tips are large and very blunt looking** (not to be confused with boxelder that has long, slender and often green branches).

bark variations

green ash blunt tip

white ash

Ash trees have compound leaves that are 9−12” long and grow opposite of one another along the branch. Branches also grow opposite one another along the limb. Leaves have three to seven 1½−4” leaflets growing along the sides and end of the leaf stalk. Green ash has a prominent bud nestled in the crotch between the twig and leaf. White ash has a small bud that is buried in the crotch and not readily visible.

Easy-to-Identify Trees – Black Walnut

BLACK WALNUT – Black walnut has a rough dark bark and only a few, widely spaced, strong-looking limbs. Using a knife to slice away the soft surface of the bark on the trunk of the tree will expose a **smooth, chocolate-brown inner bark.** The odor of the cut bark is also distinctive to black walnut.

tree

bark

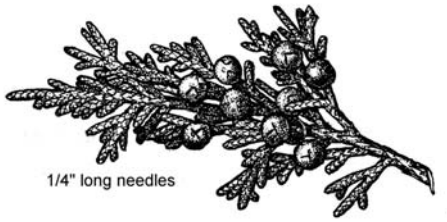
Black walnut leaves are 1−2’ in length with 13 to 23 leaflets, 2−4” long and 1−2” wide, sharply toothed and pointed. The terminal leaflet is often missing.

Easy-to-Identify Trees – Eastern Redcedar

EASTERN REDCEDAR – Eastern redcedar is our only native **evergreen that has scale-type leaves**. It is a medium-sized tree that typically has very dense yellow-green to blue-green foliage and thin silver-brown bark that will peel or shred off in thin strips. Pricking through the bark to the wood produces the distinctive odor often associated with cedar-lined closets.

tree

bark



The leaves of eastern redcedar are very small, yellow-green to blue-green, scale-like leaves growing on all four sides of the thickly matted twigs.

Easy-to-Identify Trees – Flowering Dogwood

FLOWERING DOGWOOD – Flowering dogwood is a **small tree,** seldom reaching more than 20 feet in height and 6 inches in diameter, with a rather **flat and spreading crown and short, often crooked, trunk. The bark is tan to dark brown and broken up into small, four-sided scaly blocks**. During the winter there are usually **large, flat- topped, rounded flower buds that form an X pattern when looked at from the end**, attached to branch tips**.**

Flowering dogwood blooms in spring with small flowers surrounded by four large, white, false petals that form what looks like large white flowers. In the fall, the leaves and clusters of berries turn red.

bark

tree

Flowering dogwood's dark to yellow-green leaves are oblong and broadly rounded, 3−5" long and 2−3" wide, with smooth but wavy outer edges that are almost rounded at the base and tipped at the end. The veins make pronounced sweeping upward curves from the central vein to the outside edge of the leaf.

Easy-to-Identify Trees – Hackberry; Sugarberry

HACKBERRY; SUGARBERRY Hackberry and sugarberry are very similar, medium to large trees often found growing in fence rows and in almost pure stands on shallow, limestone-based soils. Like the beech, they have smooth, mouse-gray bark but **they also have warts! The bark will have single warty growths and clusters of warty growth protruding from the smooth surface at random places.** These protrusions are usually ¼–⅓" tall, twisted looking and anywhere from ¼" long, warty singles to warty rows along the smooth bark. **A second identifying feature is the bird nest-like tangles of twisted twigs that often develop at the ends of the branches**.

bark

limb tangles

hackberry sugarberry

Hackberry has light green, speartip-shaped leaves, 2−4" long and 1−2" wide that have smooth edges around the base and fine teeth along the sides up to the tip. Sugarberry has the same leaf characteristics, except the teeth are either absent or do not begin until the mid-point of the leaf.

Easy-to-Identify Trees – Hemlocks

HEMLOCKS – Hemlock is found in the eastern part of the state. It is an upland evergreen tree that has green leaves all year. Lower limbs usually droop down toward the ground in flat, layered fashion and flair upward at the tips. **The ¾" long, flat, blunt-tipped needles have two parallel light blue stripes along the bottom side from end to end.** This tree is almost always growing in moist, well-drained areas such as lower drainages and north-facing slopes. Two species of hemlock grow in East Tennessee. Eastern hemlock is the most common, but Carolina hemlock may also be found.

