TREES

OF WEST VIRGINIA

FARMS AND WOODLOTS

West Virginia Department of AGRICULTURE

PROTECTING HEALTH

animal - plant - environment

Walt Helmick
Commissioner of Agriculture

CONTACT INFORMATION

Plant Industries Division
Phone: 558-2212
Fax: 558-2435

Communications Division
Market Bulletin
Phone: 558-3708
Fax: 558-3131
marketbulletin@wvda.us

Executive Division
Phone: 558-3200
Fax: 558-2203
www.wvagriculture.org

WALT HELMICK
AGRICULTURE COMMISSIONER

Opossum Wood *(Halesia carolina)*

Found only in the New and Kanawha River drainage, Opposum Wood may reach 50 feet with 12-inch trunks. The grayish bark is shallowly fissured into narrow ridges, and the 4- to 6-inch leaves are oval, tapered at both ends and finely toothed. In early spring, white inch-long, bell-shaped flowers appear with the leaves.

Opossum Wood
(Halesia carolina)

Fringe Tree
(Chionanthus virginica)

Fringe Tree *(Chionanthus virginica)*

Fringe Trees are rarely more than 20 feet high with a 4-inch trunk that is covered with reddish brown, smooth to scaly bark. Its leaves are oval, about 4 to 8 inches long, widest at the middle and pointed at both ends. The name comes from the clusters of blooms with long, narrow, showy white petals.

Osage Orange *(Maclura pomifera)*

Imported from the West and now escaped from cultivation, Osage Orange is a thorny tree that grows up to 50 feet with diameters under a foot. The orangish bark is fissured into shreddy strips and the orange inner bark contrasts sharply with the lemon-yellow sapwood – both of which have been used as dyes.

Short, stout spines grow on the twigs at the base of each 3- to 6-inch egg-shaped, dark green, untoothed leaf. The fruit is a large green 3- to 5-inch ball with milky sap.

Osage Orange
(Maclura pomifera)

Catalpa *(Catalpa spp.)*

Catalpa *(Catalpa spp.)*

Frequently cultivated and often escaping, Catalpa or Stogie Tree may grow to 25 or 50 feet with trunks of 12 to 18 inches. The light grayish bark is fissured into long, flat, scaly ridges. Large 7- to 12-inch untoothed leaves are heart-shaped at the base with sharp tips, and they grow in whorls on the twigs. The leaves blacken with the first frost.

Showy white flowers appear in early summer and mature into a 10- to 20-inch bean-like round capsule.

CONTENTS

INTRODUCTION **1**
CONIFERS **1**
Pines 1
White Pine • Red Pine 2
Virginia Pine • Pitch Pine • Shortleaf Pine 3
Table Mountain Pine • Scots Pine, Austrian Pine & Mugho Pine 4
Spruce 5
Red Spruce • Norway Spruce & Blue Spruce 5
Eastern Red Cedar • Balsam Fir 6
Hemlock 7
Larch 7
Eastern Larch • European Larch & Siberian Larch 7
Yew 8
American Yew • Japanese Yew & English Yew • Aborvitae 8
THE OAKS **9**
White Oak 9
Chestnut Oak • Swamp White Oak • Bur Oak 10
Post Oak • Shingle Oak 11
Pin Oak • Red Oak 12
Scrub Oak • Chinquapin Oak • Black Oak 13
Scarlet Oak • Spanish Oak 14
Blackjack Oak • Shumard Oak 15
THE HICKORIES **16**
Shagbark • Shellbark 16
Pignut • Mockernut • Bitternut 17
THE WALNUTS **18**
Black Walnut • Butternut or White Walnut 18
ASHES **19**
Mountain Ash • White Ash 19
LOCUSTS **20**
Black Locust • Honey Locust 20

MISCELLANEOUS HARDWOODS with COMPOUND LEAVES **21**
Buckeye • Tree-of-Heaven 21
Kentucky Coffee Tree 22
THE BIRCHES **22**
Black Birch 22
Yellow Birch • River Birch • Paper Birch 23
THE MAPLES **24**
Striped Maple • Mountain Maple • Silver Maple 24
Sugar Maple • Red Maple 25
Box Elder 26
THE MAGNOLIAS **26**
Cucumber Tree 26
Umbrella Magnolia • Mountain Magnolia 27
THE CHERRIES **27**
Black Cherry 27
Choke Cherry • Fire Cherry 28
THE ASPENS OR TRUE POPLARS **28**
Trembling Aspen 28
Big-Toothed Aspen • Cottonwood 29
THE HORNBEAMS **29**
Hop Hornbeam 29
American Hornbeam 30
THE ELMS **30**
Slippery Elm • American Elm 30
MISCELLANEOUS HARDWOODS **31**
Black Willow • American Beech • American Chestnut 31
Chinquapin • Black Gum • Hackberry 32
Red Mulberry • Tulip Poplar • Pawpaw • Sassafras 33
Sweet Gum • American Sycamore • Crab Apple 34
Hawthorn • Serviceberry • American Holly 35
Redbud • Basswood • Dogwood 36
Black Gum • Sourwood • Persimmon 37
Opossum Wood • Fringe Tree • Osage Orange • Catalpa ... 38

Black Gum *(Nyssa sylvatica)*

Black or Sour Gum reaches heights of 60 feet with an 18- to 20-inch trunk. The dark gray trunk is deeply grooved in an alligator-hide pattern and supports an irregular crown with hundreds of short, stout twigs. Its untoothed, oval leaves are 2 to 5 inches, shiny and dark green. The fruit is dark blue and berrylike.

Black Gum
(Nyssa sylvatica)

Sourwood
(Oxydendron arboreum)

Sourwood *(Oxydendron arboreum)*

Sourwood is tall and symmetrical and may grow to 60 feet with trunks of 18 inches. The grayish bark is fissured into rough ridges. Its 5- to 7-inch leaves are dark, shiny green above, pointed at both ends and finely toothed. The main vein on the lower side is usually hairy. In mid-summer, one-sided strings of creamy-white, bell-like flowers provide nectar for bees. These mature into seed-bearing capsules, which hang on well into winter.

Sourwood is a truly beautiful tree in all seasons and makes an excellent ornamental. It is tall and symmetrical and may grow to 60 feet with trunks of 18 inches.

Persimmon *(Diospyros virginiana)*

Usually a small tree, the Persimmon can reach 100 feet with trunks of 20 inches. The thick, black bark is fissured into small, often nearly square blocks. The oval, leathery, 2- to 7-inch untoothed leaves are dark green above and lighter below.

Persimmon
(Diospyros virginiana)

Yellowish-green, bell-like blossoms grow on the new shoots of a Persimmon in early summer and mature into 1-inch pale-orange berries that are very puckery to the taste until completely ripe.

Redbud *(Cercis canadensis)*

Redbud is a shrub or small tree, seldom taller than 20 feet or wider than 6 inches. The reddish-brown trunk is scaly and usually divides into several branches near the ground. The twigs zig-zag and a 3- to 5-inch untoothed, heart-shaped leaf is the best characteristic to remember. Equally familiar are the showy pink flowers that appear all over the tree, even on the trunk, in spring.

Redbud
(Cercis canadensis)

Basswood *(Tilia spp.)*

Basswood *(Tilia spp.)*

West Virginia has two very similar species of Basswood. Both are large (70 to 120 feet and about 3 feet in diameter). The light gray bark of young trees furrow into flat, scaly ridges as they age. The 5- to 6-inch leaves are heart-shaped or lopsided at the base and coarsely toothed.

In early summer, clusters of yellow flowers hang from a long stalk suspended from a leaf-like bract. These flowers are excellent nectar for bees and produce small, round, brown seeds in the fall.

Dogwood *(Cornus florida)*

A small, bushy tree, Dogwood rarely grows taller than 30 feet with a 1-foot trunk. The dark bark is broken into four-sided or round scales in an alligator-hide pattern. Look for large biscuit-shaped flower buds. Four large, petal-like bracts surround each cluster of greenish-yellow flowers, which produce scarlet, egg-shaped fruits.

The Dogwood's 3- to 5-inch leaf is oval and pointed, and the primary veins curve to follow the outline of the leaf.

Dogwood *(Cornus florida)*

INTRODUCTION

West Virginia ranges in elevation from 240 feet above sea level at Harpers Ferry to 4,860 feet at the top of Spruce Knob. Precipitation varies from about 25 inches yearly at Moorefield to nearly 66 inches at Pickens. The average frost-free period is 119 days at Bayard and 193 days at Logan.

These varieties create different environments that allow trees with quite different needs to flourish.

The State is located in different latitudes and longitudes, which enhance the differences in temperature, rainfall and weather – and, consequently, the kinds of plants and trees that grow throughout the State. For example, northern West Virginia reaches the latitude of Staten Island. Southern West Virginia extends nearly 60 miles below the latitude of Richmond, Virginia. Eastern West Virginia extends 50 miles east of Buffalo, New York, and western West Virginia is 40 miles farther west than Cleveland.

West Virginia is home to more than 100 species of trees, which this booklet describes and illustrates. We invite you to read and learn about West Virginia's trees. Then, the next time you're out walking, you'll know what's growing in your backyard.

For such a relatively small area (24,181 square miles), West Virginia is perhaps the best place in the Eastern United States in which to study trees.