Carolina hemlock

bark

needles

upward view

eastern hemlock needles

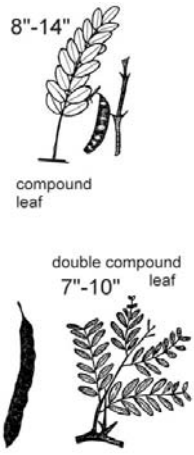
Hemlocks have flat, ¾" long needles with blunt ends. Each needle usually has two parallel, light blue lines along the length of its bottom surface. Branches hang in flat, layered fashion. Needles lay flat on eastern hemlock and protrude in all directions on Carolina hemlock.

Easy-to-Identify Trees – Locust

LOCUST – Black locust has light brown, rope-like bark, while the bark of honey locust is flat and scales up from the side. **The quick identifying characteristic for both trees is the presence of thorns along the twigs and trunk.** Black locust has scattered, ½-inch long thorns scattered along the leaves, branches and tree trunk. **Honey locust has very large thorns on its trunk and branches**. These thorns are sometimes 4 inches long and often have long secondary spikes angling out from their base.

black locust

black locust leaf



honey locust

honey locust leaf

Locust leaves are compound (black locust) or doubly compound (honey locust), 8−14” long, with 12 to 20 small oval leaflets ½−1” long and ¼−½” wide. The base and tip of the leaflets are rounded at the ends.

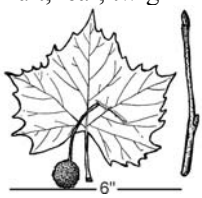
Easy-to-Identify Trees – Sycamore

SYCAMORE – Sycamore can be called the tree of bleached bones because it looks like old bones shedding patches of skin. Both the trunk and the well-spaced, large, long limbs **shed random patches of paper-thin, light tan bark, exposing large areas of very smooth, greenish gray to silver white bark**. The trunk of very large trees may eventually be covered with this light tan outer bark, but the bark continues to shed.

peeling bark

top and limb bark

fruit, leaf, twig



The sycamore leaf is 4−8” wide and irregularly fan-shaped, usually slightly longer and wider than a man’s hand. Veins for the leaf all originate at the base stem of the leaf and fan out like fingers into the lobes.

Easy-to-Identify Trees –
Shagbark; Shellbark Hickories

SHAGBARK HICKORY – Shagbark hickory is usually found on dry to well-drained sites. It has a mouse-gray, mottled, hard, almost shiny **bark that may peel from both top and bottom at first, then settles into peeling in long overlapping strips hanging down in layers that are often over 6 inches long**. These strips are tough as armor, making them difficult to break off even though with some effort they can be peeled from the tree.

bark

leaf

fruit, twig with buds

Shagbark hickory leaves are 8−14” long, usually with five fine-toothed leaflets that are yellow green on top and paler on the bottom.

SHELLBARK HICKORY (not shown) has practically identical bark characteristics. It is usually found growing wet areas. The leaf may be 24 inches long and averages seven large leaflets per leaf. The leaf stem often continues to hang from the limb long after the leaflets are gone.

Easy-to-Identify-Trees – White Pine

WHITE PINE – White pine is easy to identify by its branching pattern. **It grows one wagon wheel shaped whorl of branches and a long terminal shoot each year**. The branches in each whorl grow out of the tree trunk at the same height. **The pattern repeats itself each year, resulting in a series of wagon wheel-shaped branch whorls clustered around the trunk, separated by bare spaces along the trunk**. When the whorls of dead branches or branch stubs persist on lower tree trunks, the tree's approximate age can be figured by counting the total number of branch whorls. The trunk is dark gray-black.

upward view

needles & cones

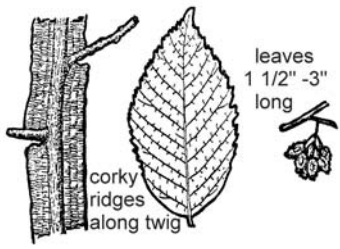
White pine has soft, flexible, blue-green needles, 3−5" long and growing in bundles of five. Each needle has white lines along the length of the bottom surface.