CONIFERS

Twelve trees native to West Virginia have needle- or scale-like leaves. While 11 are evergreen, one does drop its needles in the fall. What they have in common, however, is how they produce their seeds – in cones, although the cone of the red cedar is somewhat different. That's why they're called conifers. Although the American Yew is an evergreen, needle-leaved shrub, we've included it for identification.

PINES

All pines have from 2 to 5 needle-like leaves in clusters. If you pull them off, they stay in a cluster held together by a sheath around the base of each group. Our native pines are often called either hard or soft pines. The difference is that hard pines have needles in twos or threes, while soft pines have needles in fives. And, the outer edge of the cone scales of soft pines are thin, while the hard pines' cone edges are thick.

West Virginia is home to six native pines: White Pine, Red Pine, Virginia Pine, Pitch Pine, Table Mountain Pine and Shortleaf Pine. Three other pines are often imported into the State: Scots Pine, Austrian Pine and Mugho Pine.

White Pine *(Pinus strobus)*

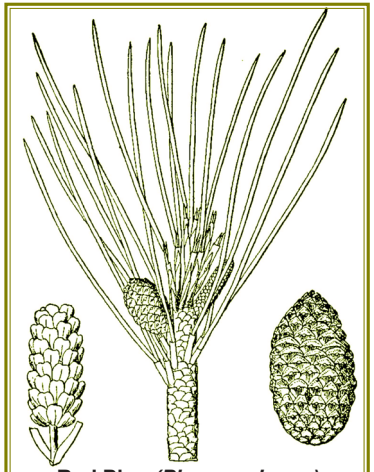
White Pine, West Virginia's only soft pine, is the tallest and most stately of the eastern pines. Under good conditions it may grow more than 175 feet high and its stump may be larger than 5 feet in diameter. The bark on old stems is dark and is divided by shallow grooves into wide, flat-topped ridges.

White Pine is easy to identify because the needles occur five in a cluster; and, on older trees, the upper limbs curve up at the tips. These same limbs are conspicuous at times due to large numbers of 6- to 8-inch curved cones with thin cone scales.

White Pine is often used in reforestation projects, although White Pine Blister Rust can be a killing disease unless controlled.

White Pine *(Pinus strobus)*

All pines have two to five needle-like leaves in clusters. If you pull them off, they stay in a cluster held together by a sheath around the base of each group.



Red Pine *(Pinus resinosa)*

Red Pine *(Pinus resinosa)*

Red Pine is a medium-sized tree that grows naturally only about as far south as North Fork Mountain in Pendleton County, although it has been planted elsewhere. Insects, however, usually prevent red pines from reaching maturity in West Virginia unless they are planted above an elevation of 3,000 feet.

The brittle leaves grow two to a cluster and are the longest of any of the native pines – often growing up to 7 inches long. To test the brittleness, pull off six or eight needles, grasp them at the end and bend them in the middle. The needles of all other pines will bend, but the red pine's needles will break.

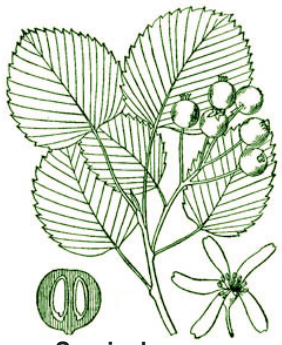
The 1½- to 2½-inch rounded cones have scales that are greatly thickened at the tip and they do not have prickles. On old stems, the bark is reddish-brown and is divided into broad, flat, scaly plates.

Hawthorn *(Crataegus spp.)*

Hawthorn or Crataegus is a large group of shrubs or small trees that are very hard to separate into species. They grow in open areas, such as abandoned pastures, and often form impenetrable thickets. The bark is gray and usually scaly. Perhaps the best characteristic is the long, sharp spines at the base of each leaf on the zig-zag twigs.

Hawthorn
(Crataegus spp.)

Crataegus or Hawthorn leaves are variously toothed or lobed; the flowers are similar to those of an apple tree and the fruit is small and apple-like.



Serviceberry
(Amelanchier spp.)

Serviceberry *(Amelanchier spp.)*

Serviceberries, also called Juneberries, Shadowbush or Sarvis, are generally shrubby, but on good sites become small trees. The bark is smooth and gray and often has light lines spiraling around the trunk, which makes it look twisted. The small, oval leaves are usually finely toothed. In the spring, dense masses of white flowers appear before or with the leaves. These mature into small, sweet, bright red berries, technically small apples.

American Holly *(Ilex opaca)*

Well known as Christmas greenery. American Holly is a tree that can reach 60 feet or more with trunks of 3 feet. On young trees, the bark is smooth and light gray, often becoming warty on older trees. The thick, leathery-evergreen leaves are yellow-green and spiny. Bright red to orange or yellow berries stay on the female trees throughout the winter.

American Holly *(Ilex opaca)*

Sweet Gum *(Liquidambar styraciflua)*

Sweet or Red Gum often shoots past 100 feet in height and 3 feet in diameter, but in West Virginia it is usually smaller. It's a distinctive tree on river bottomlands in the southern half of the State.

On young trees, the smooth bark is light gray, but on older trees it becomes more furrowed. The long stemmed, star-shaped leaves have five to seven lobes and grow on twigs that may have corky wings. The 1-inch spherical fruits are made up of horn-tipped capsules.

Sweet Gum
(Liquidambar styraciflua)

American Sycamore
(Platanus occidentalis)

American Sycamore *(Platanus occidentalis)*

The American Sycamore has the largest trunk of any North American hardwood with diameters of up to 14-feet and heights of 140-feet. The trunk is covered by thin bark that scales off, leaving yellowish, greenish or white blotches.

The sycamore's leaf stalk covers the bud and supports a three- to five-lobed blade. In early spring, each leaf has two coarse-toothed leaflets at the base. The 1-inch seed ball dangles from a long, slender stem.

Crab Apple *(Pyrus coronaria)*

Usually found growing in thickets, the Crab Apple is a small tree, about 15 or 25 feet, with a 1-foot trunk. The bark is brownish-gray with flat, scaly ridges.

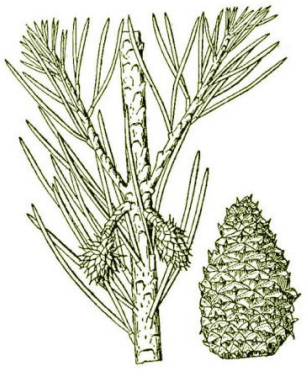
To spot a Crab Apple, look for irregularly toothed, oval leaves; red buds; fragrant, rosy-white flowers; and, sour yellowish-green fruit. The twigs bear short, spine like twigs.

Crab Apple
(Pyrus coronaria)

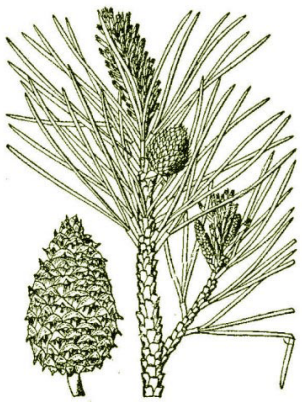
Virginia Pine *(Pinus virginiana)*

The Virginia Pine is probably West Virginia's most common pine. It grows well in many kinds of soils, including some of the poorest in the State. You may have heard it called by other names, including old field pine, Jersey pine, bull pine, black pine or scrub pine. Larger trees may be more than 50 feet high and 2 feet in diameter. The bark is dark, almost black, with a shallow furrow.

The best characteristic of the Virginia Pine is the clusters of two, short, twisted, pale yellow needles. The cones are 2 to 3 inches long and have a persistent prickle at the tip and a purplish-brown band across the inner tip of each scale. Empty cones may stay on the tree for up to 10 years – and commonly hang on for at least five years.



Virginia Pine *(Pinus virginiana)*



Pitch Pine *(Pinus rigada)*

Pitch Pine *(Pinus rigida)*

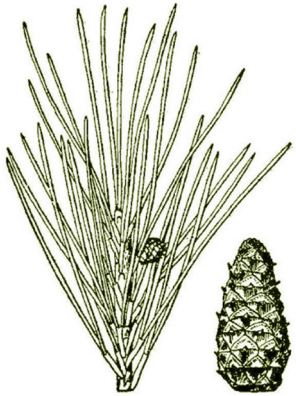
Most of the broad-topped pines with dead branches you see growing on dry, rocky hillsides and cliffs are Pitch Pines. These are the only pines in the northeastern United States with three needles to a cluster. Each needle is stiff, blunt and dark yellow-green.

Pitch Pine is the only native pine that sprouts from the stump after the tree is cut. The reddish-brown bark separates into large irregular plates on older trees, and the cones are 2 to 3½ inches long with a stiff persistent prickle.

Shortleaf Pine *(Pinus echinata)*

Shortleaf Pine is a tall, straight tree that may grow up to 100 feet with a diameter of up to 40 inches. The bark breaks in more or less rectangular plates on older stems. The dark yellow-green leaves usually grow in twos, but they also grow in threes near the tips of the branches.

Mature cones range from 2 to 3 inches in length and each scale is armed with a small, often deciduous prickle. Not at all common in West Virginia, the Shortleaf Pine is scattered throughout the State's eastern and southwestern counties.



Shortleaf Pine *(Pinus echinata)*

Table Mountain Pine
(Pinus pungens)

Table Mountain Pines usually are rather small trees that grow in poor, dry, rocky soil in the State's eastern counties. They may grow as high as 70 feet with a diameter of 3 feet in more southern states.

The leaves of this pine grow in twos and are very stiff and sometimes twisted. The large cones grow in clusters and each scale is tipped by a thick spur. On older trees, the bark is broken into irregular, red-brown plates.

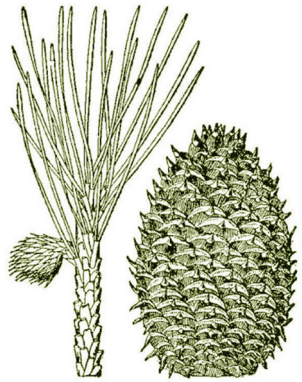


Table Mountain Pine
(Pinus virginiana)

Our native pines are often called hard or soft pines. The difference being hard pines have needles in twos or threes while soft pines have needles in fives.

Scots Pine, Austrian Pine and Mugho Pine

These three exotic pines are often imported into West Virginia. All three are two-needled.

Scots Pine has reddish bark with stout, 2-inch, and often twisted, blue-green needles with sharp points.

Austrian Pine has brown bark with sharp 5-inch needles.

Mugho Pine is a low, spreading shrub-like pine used around homes and in cemeteries as an ornamental.

Scots Pine

Austrian Pine

Mugho Pine

Red Mulberry *(Morns rubra)*

In West Virginia, Red Mulberry is usually about 30 feet high with a 1-foot trunk that branches near the ground into several stout branches. The bark is reddish-brown and separates into long plates.

Look for the rough, coarse-toothed, 3- to 5-inch leaves. They are broadly oval, have a milky juice and are variably lobed. Its fruit is a sweet, juicy, edible berry that looks a lot like a blackberry.

Red Mulberry *(Morns rubra)*

Tulip Poplar
(Liriodendron tulipifera)

Tulip Poplar *(Liriodendron tulipifera)*

The Tulip or Yellow Poplar has a tall, straight trunk that furrows into long ridges but on young trees its smooth and green with whitish stripes. The lobed leaf has a broad, shallow notch at the tip, which makes it look square. Look also for its "duck bill" shaped bud.

Pawpaw *(Asimina triloba)*

Pawpaw or Custard Apple is a small tree, up to 35 feet with a 12-inch trunk. On young trees the bark is smooth with gray blotches, but on older trees 6- to 12-inch leaves are pointed at each end and widest just above the middle.

Showy brownish-purple flowers produce greenish yellow fruits that look like stubby bananas.

Pawpaw *(Asimina triloba)*

Sassafras
(Sassafras albidum)

Sassafras *(Sassafras albidum)*

Usually a shrub or small tree, Sassafras can reach 60 to 70 feet with diameters up to 4 feet. Its reddish brown bark is deeply furrowed into flat ridges and the twigs are green. You may find three kinds of leaves on a single branch; oval, lobed (like a mitten with a thumb) and lobed on both sides. All three are wedge shaped at the base, however. Blue, cherry-like fruits sit in red, fleshy "cups" much like an egg in an egg-cup.

Tulip or Yellow Poplar is West Virginia's tallest and most handsome tree. Bees make delicious honey from nectar gathered in the greenish-yellow tulip-like flowers.

Chinquapin *(Castanea pumila)*

Chinquapin is a shrub or small tree that grows up to 25 feet tall with diameters of 1 to 2 inches. The brownish bark is shallowly furrowed into wide flat ridges. The coarsely-toothed, 2-to 6-inch long leaves taper both ways and have a wooly down on the under-surface. A single brown nut is borne in a spiny husk. It is most common in the southern part of the State.

Chinquapin
(Castanea pumila)

Black Gum
(Nyssa sylvatica)

Black Gum (Nyssa sylvatica)

Black or sour gum is a medium-sized tree that grows up to 60 feet high with an 18 to 20 inch trunk. The dark-gray trunk is deeply grooved in an "alligator-hide" pattern and supports an irregular crown that contains hundreds of short-stout twigs. A shiny, dark-green color is characteristic of the 2-to 5-inch, untoothed, oval leaves. The fruit is dark blue and berrylike.

Hackberry *(Celtis occidentalis)*

This 60-foot tree with a trunk of 14 inches is also known as Sugarberry or Hoop Ash and is easily identified by its bluish-gray, warty bark and by witches' brooms (thick clusters of twigs) usually found throughout the crown.

The thin, light green leaves are usually lopsided at the base, coarsely toothed along the upper two-thirds, rough above and tapered to a long, sharp point. Three rather prominent veins branch from the base. Dark purple, cherry-like fruits on long stems ripen in the fall.

Hackberry
(Celtis occidentalis)

SPRUCE

West Virginia has one native spruce, the Red Spruce, although Norway Spruce and Blue Spruce are common as imported specimens.

Red Spruce *(Picea rubens)*

Red Spruce is the most common tree in West Virginia's northern evergreen forest that caps our higher mountains. This tree originally covered nearly 469,000 acres — about 1/32 of the total area of the State.

The short, needle-like leaves are stiff, sharp and somewhat four-sided. Each needle sits on a tiny peg that extends from all sides of the orange-brown, hairy twig. The reddish-brown cones are from 1¼ to 2 inches long with very thin scales. Bark patterns vary in young to old trees, but the outer layers usually separate into small, thin, closely attached, reddish brown to gray segments.

The gum that often oozes from wounds in the Red Spruce was once collected, rolled in sugar and sold as 'State of Maine Pure Spruce Gum', the original chewing gum.

Red Spruce *(Pica rubens)*

Norway Spruce & Cone

Norway Spruce & Blue Spruce

Norway Spruce is easily identified by its yellowish-green leaves (needles) and the long cones that can be up to 7 inches long.

Blue Spruce & Cone

You can identify Blue Spruce by the blue leaves on new growth and by its smooth, hairless twigs.

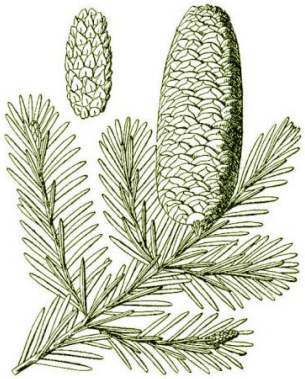
Both are often imported and planted as ornamentals.

Eastern Red Cedar
(Juniperus virginiana)

Eastern Red Cedar
(Juniperus virginiana)

Red Cedar in West Virginia usually is a small, slow-growing tree that seldom grows more than 25 or 30 feet and 7 to 8 inches in diameter, although it can grow more than 100 feet high and more than 2 feet wide.

This tree grows in a variety of soils but does best on a light loam of limestone origin. Usually, you'll see a Red Cedar growing alone or in small patches along fences, on dry ridges or in abandoned pastures. Leaves (needles) are scale-like and grow in pairs and a small black gland or pit may occur on the back of each scale leaf. On young trees and on new growth, you'll find sharp-pointed, ½ inch long leaves. The fruit is like a round blue-berry and the male flowers usually grow on separate trees. Cedar bark is thin and reddish-brown, and on older trees, it may separate into shreddy strips.



Balsam Fir *(Abies balsamea)*

Balsam Fir *(Abies balsamea)*

Balsam Fir, often called blister pine in West Virginia, is a medium-size tree with a tall, straight trunk and slender, regularly whorled branches. Large trees may be more than 100 feet high and 3 feet in diameter. Relatively scarce, it grows in damp woods and swamps at high elevations, mainly in Grant and Randolph Counties. The sessile leaves (needles) – are flat, rounded or slightly notched at the tips, dark shiny green above and pale green or whitish with two white lines below.

The twigs are smooth and, after the leaves drop, are marked with tiny, circular scars. The upright cones disintegrate on the trees, and on young trees the bark is thin and smooth, marked with conspicuous blisters or warts that contain oily resin.

Twelve conifers native to West Virginia have needle-like or scale-like leaves. While 11 are evergreen, one does drop its needles in the fall.

MISCELLANEOUS HARDWOODS

Black Willow *(Salix nigra)*

Black Willow *(Salix nigra)*

Black Willow is the only native tree-size willow in West Virginia. Although it grows almost anywhere, it's shallow roots need continuous moisture during the growing season and, therefore, it's most often found on riverbanks and in bogs and swamps. Large trees may be more than 40 feet high with trunks up to 2 feet.

The black bark is deeply furrowed into broad connecting ridges. The 3- to 6-inch leaves are seldom wider than ¾ of an inch and taper to a point. They are finely toothed and usually have two smaller leaves, which actually are stipules, at the base.

Weeping Willow (Salix babylonica)

Weeping Willow is an Asian native but is widely planted as an ornamental. The best characteristic is its long, drooping yellow twigs.

American Beech
(Fagus grandifolia)

American Beech *(Fagus grandifolia)*

American Beech, a major part of the northern hardwood forest, can reach 80 feet with trunks up to 40 inches. A thin, smooth, whitish-gray bark is often misused – for carving initials!