Easy-to-Identify Trees – Winged Elm

WINGED ELM – Winged elm is easy to identify because of the corky ridges growing along two sides of the long, slender, wandering, mouse gray, branches and twigs. The tree is usually small, growing on dry soils or rocky areas. The overall shape of the tree is rounded to flat on top.

bark

leaves and wings on twigs



Winged elm leaves are 1½–3” long and 1–1½” wide, double-toothed with fine teeth between evenly spaced, coarse teeth. One side of the leaf is slightly larger than the other side, as though the yellow leaf petiole is growing slightly off center.

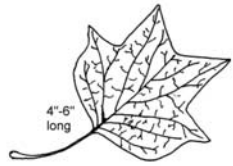
Easy-to-Identify Trees – Yellow-Poplar

YELLOW-POPLAR – Yellow-poplar (tulip-poplar) is a distinctive tree that grows straight and round. The bark is smooth and mouse gray in small trees, becoming rougher and more butternut brown as the tree grows larger. On all but the largest trees, the bark usually looks more like it was molded on the tree than split and cracked away as the tree grew. **The single characteristic that makes identification relatively easy is the presence of what looks like white to silver white chalk dust inside the channels and depressions of the bark**. This silver-white dusting is consistent from bottom to top of the tree. Further identifying characteristics include clean, pruned trunks that may be very tall with a relatively small top, the tendency to grow in pure stands, and leftover seed-pods that look like small, peeled bananas standing upright on the ends of the upper branches.

Silver-white inside bark

leaves

trunk base



leaf

TREES OF MEDIUM DIFFICULTY

Name	Page
American elm	40
Baldcypress	41
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Shortleaf pine	47
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Slippery elm	40
Sugar maple	49
Sweetgum	50
Virginia pine	51
White oak	52

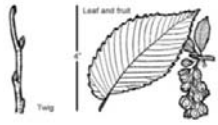
Cypress knees in snow

Trees of Medium Difficulty –
American Elm; Slippery Elm

AMERICAN ELM – American elm is perhaps best identified in the winter by looking at the shape of the tree. Three or four major limbs usually fork sharply upward from the trunk, then arch gracefully over and end with clusters of **fine branch tips**. **The ends of these branches are noticeably small for the given size of the tree**. The tree usually forms a **rounded to flat-topped, vase shape**. Breaking or cutting a cross section of the bark will **reveal a series of white lines.**
SLIPPERY ELM− (not shown) has the same shape and form as American elm. Cutting a cross section of the bark will reveal **red inner bark without white lines.**

bark

twig, leaf and fruit



American elm tree

bark lines

Leaves for both elms are 3−7” long, oval and double-toothed, with fine teeth between evenly spaced, coarse teeth. The base of the leaf is lopsided. The top of American elm leaves is smooth**. The top of slippery elm leaves is usually sandpaper rough when rubbed from tip to base.**

Trees of Medium Difficulty – Baldcypress

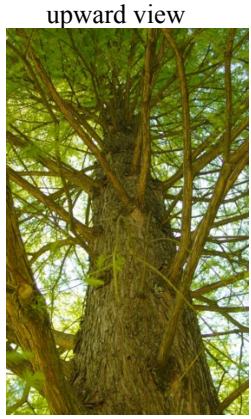
BALDCYPRESS – Baldcypress can best be identified in the winter by location, tree shape and the often present **knees (knob-like projections growing up out of the ground or water around the base of the tree).** Baldcypress is usually found **growing in or around standing water**, but it can also be found growing on better-drained sites. Needles are dropped in winter, making the tree look like a dead cedar tree.

On young trees, short, thin, reddish-brown branches are retained from low on the tree to the top, **forming a tight teepee-shaped cone that almost looks fuzzy. Twigs on these branches are lined with both leaf scars and protruding, hard, round leaf buds**. Larger trees form spreading, fluted bases, shed their lower branches, form flat tops and may develop scattered knees throughout the root zone. The bark is thin, reddish-brown to tan and becomes thick and fibrous as the tree ages.

tree

bark

upward view



BLACK CHERRY – Black cherry can be identified by its **dark gray/black bark that looks as flaky as if someone glued large corn flakes up and down its trunk**. Small trunks, limbs and twigs will have **a series of random, fine white lines marked at right angles to the stem's length**. Breaking off a twig or pricking a hole through the bark to the inner wood will produce a **pungent odor.**

bark

tree trunk

young bark

Oval to lance-like shaped leaves are 2−5" long and 1−1½" wide, thick and shiny above and paler beneath. Leaf edges are broken by many fine in-curved teeth. Two small glands often protrude from the sides of the petiole. They are located just below the leaf blade.