The leaves taper both ways to create an eye shaped or elliptical form, and they are pointed and coarse-toothed with in-curved teeth in which the veins end. The three-sided nuts grow in prickly burs.

American Chestnut *(Castanea dentata)*

Once abundant in West Virginia, American Chestnut has nearly been eliminated by a fungus disease, Chestnut Blight. Root sprouts persist and often produce fruit, however. It grows from 60 to 100 feet with trunks of up to 5 feet. Its moderately rough gray-brown bark has shallow fissures.

The 6- to 8-inch leaves taper both ways and bear coarse in-curved teeth. A large, spiny bur opens along four seams in the fall to expose up to five chestnuts.

American Chestnut
(Castanea dentata)

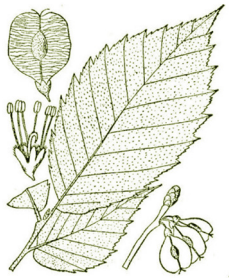
American Hornbeam
(Carpinus caroliniana)

American Hornbeam – also called Blue Beech, Muscle Wood or Water Beech – is only about 10- to 30-feet high with an 8-inch trunk that is ridged, corded and covered with a thin, tight, bluish-gray bark.

Hornbeam leaves are egg-shaped, double-toothed and tapered. The fruit is a small nut that grows in clusters.

American Hornbeam
(Carpinus caroliniana)

THE ELMS



Slippery Elm *(Ulmus rubra)*

Slippery Elm *(Ulmus rubra)*

Slippery Elm grows up to 50 feet with a 2-foot trunk and large, stout limbs that spread out in an open, flat-topped crown. The thick, rough, reddish to gray-brown bark furrows into ridges. It's the inner bark that suggests the name Slippery Elm.

Each leaf is broadly oval, pointed and doubly toothed with a lopsided base and a rough, hairy surface. A single seed grows in a hair-covered cavity in the center of a circular wing.

American Elm *(Ulmus americana)*

The stately, vase-shaped American Elm is about 60 feet high with a 3-foot trunk, although much larger trees have been recorded. The deeply furrowed, rough, dark gray bark is made up of interlayered red and white zones.

Its lopsided, double-toothed, pointed leaves are slightly rough on the upper surface; soft and hairy underneath. A single seed grows in the center of a circular wing, which is hairy along the margins and notched at the tip.

American Elm
(Ulmus americana)

Elm leaves are double-toothed and pointed with a lopsided base and rough surface.

Hemlock *(Tsuga canadensis)*

Eastern Hemlock grows along streams in West Virginia. Although trees 6 feet in diameter were common in the virgin forest, today West Virginia's hemlocks are about 60 to 70 feet high and up to 2 feet in diameter.

The leaves are flat and blunt, and they appear to grow only from two sides of the twig. Each is attached by a tiny, thread-like stalk easily seen if the needle is pulled from the twig. Each needle is dark green with a groove on the top and two white lines underneath.

The top shoot is limber and droops. The hemlock's cones are small, short-stalked, about ½ to ¾ inches long and have thin, rounded scales. Mature bark is reddish or grayish-brown, and on older trees is furrowed into broad ridges.

Hemlock *(Tsuga canadensis)*

LARCH

West Virginia is home to one larch tree, the Eastern Larch, which grows in only one county. Two other exotic larches, however, are imported and planted in West Virginia: European Larch and Siberian Larch.

Eastern Larch
(Larix laricina)

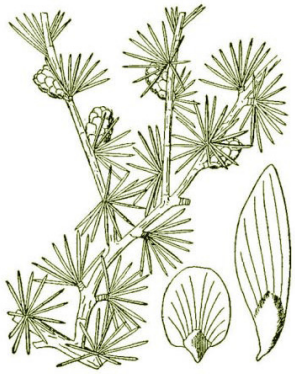
Eastern Larch is the only native, cone-bearing tree that sheds its leaves each fall. You can easily identify it by the leaves that grow in a brush-like cluster of 12 to 20 on the older twigs – singly on new shoots.

The southernmost known stand and the only location in West Virginia is in Cranesville Swamp in Preston County. The cones are about ½ inche long and are made up of about 20 scales.

European Larch, Siberian Larch

European Larch is a large tree that can be separated by the cones that are an inch or more in length and by its yellowish twigs.

Siberian Larch has yellowish-gray twigs and cone scales that are somewhat downy on the outside.



Eastern Larch *(Larix laricina)*

You'll often find three yews in West Virginia, one native – the American Yew – and two imported – Japanese Yew and English Yew.

YEW

American Yew *(Taxus canadensis)*

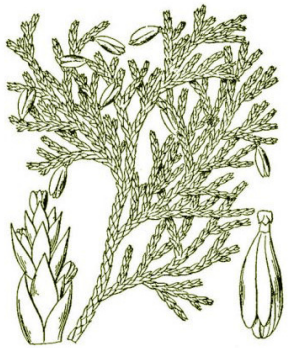
Also called ground hemlock, the American Yew is a low straggling shrub that grows in mountainous, rocky woods, often under other evergreens. It's never common, but it may be abundant in some locations.

The inch-long leaves are sharp and grow in thread-like stems. Although often confused with hemlock, the American Yew does not have the two white lines on the under surface nor are they blunt. The cup-like fruit is red to deep pink with black seeds in the bottom.

American Yew
(Taxus canadensis)

Japanese Yew, English Yew

These two ornamentals are hard to separate, but try this: if the leaves gradually taper to a point, you have an English Yew. If the leaves narrow abruptly at the tip into a prolonged tip, then it's a Japanese Yew.

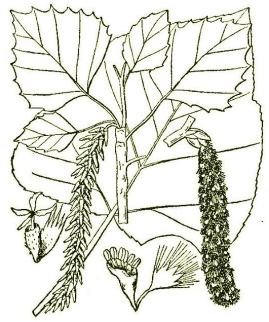


Aborvitae
(Thuja occidentalis)

Aborvitae *(Thuja occidentalis)*

Arborvitae, often called eastern white cedar, is a small tree located along riverbanks and rocky hillsides in the eastern counties. The trunk, seldom more than 40 feet high and 1 foot in diameter, tapers and is usually twisted. The reddish-brown bark is thin and shreddy with a network of narrow ridges and shallow furrows on the older trunks.

Scale-like, round-tipped leaves press closely against the twig in overlapping pairs with each pair turned at right angles to the pair above and below it. The branchlets or twigs are flattened and appear as drooping, fan-shaped sprays. Lance-shaped, sharp leaves may grow on young, vigorously growing shoots, and the small cones are made up of four fertile scales.



Big-Toothed Aspen
(Populus grandidentata)

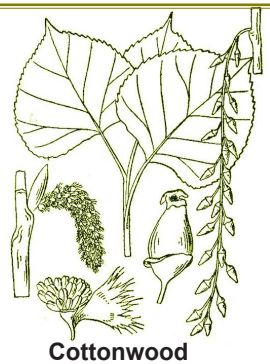
Big-Toothed Aspen *(Populus grandidentata)*

A common invader of old fields, the Big-Toothed Aspen is about 50 or 60 feet high with a diameter of 18 to 20 inches. The greenish-gray bark is marked with dark, diamond-shaped blotches. On older trees, the bark is black and deeply furrowed near the ground.

The circular, coarse-toothed leaves are about 2 to 4 inches long and grow on long, flattened stalks.

Cottonwood *(Populus deltoides)*

West Virginia's largest aspen or poplar is Cottonwood, which grows in the Ohio Valley and Eastern Panhandle. This tree may grow as high as 100 feet with a diameter of 5 feet. The deeply fissured bark forms parallel, often connected ridges. Its leaves are triangular, coarsely toothed, except at the base and tip, and grow on a long, flattened stem.



Cottonwood
(Populus deltoides)

THE HORNBEAMS

Hornbeam leaves are egg-shaped, double-toothed and tapered. The fruit is a small nut that grows in clusters. The Hop Hornbeam has brown bark, while the American Hornbeam's trunk is covered with a thin, tight, bluish-gray bark.

Hop Hornbeam *(Ostrya virginiana)*

A small tree that seldom passes 25 feet with a 10-inch trunk, Hop Hornbeam or Ironwood grows mainly in dry soil. It takes its name from its fruit – a small nut that grows in oval, bladder-like sacs in elongated clusters and resembles hops.

The brown bark splits into loose, elongated, shreddy scales. Its egg-shaped leaves taper to a sharp point and are double-toothed.

Hop Hornbeam
(Ostrya virginiana)

Choke Cherry *(Prunus virginiana)*

Choke Cherry is little more than a shrub in West Virginia found mostly in the mountains. The 2- to 4-inch leaves are toothed and usually widest above the middle. Dark red ⅓-inch cherries ripen in the fall.

Choke Cherry
(Prunus virginiana)

Fire Cherry
(Prunus pensylvanica)

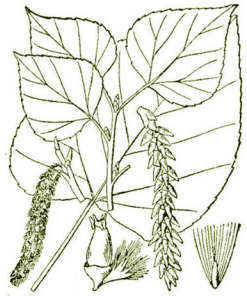
Fire Cherry *(Prunus pensylvanica)*

Fire Cherries reach heights of 30 feet and diameters of 10 inches. Common in the mountains, these trees grow in new clearings, road banks and burned areas. The thin bark is smooth and reddish with prominent horizontal corky areas. The round-based, pointed, fine-toothed leaves are 2 to 4 inches long. Light red ¼-inch cherries ripen in early fall in compact clusters.

THE ASPENS OR TRUE POPLARS

Trembling Aspen *(Populus tremuloides)*

Trembling Aspen may reach 40 or 50 feet with an 18-inch trunk, but it seldom grows taller than 20 feet with a 6-inch trunk in the mountains of West Virginia – the southern edge of its natural range. The bark is yellowish-green and marked with dark, warty bands. The 2-inch, nearly circular leaves are finely toothed and grow on long, slender, flattened stalks that allow them to tremble at the slightest breeze.



Trembling Aspen
(Populus tremuloides)

West Virginia's largest aspen or poplar is Cottonwood, which grows in the Ohio Valley and Eastern Panhandle. This tree may grow as high as 100 feet with a diameter of 5 feet.

THE OAKS

All of the oaks in West Virginia are deciduous trees with alternate, simple leaves that are either lobed or toothed, with one exception. The twigs have a star-shaped pith, several buds grow at the tip of each twig and the fruit, of course, is the acorn.

While plant scientists have a different name for each kind of oak, lumber operators usually consider only white oak and red oak – so they include several species under each heading. And generally, each group does have unique characteristics.

All red oak leaves have bristle-tipped lobes, the pores in the wood are open tubes and the acorns are bitter, with an inner fuzzy shell (and they stay for two years on the tree before they're mature).

On the other hand, white oak leaves are rounded without bristles, the pores in the wood are not open but are filled with natural materials called "tyloses" and the acorns are sweet with a smooth inner shell (and they mature in one year). White oak acorns drop off and sprout in the fall. Red oak acorns drop off in the fall but don't germinate until spring.

GIANT OAKS FROM TINY ACORNS GROW.

Oaks make up nearly 60 percent of all the trees growing in West Virginia. They grow in nearly every environment except on the highest mountain tops in the evergreen forest.

White Oak *(Quercus alba)*

White Oak is not only the most valuable oak, but it's an outstanding tree. It grows best in rich, well-drained soil, especially on the western slopes of the Alleghenies. One of the giants among oaks was the Mingo White Oak, which grew near the head of Trace Fork of Pigeon Creek in Mingo County. This oak was 145 feet tall and its limbs spread out 96 feet. It was 27⅓ feet in diameter at the ground and the first limb was 66 feet above the ground – where the diameter was still 4 feet. Foresters tell us it had about 10,000 board feet of lumber. The tree was 582 years old when it died in the late 1930s.

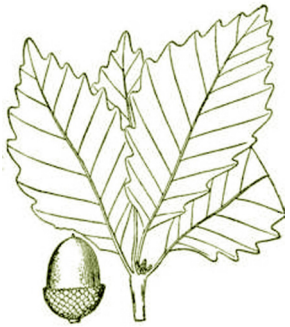
White Oak *(Quercus alba)*

White Oak is very easy to identify. The 4- to 9-inch long leaves have at least 5 and up to 9 rather deeply cut, rounded lobes. The light ashy to whitish-gray bark is divided into irregular plates and the 1-inch acorns have a thick, knobby cap.

Chestnut Oak *(Quercus prinus)*

Usually found in dry, rocky ridges, the Chestnut or Rock Oak is a small tree of the white oak group. Usually the trunk divides into several large limbs just a few feet above the ground.

From a distance, the coarsely scalloped, 5- to 9-inch long leaves have a cupped appearance. They have a faint resemblance to American Chestnut leaves, which is where the tree gets its common name. The thick, deeply furrowed bark is deep gray or nearly black and resists fire well. It is rich in tannin and has been used in the tanning industry. Rich brown acorns capped by a thick, rough, warty cap grow in pairs on stout stems.



Chestnut Oak *(Quercus prinus)*

Swamp White Oak
(Quercus bicolor)

Swamp White Oak *(Quercus bicolor)*

Swamp White Oak is a medium-size tree about 60 or 70 feet high and 2 or 3 feet in diameter. It has a poorly pruned stem and an irregular crown. The Swamp White Oak is uncommon in West Virginia, except along ponds and streams in the Eastern Panhandle, where it is harvested as white oak.

The bark looks a lot like White Oak and the 5- to 6-inch long leaves, dark green above and downy white underneath, are somewhat wider at the top and shallowly lobed like Chestnut Oak. The long-stalked acorn and small, crooked branchlets that hang from the larger limbs also help you identify this tree.

Bur Oak *(Quercus macrocarpa)*

Although Bur Oak is found only along streams in West Virginia's Eastern Panhandle, it is one of the most drought-resistant species. The average tree is about 75 feet high with a diameter of 3 feet, but some trees have been found in other states 180 feet high with diameters of 7 feet.

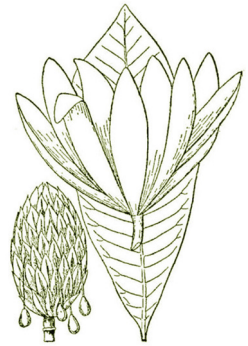
The Bur Oak has the largest of all oak leaves, ranging from 7 to 12 inches, as the leaves are very unsymmetrical and usually have five to nine lobes. The central pair of notches are cut nearly to the mid-vein.

The large acorn has a heavily fringed cup that grows over nearly three-fourths of the nut. The twigs often have corky ridges and the deeply furrowed bark resembles the White Oak.

Bur Oak
(Quercus macrocarpa)

Umbrella Magnolia *(Magnolia tripetala)*

A small tree, the Umbrella Magnolia grows from 25 to 50 feet high and to 8 to 15 inches in diameter. It's covered by a smooth, light-gray bark and sports large leaves – 12 to 25 inches long – that are pointed at both ends and arranged in whorls near the ends of the branches. The fruit is a 2- to 4-inch cucumber-like cone with small, flat red seeds.



Umbrella Magnolia
(Magnolia tripetala)

Mountain Magnolia
(Magnolia fraseri)

Mountain Magnolia *(Magnolia fraseri)*

Although Mountain Magnolias are usually small, it's not unusual to find a 40-foot tree with a 10-inch trunk. The tree's bark is light brown and smooth, and the shovel-shaped leaves are eared at the base. The cone-like fruit has sharp, pointed scale leaves.

THE CHERRIES

Black Cherry *(Prunus serotina)*

Black Cherry is easy to recognize because of its long, straight shoots that come off the straight trunk at a slight angle. These trees may reach 60 to 75 feet with trunks of up to 4 feet, and the bark is dark reddish-brown to almost black with brittle scales turned up at the edges. The pointed, oval, dark green leaves range from 2 to 6 inches and have in-curved teeth along the margins. Purplish, pea-size cherries grow in drooping clusters, and the twigs taste bitter and have an almond-like odor.

Cherries have bark that peels horizontally like a birch, but cherry leaves have noticeable glands on the upper part of the leaf stalk.

Black Cherry
(Prunus serotina)

Box Elder *(Acer negundo)*

Box Elder or Ash-Leaved Maple is West Virginia's only native maple with compound leaves. Found along streams, it is a small to medium size tree of 30 to 50 feet with trunks of about 1 foot. The trunk is often short and a few feet above the ground it generally divides into several limbs, which give the tree a bushy effect.

The bark is light-brown to dark gray and on older trees is furrowed into flat-topped ridges. The twigs are bright green. Each leaf has three or five coarse-toothed, often lobed leaflets growing from a bright green twig. Box Elder fruits mature in autumn and each pair is V-shaped.

Box Elder *(Acer negundo)*

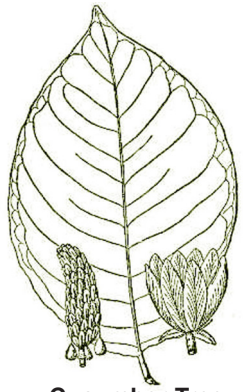
Exotic Maples — Norway Maple, European Maple, Oriental Maple

Norway Maple is often imported into West Virginia as an ornamental tree. It's different from native maples because its leaves have five to seven lobes with smooth margins and a milky sap. For accurate identification, pull off a leaf and look for a milky ooze at the end. Several European and Oriental maples are also used as ornamentals in West Virginia.

THE MAGNOLIAS

Cucumber Tree *(Magnolia acuminata)*

Cucumber Trees reach 100 feet with diameters of 2 to 4 feet and are most common in the northern hardwood forest. The long, clear, straight trunk is covered by a light brown bark with narrow furrows. The 6- to 10-inch leaves are pointed at both ends, smooth on the margins and slightly hairy underneath. The 3-inch fruit resembles a knobby cucumber and has red seeds. Also distinctive is its white, hairy bud.



Cucumber Tree *(Magnolia acuminata)*

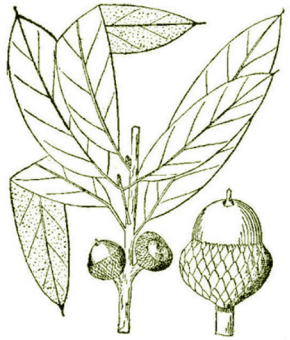
Oak twigs have a star-shaped pith, several buds grow at the tip of each twig and the fruit, of course, is the acorn.