Trees of Medium Difficulty – Boxelder

BOXELDER − Boxelder is a medium-sized, rounded, often forked tree that can be found in urban settings and open damp areas. The wood is very brittle, often leaving the tree with broken tops and a lot of **long, green, slender sprouts growing out in clumps along the trunk and major limbs of the tree.** Unlike sassafras that also has green twigs, boxelder sprouts have no rough secondary bark patches along the stem. The bark texture looks a lot like ash, making winter identification only by bark difficult. Branches are located opposite one another.

trunk with sprouts

tree

Leaves have toothed leaflets that have several shapes with some jutting out to the side like pointed thumbs. Twigs are long, slender and often green.

Trees of Medium Difficulty – Chestnut Oak

CHESTNUT OAK – Chestnut oak is a member of the white oak group. It often grows on dry sites such as upper slopes and ridge tops. It can get very large, including a wide, spreading crown of heavy limbs. **A distinguishing characteristic is the very deeply fissured bark that looks more like a series of V-shaped valleys that have been carved up and down the tree trunk than the bark cracked open because of tree growth**. The bark color varies from silver-gray to dark gray to brown. **The valleys are V-shaped and so deep and wide you can usually lay your fingers completely inside the channels**.

bark variations bud, leaf, acorn bark variations

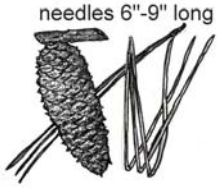
The leaves of chestnut oak are simple, alternate, oblong, often rounded at the point, blunt-toothed, 5−9” long and shiny yellowish-green above, lighter and slightly fuzzy beneath.

Trees of Medium Difficulty – Loblolly Pine

LOBLOLLY PINE (a southern yellow pine) – In most of Tennessee, loblolly pine will only be found **growing in plantations** but in wild stands they may be found growing in random fashion. They are usually tall, with gently sweeping, well-pruned trunks. Look for **dark, thick, rectangular, chunky bark**. Then look up for pine needles. You should see a **tree crown that is made up of thick, round ball-shaped tufts of pine needles at the ends of scattered branches with daylight in between**. If you can reach the needles, bend them over against themselves. **Loblolly needles are flexible enough to bend double without breaking**.

bark

round needle tufts



Needles are 5−9” long, are borne three in a cluster; fruit is in cones or burrs about 3−5” long with sharp, upward-curving spikes on the end of each scale.

Trees of Medium Difficulty – Scarlet Oak

SCARLET OAK (a member of the red oak group) – Scarlet oak is usually a poorly formed tree **with dead branches spiking out of the trunk** and a **swollen, highly figured base**. The bark often has **long silver stripes up and down the trunk**. This is especially true toward the crown. The bark is tight, dark gray and hard to the touch with shallow ridges running up and down the tree between wide, flat plates of bark. Drilling through the bark with a pocket knife will reveal a light pink color and **sap that has a pungent smell.** Dead lower branches are often persistent.

swollen base bud, leaf, acorn upward view

The leaves are simple, alternate, somewhat oblong or oval, 3−6” long, 2½−4” wide and usually seven-lobed. The lobes are bristle-pointed and separated by rounded openings extending at least two-thirds of the distance to the midrib, giving the leaves a very deep, “cut” appearance. The leaves turn a brilliant scarlet in the autumn before falling to the ground.

Trees of Medium Difficulty – Shortleaf Pine

SHORTLEAF PINE – Shortleaf pine can be found growing as single trees mixed throughout the hardwood forest. It has a tall, brown trunk covered with large, platy bark on a tree trunk that is usually well-pruned. The tree top is usually made up of **thick clumps of upturned foliage growing on the top side of the limbs** with daylight present between the clumps. **The distinguishing characteristic is the often-present pitch pockets on the surface of the tree's bark**. These pockmarks are small but easily visible with the naked eye and give the appearance of **tiny replicas of moon craters**. They are usually round and indented in the center with a slightly raised perimeter. Cones or burrs are small, 1½–2½" long with sharp prickles, generally clustered along the twig. Needles stand in clumps on top of branches.

upturned needles

pitch pockets

The needles are in bundles of two or three needles per bundle. They are from 3−5" long, slender, flexible and dark green.