Post Oak *(Quercus stellata)*

Although a large tree farther south, Post Oak is usually smaller in West Virginia, standing about 50 feet tall and 1 foot in diameter. It grows in dry, gravelly or sandy soils and rocky ridges.

The thick, leathery, irregularly lobed leaves have two large middle lobes opposite each other, which form a "cruciform" or "cross" pattern. The bark greatly resembles the White Oak but often has a reddish tinge. The twigs are matted with yellowish-brown woolly hairs.

Post Oak *(Quercus stellata)*



Shingle Oak
(Quercus imbricaria)

Shingle Oak *(Quercus imbricaria)*

Shingle Oak takes its name from the early pioneers, who used its wood to make split shingles. Usually, this tree grows 30 to 44 feet with a diameter of 1 to 2 feet in West Virginia. Some may grow 100 feet high and 3 to 4 feet around. The bark is dark and light with shallow furrows.

When young, the lower limbs often droop all the way to the ground. The 4-to 6-inch leaf is entirely unlobed, and turns red on the upper surface before falling in late autumn. The acorns are a dark, chestnut brown, often marked with parallel stripes, and with a thin bowl-like cup that encloses about a third of the nut.

All of the oaks in West Virginia are deciduous trees with alternate, simple leaves that are either lobed or toothed, with one exception, the Shingle Oak.

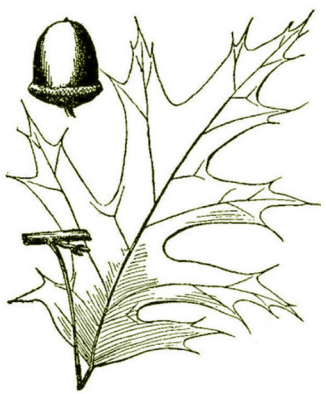
Pin Oak *(Quercus palustris)*

Pin Oak *(Quercus palustris)*

Pin Oak, with its lower limbs directed down, often to the ground, is a pleasing tree and one of West Virginia's best ornamental oaks. It is a bottomland species that grows in swamps and around ponds, but it grows well in any soil once it's established. The Pin Oak grows well in cities, too, because of its apparent resistance to smoke.

The leaves are anywhere from 3 to 5 inches long with 5 to 9 lobes and deeply cut notches. It rarely grows higher than 80 feet nor wider than 3 feet. Pin Oak has a small acorn, which helps you separate it from close relatives. The acorns are reddish brown, broader than long and enclosed at the base in a flat, saucer-shaped cup. The bark is thin, grayish-brown and shallowly fissured.

While plant scientists have a different name for each kind of oak, lumber operators usually consider only white oak and red oak – so they include several species under each heading.



Red Oak *(Quercus rubra)*

Red Oak *(Quercus rubra)*

Red Oak is common and easy to identify. It grows from 60 to 100 feet high and its trunk is about 2 to 5 feet in diameter. The leaves, which turn red in the fall, are a deep, dark green color above and paler below with seven to eleven unequal bristle-tipped lobes tapering from broad bases.

On young trees, the bark is smooth and greenish-brown, but it soon darkens and breaks into hard, flat-topped scaly ridges that are lighter in color. These white lines throughout the smooth bark of the upper two-thirds of the trunk are the best way to identify this tree. The inner bark has a pale, pinkish tinge.

Each acorn is fitted with a shallow, saucer-like cap that encloses just the base of the nut. Red Oak is very susceptible to fire and all species in the red oak group are very susceptible to oak wilt.

All red oak leaves have bristle-tipped lobes, the pores in the wood are open tubes and the acorns are bitter, with an inner fuzzy shell (and they stay for two years on the tree before they're mature).

Sugar Maple *(Acer saccharum)*

Sugar Maple *(Acer saccharum)*

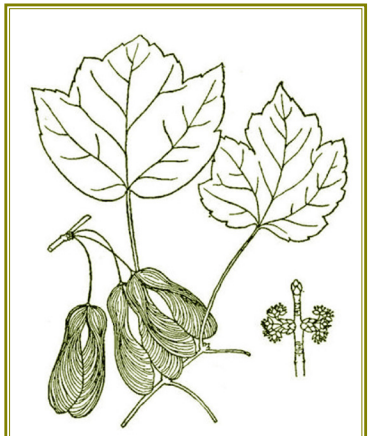
Sugar or Hard Maple is one of West Virginia's largest hardwoods, averaging about 80 to 90 feet high with diameters of 2 to 3 feet. Some exceptional trees may be 5 feet in diameter. The Sugar Maple is important to the northern hardwood forest and does well above 2,500 feet.

Its five-lobed leaves have rounded notches and smooth edges. One good characteristic is the tips of the lobes – they are pulled out in long, sharp points.

On young trees, the bark is gray and smooth, but on older trees it is furrowed and even scaly. Most large, open-grown trees have had their tops blown out by windstorms.

Although all maples have sugary sap, Sugar Maple is the principal source of maple syrup and sugar. The fruit, which matures in the fall, grows in dense clusters.

Maples are deciduous trees with variously lobed leaves growing opposite one another on the twig. Their seeds grow in pairs and have large terminal wings - a favorite of children everywhere.



Red Maple *(Acer rubrum)*

Red Maple *(Acer rubrum)*

Red or Soft Maple is usually found in poorer mountain soils, although it grows well elsewhere. Its name is appropriate; the buds, flowers, fruits and the leaves (in fall) are red. This tree can grow up to 70 or 90 feet with trunks of 3 to 4 feet. The bark is first smooth and light gray, but as the tree ages, it darkens and breaks into long, narrow, scaly plates.

The three-lobed and occasionally five-lobed leaves have V-shaped notches and toothed edges. When you look at the underside the leaf – it will appear white when contrasted to the deep green of the upper leaf. The wings of the spring-maturing seeds are ½- to ¾-inch long and form a V.

THE MAPLES

Striped Maple *(Acer pensylvanicum)*

Striped Maple
(Acer pensylvanicum)

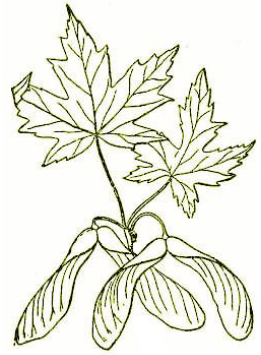
Striped Maple, often called Moosewood or Goosefoot Maple, is a tall shrub or small tree found in the higher mountains. Its stubby trunk usually splits into several limbs just a few feet from the ground. This tree takes its name from the smooth, green bark decorated with vertical white streaks. It's leaves, which appear droopy, have three lobes with sharp points, very shallow notches and coarse teeth around the edges. Using a little imagination, it's easy to see how the leaves look like a goose's foot. Its other common name arose because moose supposedly feed on the leaves in the northern states and Canada.

The reddish-brown seeds, with ¾-inch wings grow along a central stem and mature in the fall.

Mountain Maple
(Acer spicatum)

Mountain Maple *(Acer spicatum)*

Our smallest maple tree, the Mountain or Dwarf Maple, seldom grows higher than 20 feet or wider than 6 inches and is mostly limited to the higher mountains. Its three-lobed leaves are very coarsely toothed and somewhat hairy underneath. The bark is thin and reddish to grayish-brown, and the bright red seeds with a ½-inch wing mature in the fall. In Pocahontas County, this tree is known as Elkwood.



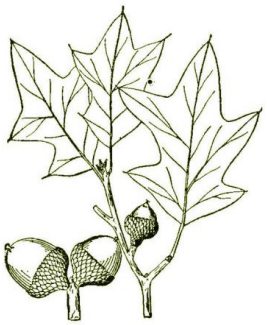
Silver Maple
(Acer saccharinum)

Silver Maple *(Acer saccharinum)*

Because Silver Maples grow quickly and sport such handsome leaves, it has become a popular lawn tree, although it usually grows in deep, rich, moist soils, such as in bottom lands or on islands. Silver Maples may reach 60 to 80 feet with diameters of 2 to 4 feet. Young trees have thin, gray bark with a reddish tinge, but this soon darkens and becomes furrowed and scaly.

The soft wood is brittle, and wind and ice storms easily can damage the crown. Its five-lobed leaves are silvery-white underneath and have deep, narrow notches and a toothed margin. The wings of the spring-maturing seeds are about 2 inches long.

Scrub Oak *(Quercus ilicifolia)*



Scrub Oak *(Quercus ilicifolia)*

Scrub Oak is usually a shrub in West Virginia, although trees up to 15 inches in diameter have been found in Hardy County. Most, however, are anywhere from 4 to 20 feet high and 2 to 6 inches in diameter. The crown is made up of short, stiff branches that sport small, 2- to 5-inch, usually five-lobed leaves. The underside of each leaf is covered with a dense white fuzz and in the fall they turn red and hang on the tree, thus giving rise to the name "red brush".

Scrub Oak is valuable as a soil cover and for wildlife food. The small, often striped acorn is about half covered by the cup, which has a loose fringe of scales.

Chinquapin Oak
(Quercus mulhlenbergii)

Chinquapin Oak *(Quercus mulhlenbergii)*

Chinquapin Oak is scattered throughout West Virginia, but near Lewisburg it often grows in sizeable stands along with White Oak. Usually it grows about 80 feel high with a diameter of 3 feet, but one tree in the University Arboretum at Morgantown has a diameter of 63 inches and has been acclaimed as the world's largest Chinquapin Oak. The leaves taper at both ends and have coarse teeth like Chestnut Oak leaves. The bark is similar to the White Oaks and the nearly inch-long acorn has a cup enclosing about half of the nut.