Trees of Medium Difficulty – Sourwood

SOURWOOD – Sourwood is a small tree (usually less than 10 inches in diameter at chest height). It has **thick, chunky silver gray to reddish-brown bark** and often grows with a curved trunk and top that droops over. If you are lucky, there will be long, fine clusters of very small fruit capsules hanging down from the ends of the branches. First-year twigs are strong, straight and often are bright red.

tree bark leaf

The leaves are from 5−7” long and 1−3” wide, simple, alternate, with finely toothed margins. Chewing small twigs or rolling up and chewing on the leaf will produce a very sour taste.

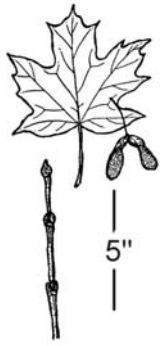
Trees of Medium Difficulty – Sugar Maple

SUGAR MAPLE – Sugar maple can often be identified by **the often-present, solid black, burned-looking areas on the lower parts of the tree trunk and/or the long strips of tight, side-curling bark that is very tough and hard to break off**. Young trees are smooth and gray but as the tree gets larger, the bark begins to turn black at the base and begins to split and curl from the side. Even when it is curling, the bark remains very tough and hard to break off. **Sugar maples grown in the woods usually have lower limbs that grow out from the tree at 90-degree angles to the tree trunk.** The limb angle becomes more acute in upper limbs. **Parallel rows of ¼"- diameter holes made by sapsuckers may often be found on the trunk.**

bark variations

bark variations

twig, leaf, seed



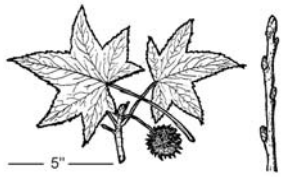
The leaves are 3−5" across, simple, opposite, with three to five pointed and sparsely toothed lobes. The divisions between the lobes are rounded. The leaves are dark green on the upper surface, lighter green beneath, turning in autumn to brilliant shades of orange and clear yellow.

Trees of Medium Difficulty – Sweetgum

SWEETGUM – Sweetgum has a light gray, rough, cork-like bark. It is tall, with a narrow "teepee" shaped top. Many of the limbs may have one or more corky ridges growing along their lengths. The fruit capsules are usually about the size of a golf ball and look like starbursts on a stem because they have sharp open points pointing in all directions.

bark

tree



leaf fruit twig

The simple, alternate star-shaped leaf, with its five to seven points or lobes, is 5−7" across and very aromatic when crushed. In the fall its coloring is brilliant, ranging from pale yellow through orange and red to a deep bronze.

Trees of Medium Difficulty – Virginia Pines

VIRGINIA PINE (a southern yellow pine) − Virginia pines usually grow up together as a pure stand but sometimes are mixed with shortleaf and other pines. The distinguishing characteristics include **thin, brown, flaky bark, usually complete with dead stubs up and down the trunk**. The tree crown is fairly thin and uniform throughout instead of the usual heavy clumps of greenery between open spaces seen in most southern yellow pines. **Looking up through the tree's canopy presents the overall effect of a consistently thin, soft, lacy, filtered light**. The cones or burrs average about 2 inches in length. They are narrow and often slightly curved, with small prickles.

trees

bark

upward view

The twisted and spreading needles are borne **two in a bundle**. They vary from 1½−3" in length, are yellow-green and are shorter than those of any other pine native to Tennessee.

WHITE OAK – White oak has one of the lightest-colored barks in Tennessee's forests. It typically is **very light gray with a texture that varies from medium rough and tight bark to long strips cracking loose and sometimes peeling from the side**. The bark feels soft to the touch and crumbles off the tree when rubbed. Sections of bark that are peeling loose from the side can be easily broken off. White oaks are often among the largest trees in the forest. They have large, strong, well-spaced branches.

bark

upward view

The leaves are 5−9" long and about half as broad. They are deeply divided into five to nine rounded, finger-like lobes with no spikes. Mature leaves are bright green above and much paler below.