Black Oak *(Quercus velutina)*

Black Oak *(Quercus velutina)*

Black Oak is one of the largest and perhaps the most common of the eastern oaks. It averages 60 to 80 feet in height and 2 to 3 feet in diameter. In the lower Ohio basin, however, it may grow as high as 130 feet with a 5 foot diameter.

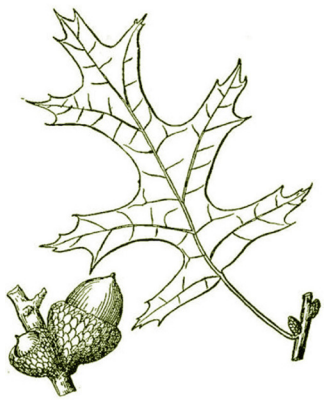
The, thick, leathery-appearing leaves usually have seven square cut bristle-tipped lobes, although nine are not unusual, with brown hairs at the vein connections on the lower surface. The bark is rough and black, even on the larger limbs, and is often furrowed into hard, narrow ridges. The tops of the ridges are not whitish as they are on Red Oak. The inner bark, which makes a good dye, is a distinct yellow-orange in contrast to the pink of Red Oak.

Black Oak acorns have a cap with a fringe of loose scales that encloses about three-fifths of the nut. Black and Red Oaks grow in the same general areas, and a hybrid between the two may be the most common oak we have today.

Scarlet Oak *(Quercus coccinea)*

Scarlet Oak grows on poor soils, where it grows 60 feet high and 2 to 3 feet in diameter. In good soil, however, it may be as high as 130 feet and as wide as 4 feet.

The thin leaves have five to nine deeply cut lobes which give the crown an open effect. On older trees, the bark is dark and rough, with a pinkish cast, especially on the lower 5 feet of the trunk. One very good identifying characteristic is that the lower limbs do not fall off easily when they die. Most Scarlet Oaks have a lower whorl of dead, drooping limbs. This oak's acorns have a deep cap like the Black Oaks except the scales on the lower ring are fused together. The acorn also is marked by circular lines around the tip.



Scarlet Oak *(Quercus coccinea)*

White oak leaves are rounded without bristles, the pores in the wood are not open but are filled with natural materials called "tyloses" and the acorns are sweet with a smooth inner shell (and they mature in one year).

Spanish Oak *(Quercus falcata)*

Spanish Oak *(Quercus falcata)*

Spanish Oak grows in dry, sandy soil in the southwestern counties, often in nearly pure stands. In general, it stands 60 to 70 feet high and averages 2 to 3 feet in diameter.

The Spanish Oak has two types of leaves, both with a rounded to wedge shaped base. One, however, has slender lobes with the end lobe somewhat curved like a scythe blade. The other is not so deeply cut and looks like the overall outline of a bell. A scaly, saucer-shaped cup covers about a third of the acorn. The bark is dark gray and rough with shallow fissures.

Yellow Birch *(Betula alleghaniensis)*

Yellow Birch is common in the higher mountains where it is a major part of the northern hardwood forest. Its name comes from the color of bark on young trees – a smooth, yellowish-brown marked by horizontal corky areas called lenticels. As the tree ages, the bark peels in papery curls. On very old trees, it is darker and broken into flat plates.

The leaves are oval, sharply pointed and coarsely doubled toothed – that is, with smaller teeth on the larger ones. The scales of the upright fruiting cones, which ripen in the fall, are hairy.

Yellow Birch
(Betula alleghaniensis)

Yellow Birch, the largest of the native birches, often reaches 100 feet with a diameter of 2 to 4 feet.

River Birch *(Betula nigra)*

River Birch *(Betula nigra)*

River or Water Birch is about 30 to 50 feet high with a diameter of up to 2 feet, and is found mainly along streams in the Kanawha drainage. It grows best on river bottoms subject to periodic flooding.

On young trees, the salmon-pink inner bark is exposed in wide curls, but, as the tree ages, the bark darkens and develops long fissures. The leaves are coarsely double-toothed and the base tapers to a wedge instead of being rounded. The "nutlets," which mature in early summer, feature hairy wings.

Paper Birch *(Betula papyrifera)*

Paper Birch is a northern tree that stands 60 to 75 feet with diameters of about 20 inches. In West Virginia, it's rarely more than 20 feet high. The shiny, curly, creamy to pinkish-white bark, decorated with black lenticels, makes identification easy. The oval leaves are tapered, basically heart-shaped at the base and sharply double toothed. Its cones droop in contrast to the upright cones of the other three natives.

Most of the State's Paper Bitches grow on North Fork Mountain in Pendleton County, near the Stony River reservoir in Grant County and along Trout Run in Hardy County.

Paper Birch
(Betula papyrifera)

Kentucky Coffee Tree
(Glymnocladus dioica)

Kentucky Coffee Tree
(Glymnocladus dioica)

Kentucky Coffee Trees may reach 75 feet in height and 2 feet in diameter, but they usually divide near the ground into 3 to 5 large upright limbs. The rough, brown bark features hard, scaly ridges, and its 1- to 3-foot long leaves are doubly-compound with 40 or more oval, sharp, toothless, short-stalked leaflets. The fruit is a broad, flat, purplish brown pod that can be 10 inches long; its seeds resemble coffee beans and have actually been substituted for coffee.

THE BIRCHES

West Virginia has four native birches although one, the Paper Birch, is rare. The State also is home to two or more foreign species that have been planted as ornamentals.

Birch bark peels horizontally and the trees have short, spur-like projections on smaller twigs and no terminal bud. Their tiny seeds grow in small, cone-like fruiting bodies.

Black Birch *(Betula lenta)*

Black Birch *(Betula lenta)*

Black or Sweet Birch is commonly found in the uplands in deep, rich soil. Usually around 50 to 70 feet tall and about 20 inches in diameter, if it's found in poor soil, it may be stunted and shrub-like.

The dark, aromatic bark doesn't split into layers like other birches. It's oval leaves are basically heart-shaped at the base, sharp at the tip and finely toothed along the edges. It's winter green-tasting twigs are sometimes used to make birch tea and birch beer, and the inner bark has a sweet taste in the spring. The scales of the upright fruiting "cones," which ripen in the fall, are hairless.

Blackjack Oak
(Quercus marilandica)

Blackjack Oak is very rare in West Virginia, but it does grow in dry soil in several eastern and southern counties. This tree is scrubby and has little value as timber. The leaves are nearly as wide as they are long, rounded and narrowed at the base, with about three broad, shallow lobes at the tip. A scaly cup covers about a third of the nut. The bark of the Blackjack Oak is dark and very rough with deep grooves.

Blackjack Oak
(Quercus marilandica)

Shumard Oak
(Quercus shumardii)

Shumard Oak
(Quercus shumardii)

Rare in West Virginia, the Shumard Oak grows in rich soil in several southwestern counties, mostly Wayne to Jackson Counties. The leaves have seven to nine lobes, each divided at least once and with many bristly tips. The inch-long acorn has a cup that covers about a third of the nut.

One of the giants among oaks was the Mingo White Oak, which grew in Mingo County. This oak was 145 feet tall and its limbs spread out 96 feet. It was 27⅓ feet in diameter at the ground and the first limb was 66 feet above the ground – where the diameter was still 4 feet! The tree was 582 years old when it died in the late 1930s.

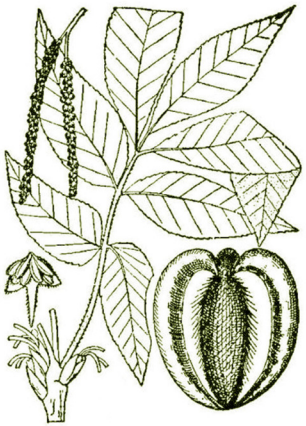
THE HICKORIES

Nearly everyone is familiar with one or two of the common hickories, but few know there are at least six different species in West Virginia. Hickories are medium to large deciduous trees with alternate, compound leaves on stout twigs. Most are found in the hardwood forests of the eastern United States, although there are one or two species in China. Few woods are tougher, harder or stronger than hickory.

Shagbark *(Carya ovata)*

Shagbark, the principal hickory in West Virginia, averages 60 to 80 feet high with a diameter of 1 to 2 feet. Usually found in valleys or on moist hillsides, it never grows in pure stands. The gray bark separates into long, shaggy plates that are loose and curve at both ends. Each compound leaf has five to seven leaflets. The rounded, thin-shelled, sweet nut is covered by a thick husk that splits nearly to the base when mature.

Shagbark *(Carya ovata)*



Shellbark *(Carya laciniosa)*

Shellbark *(Carya laciniosa)*

Shellbark is similar to shagbark. It is a large tree, growing 80 to 90 feet with diameters of 2 to 3 feet, and it's common in the rich, damp bottom-lands and coves of the Ohio River valley. The gray bark breaks into long, narrow, straight plates and each compound leaf has seven leaflets. The large, nearly 3-inch long nut is mostly shell, and when cracked, the small kernel is somewhat disappointing. The thick husk splits to the base of the nut.