Trees That Require Close Examination

Name	Page
Black oak	54
Blackgum	55
Hickory	56
Northern red oak	57
Red maple	58
Sassafras	59
Shumard oak	54
Southern red oak	60

Ozone Falls (Cumberland County)

Trees That Require Close Examination –
<u>Black Oak; Shumard Oak</u>

<u>BLACK OAK</u> – Black oak and Shumard oak are members of the red oak group. Their bark and form are so close in characteristics they have to be separated by cutting a small hole in the bark crevasse to expose the inner bark. **Black oak will have bright orange to yellow, very bitter-tasting inner bark. Shumard oak's inner bark is a medium brown**. The bark of both trees is very tight, tough, rough and dark charcoal gray. These oaks are often the largest trees in the forest, with balanced sets of strong-looking limbs in their tops.

black oak bark

tree trunk

black oak leaf

Shumard oak leaf

BLACKGUM − The silver-gray to almost black bark of larger blackgums often so closely resembles oak or elm that at first glance the tree may be misidentified. **Looking up will reveal a crown filled with unusually small, relatively short, often twisted branches growing out of the tree trunk at 90-degree angles.** The lower branches of younger trees will often droop dramatically, especially if the tree is exposed to enough sunlight to encourage side growth.

leaves

bark

The leaves are simple, 2−5” long and 1½−3” wide. The edges are almost always smooth. Shape varies from broadly oval to narrow at the base, gently flaring out to a maximum width at a point approximately two-thirds of the way toward the end of the leaf, then rounding down to the tip on the end of the leaf. Most leaves have a short, narrow, protruding tip on the end. Healthy leaves are a deep, dark, lustrous green.

Trees That Require Close Examination − Hickory

HICKORY – The tight-barked members of the hickory group can be very difficult to recognize in the winter. Distinguishing characteristics include **tight, gray bark, ranging from tight and "glued on" criss-crossed XX bark furrows to a rougher bark that makes long, rough ridges and valleys up and down the tree**. The ridges often crack into sections with cross cracks running horizontal to the tree. The bark is very tough and often feels like steel armor. **There may be a splattering of small silver flecks scattered up and down the bark**. Smaller trees in the understory will have short limbs growing at right angles to the tree trunk. Taller trees still competing in the overstory for light may have limbs that fork upward with longer, stronger limbs. Branch ends are short and wavy.

tree trunk

fruit, leaves, twigs

bark

The compound leaves have an alternate arrangement. The leaf is 8−14" long with from five to nine fine-toothed leaflets that are usually yellow-green on top and paler on the bottom. Leaflets come off a central leaf stem at intervals along the side and off the end of the stem.

Trees That Require Close Examination – N. Red Oak

NORTHERN RED OAK – Northern red oak often grows to be a very large, cleanly pruned tree. It has strong, well-spread limbs and dark gray bark that has long fissures lying up and down the tree between long, wide, slightly concave, often silver-topped plates of bark. Looking up into the tree will usually reveal **long, wide, silver streaks along the tops of the bark plates** on the trunk and major branches. Northern red oak can be confused with scarlet oak, but northern red oak is usually a larger, well-pruned, and better-formed tree with odorless sap.

silver topped bark

upward view

Leaves are simple, alternate, 5−9” long and 3−5” wide, broader toward the tip, divided into seven to nine lobes; each lobe being somewhat coarsely toothed, bristle-tipped and firm; dull green above, paler below, often turning a brilliant red after frost.

Trees That Require Close Examination – Red Maple

RED MAPLE – Red maple is a challenge to identify because of the way it changes characteristics as it gets larger. This tree has slick, light gray bark when it is small. As it gets larger it develops a thicker, grayish-brown, flaky bark that is heaviest at the base and becomes smoother up the trunk. Full-grown trees may have flaky bark all the way up into the limbs. While this bark is in transition and smooth patches of bark are still present, **very small pimples** can usually be found scattered over the smooth surface. **The crotch between trunk and limbs on red maple is usually narrow**. Slender young branch tips are often bright red.

bark characteristics

twig, leaf, fruit

Leaves are 2½–4” in length and width with wide but jagged edges along the lobes. Usually there are three large lobes and sometimes two smaller ones. The sinuses between each lobe form a sharp V-notch.

Trees That Require Close Examination – Sassafras

SASSAFRAS – Sassafras has thick, rough reddish-brown to weathered silver bark that often causes it to be confused with other trees, including black walnut. **Slicing off the surface of the bark will reveal a pale orange inner bark**. Smelling the fresh-cut slice will usually be rewarded with the distinctive sassafras smell that resembles the smell of root beer. Twigs are bright green and brittle. Limbs are clustered and twisted into an unkempt-looking top.

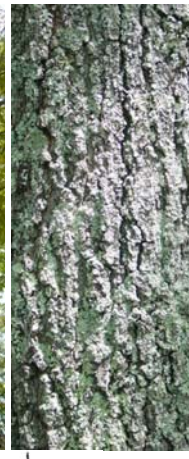
bark

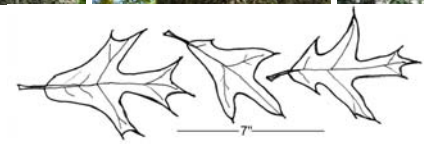
leaves

Sassafras may have a mixture of 3−5” long leaves with no lobes, two lobes or three lobes, all growing on the same limb. Edges of the leaves are smooth, giving the lobed leaves the look of mittens.

SOUTHERN RED OAK- Southern red oak is one of Tennessee's most common trees. It usually has a round, well-pruned trunk with a slight swell at the base and good form up to strong, well-spaced limbs at the top. **The hard bark is very rough but thin (less than ⅜" thick), giving the illusion of its being compressed and glued to the tree.** This bark is hard and rough-textured. Bark patterns vary from long, rough-topped ridges and shallow valleys to clusters of plastered wet corn flakes. Bark color varies from light gray to black. When present, lichens growing on the bark often give the tree a greenish look. The inner bark is various shades of brown, sometimes with cream-colored, short, fine lines and flecks present.

trunk upward view bark





Mature leaves are usually 5−7" long and dark green. The long central lobe and two shorter opposite-side lobes often give leaf a "turkey foot" look. Leaves may also have smaller additional side lobes. All lobes are bristle-tipped.

APPENDIX

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Common and Scientific Tree Names	62
Winter ID Quick Reference Guide	64
Notes	66

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Common and Scientific Names
For Trees Listed in this Booklet.

Name	Pages	
American beech (Fagus grandifolia)	16	26
Ash (Fraxinus)		
Green ash (Fraxinus pennsylvanica)	10	27
White ash (Fraxinus americana)	10	27
Basswood, American (Tilia americana)	17	
Baldcypress (Taxodium distichum)	6	41
Black cherry (Prunus serotina)	17	42
Black walnut (Juglans nigra)	23	28
Blackgum (Nyssa sylvatica)	18	55
Boxelder (Acer negundo)	10	43
Buckeye (Aesculus)		
Ohio buckeye (Aesculus glabra)	11	
Yellow buckeye (Aesculus octandra	11	
Red buckeye (Aesculus pavia).	11	
Eastern cottonwood (Populus deltoides)	18	
Eastern redcedar (Juniperus virginiana)	5	29
Elm (Ulmus)		
American elm (Ulmus americana)	19	40
Slippery elm (Ulmus rubra)	19	40
Winged elm (Ulmus alata)	20	37
Flowering dogwood (Cornus florida)	8	30
Hackberry (Celtis occidentalis)	20	31
Hemlock (Tsuga)		
Eastern hemlock (Tsuga canadensis)	6	32
Carolina hemlock (Tsuga caroliniana)	6	32
Hickory (Carya)		
Bitternut hickory (Carya cordiformis)	22	56
Mockernut hickory (Carya tomentosa)	22	56
Pignut hickory (Carya glabra)	22	56
Shagbark hickory (Carya ovata)	22	35
Shellbark hickory (Carya laciniosa)	22	35
Locust (Robinia)		
Black locust (Robinia pseudoacacia)	23	33
Honey locust (Gleditsia triacanthos)	23	33
Maple (Acer)		
Red maple (Acer rubrum)	8	58
Silver maple (Acer saccharinum)	9	
Sugar maple (Acer saccharum)	9	49

Common and Scientific Names
For Trees Listed in This Booklet

Name	Pages	
Oak (Quercus)		
Black oak (Quercus velutina)	15	54
Blackjack oak (Quercus marilandica)	15	
Bur oak (Quercus macrocarpa)	12	
Cherrybark oak (Quercus pagoda)	15	
Chestnut oak (Quercus prinus)	12	44
Chinkapin oak (Quercus muehlenbergii)	12	
Northern red oak (Quercus rubra)	15	57
Nuttall oak (Quercus nuttallii)	15	
Overcup oak (Quercus stellata)	12	
Pin oak (Quercus palustris)	15	
Post oak (Quercus stellata)	12	
Scarlet oak (Quercus coccinea)	15	46
Southern red oak (Quercus falcata)	15	60
Shingle oak (Quercus imbricaria)	15	
Shumard oak (Quercus shumardii)	15	54
Swamp chestnut oak (Quercus michauxii)	12	
Swamp white oak (Quercus bicolor)	12	
Water oak (Quercus nigra)	15	
White oak (Quercus alba)	12	52
Willow oak (Quercus phellos)	15	
Persimmon (Diospyros virginiana)	21	
Pine (Pinus)		
Loblolly pine (Pinus taeda)	5	45
Shortleaf pine (Pinus echinata)	5	47
Virginia pine (Pinus virginiana)	5	51
White pine (Pinus strobus)	6	36
Red mulberry (Morus rubra)	13	
River birch (Betula nigra)	21	
Sassafras (Sassafras albidum)	13	59
Sourwood (Oxydendrum arboreum)	22	48
Sugarberry (Celtis laevigata)	20	31
Sweetgum (Liquidambar styraciflua)	16	50
Sycamore (Platanus occidentalis)	14	34
Yellow-poplar (Liriodendron tulipifera)	14	38

Notes

Notes

Be all that you can be!

Winter Identification Quick Reference Guide

Bark Characteristics

Smooth, mouse gray with warts: **hackberry** 20, 31
or **sugarberry** 20, 31
Smooth, mouse gray, no large warts: **American beech** 16, 26
Peeling, thin tan bark revealing large, smooth, pale blue-green/silver gray patches: **sycamore** 14, 34
Thorns on tree trunk and limbs: **locust** 23, 33
Chocolate brown inner bark, no white rings: **black walnut** 23, 28
Reddish brown inner bark with white lines: **American elm** 19, 40
Light cream to tan inner bark: **ash** 10, 27
Pale orange inner bark with root beer smell: **sassafras** 13, 59
Bright yellow/orange, bitter tasting inner bark, no smell: **black oak** 15, 54
Long strips of hard, armor-like bark peeling from top and bottom or from bottom up, (on dry site): **shagbark hickory** 22, 35
Long strips of hard, armor-like bark peeling from top and bottom or from bottom up, holding leaf stems (on wet site): **shellbark hickory** 22, 35
Hard, tough to break, gray to black bark peels from side in long ridges: **sugar maple** 9, 58
Soft, easily broken light gray bark may peel from side in long ridges: **white oak** 12, 52
Silver-white chalk dust in bark cracks: **yellow-poplar** 14, 38
Variable bark with pimples on smooth sections: **red maple** 8, 58

Limb Characteristics

Wide silver streaks on top of bark plates, pruned cleanly no sap smell: **northern red oak** 15, 57
Wide silver streaks on top of bark plates, retained dead branches, sap has pungent smell: **scarlet oak** 15, 46
Pine tree with resin pockets on bark: **shortleaf pine** 5, 47
Long green twigs: **boxelder** …10, 43 or **sassafras** 13, 59
Branches grow from trunk in spaced sets of wagon wheel whorls: **white pine** 6, 36
Corky ridges on small branches: **winged elm** 20, 37
or: **sweetgum** 16, 50

Tree Characteristics

(Evergreen trees)

Pine tree with soft lacy appearance with filtered light through needles, dead limbs retained on trunk: **Virginia pine** 5, 51
Pine tree with round needle balls at twig end: **loblolly pine** 5, 45
Pine tree with needles seeming to rest on top of the branches: **shortleaf pine** 5, 47
Thick crown of tiny, prickly, evergreen scale-like needles: **eastern redcedar** 5, 29
Layered branches filled with flat, blunt-tipped needles with blue/white stripes along bottom, needles lay flat along edges of the twig: **eastern hemlock** 6, 32
Layered branches filled with flat, blunt-tipped needles with blue/white stripes along bottom, needles point in all directions: **Carolina hemlock** 6, 32

Visit the University of Tennessee Extension Web site at http://www.utextension.utk.edu

Visit the Tennessee Department of Agriculture, Forestry Division Web site at http://www.state.tn.us/agriculture/forestry/index.html

Proper tree identification
is the first step to understanding
and managing our forests.

TREE BARK IDENTIFICATION

white oak yellow-poplar black walnut

PB1756-5M-9/08 (Rep)
R12-4910-098-004-09

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