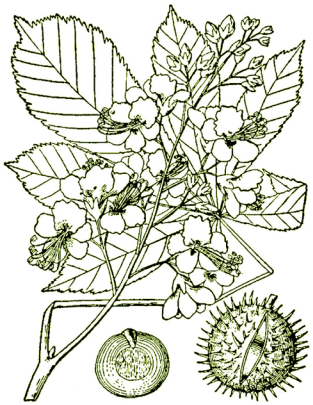
MISCELLANEOUS HARDWOODS WITH COMPOUND LEAVES

Buckeye *(Aesculus octandra)*

The common sweet or yellow Buckeye is a bottomland tree native to most areas west of the mountains. The only place it's known to grow east of the mountains is along New Creek near Keyser in Mineral County, where it's believed they were started in the late 1800s.

The Buckeye is a small to medium-size tree, seldom more than 50 feet high with a trunk of about 1 foot. The bark is smooth and light gray, and on older trees it breaks into irregular plates.

The yellow-green palmately compound leaves with five leaflets is about the only characteristic needed for summer identification. Long stalks of yellow flowers appear with the leaves and ultimately produce round, brown, leathery pods, each of which has from 1 to 4 "buckeyes."



Buckeye *(Aesculus octandra)*

The very similar Horse Chestnut was introduced from Europe and is used often as an ornamental. It differs primarily by having seven leaflets per leaf, spiny fruit pods and gummy buds.

Tree-of-Heaven
(Ailanthus altissima)

Tree-of-Heaven *(Ailanthus altissima)*

Tree-of-Heaven was introduced from Asia as an ornamental and is now established throughout West Virginia. It is a nuisance and can be classed as a weed. This small tree (30 to 40 feet high with trunks of up to 18 inches) has ashy-gray bark except on its thick, blunt twigs, which are a creamy brown.

The pinnately-compound leaves are large, 2 to 5 feet long, with 13 to 41 leaflets. Each leaflet is taper-pointed and has coarse teeth at the base with a gland or the lower side at each tooth. The male flowers and crushed leaves are smelly.

Tree-of-Heaven grows rapidly and is often advertised as producing shade in one year. The seeds grow in dense clusters in the center of a wing that is twisted like an airplane propeller.

LOCUSTS

Black Locust
(Robinia pseudoacacia)

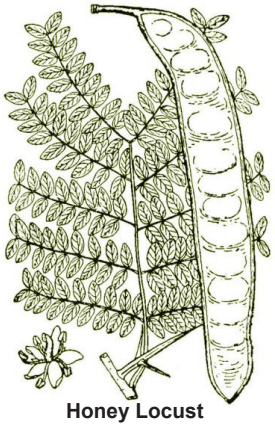
Black Locust is native to two separate and distinct areas – the central Appalachians and the Ozarks – but it grows most abundantly and the largest on the western slopes of the Alleghenies in West Virginia. Here it may reach 60 to 80 feet in height with diameters of 3 to 4 feet.

Its bark is brownish-gray, thick and deeply furrowed into rough, forked ridges. The pinnately compound leaves are made up of 9 to 19 thin, oval leaflets, with two sharp spines (modified stipules) at the base of each leaf. These are especially noticeable on sprouts.

Black Locust wood is hard, durable and used for fence posts. Young trees are often planted on spoil banks.

Black Locust
(Robinia pseudoacacia)

The creamy white flowers of the Black Locust are a source of honey and, when dipped in batter and fried, are a delectable food. They mature into 3-inch flat, bean-like pods with four to eight kidney-shaped seeds.



Honey Locust
(Gleditsia triacanthos)

Honey Locust *(Gleditsia triacanthos)*

Honey Locust is rather common as a scattered tree in wide river bottoms. It's of medium height, 60 to 100 feet tall, with diameters of 3 feet. It has an open, flat-topped crown of slender, often drooping branches. The bark is grayish-brown and furrowed into long, scaly ridges. Perhaps the best way to identify the Honey Locust is by the dense clusters of long, sharp, forked thorns that grow from the trunk and larger limbs.

The pinnately compound (sometimes bipinnately compound) leaves are made up of 18 or more oval, sparsely-toothed leaflets attached to a grooved, somewhat hairy, leaf stalk. The 18-inch bean like seed pod contains a sweet substance around the seeds that gives rise to the name. A thornless variety is much used as an ornamental.

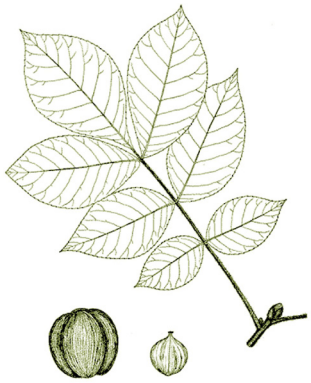
Pignut *(Carya glabra)*

Pignut is a smaller tree from the hillsides and dry ridges of West Virginia, where it mingles with oaks, other hickories and occasional pines. The dark gray, tight bark is shallowly grooved into narrow ridges. Each compound leaf has five to nine leaflets. The somewhat pear shaped fruit is a rounded, thick shelled, brownish-white, slightly flattened, 1-inch long nut that is enclosed in a thin reddish-brown husk that splits only halfway to the base.

Pignut *(Carya glabra)*

Oval Pignut (Carya ovalis)

Oval Pignut is very similar to the Pignut, but it usually sports seven leaflets and a rounded fruit with a thin-shelled nut.



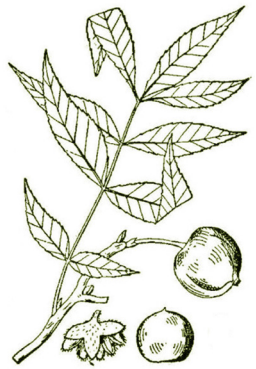
Mockernut *(Carya tomentosa)*

Mockernut *(Carya tomentosa)*

Mockernut is a medium size tree of about 80 feet in height with trunk diameters of about 2 feet. The bark is gray and tight, not shaggy. Each compound leaf usually has seven leaflets, although five is not uncommon, with fury stems and undersurfaces. The outer bud scales fall early and thus the bud appears neat. The husk of the rounded fruit splits freely and the shell is very thick, hence its common name of Mockernut.

Bitternut *(Carya cordiformis)*

Bitternut or Sulphurbud Hickory is common along streams, although it grows on good soil on hillsides as well. The bark is tight and each compound leaf has anywhere from 9 to 13 leaflets. The buds are sulphur-yellow in contrast to the brown buds of the other species. The nut is thin-shelled and very bitter, with a thin husk that splits to the base of the nut. There is a raised wing along each seam.

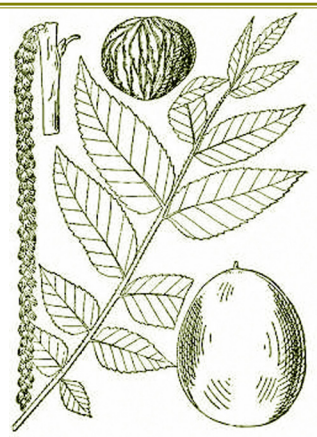


Bitternut *(Carya cordiformis)*

Black Walnut *(Juglans nigra)*

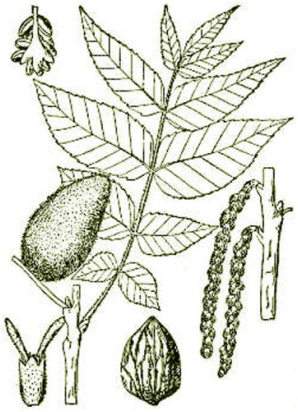
Black Walnut is a handsome tree that may grow more than 120 feet high with diameters of up to 6 feet. It is covered with dark, rough and deeply furrowed bark. The jet-black durable heartwood is a prized cabinet wood. Black Walnut seldom grows well in pure stands and the roots secrete a substance that interferes with many plants. Tomatoes, for example, will not grow near walnuts, although raspberries do very well there.

The pinnately compound leaves are made up of 13 to 23 pointed saw-toothed leaflets. In a good year, hundreds of round walnuts are produced inside greenish, fleshy husks that do not split naturally as they do on hickory nuts.



Black Walnut *(Juglans nigra)*

Black Walnuts seldom grow well in pure stands and their roots secrete a substance that interferes with many plants. Tomatoes, for example, will not grow near walnuts, although raspberries do very well there.



Butternut or White Walnut *(Juglans cinerea)*

Butternut or White Walnut *(Juglans cinerea)*

White Walnut or Butternut is a flat-topped tree that grows anywhere from 30 to 70 feet high with diameters of 1 to 3 feet. This tree is slowly disappearing from our forests because of a disease that progressively kills back the branches and so weakens the tree that it eventually dies. The grayish-white bark has broad, light-colored to grayish-brown lengthwise stripes. Its compound leaves have 11 to 17 shallow-toothed leaflets. In September, the elongated, thick-shelled nut, which is enclosed in a thin husk, ripens. It is deeply sculptured and rough with ragged ridges. The name “butternut” comes from the oiliness of the nut meat. White Walnut has a chocolate brown chambered pith in contrast to the buff-colored pith of a Black Walnut. A felty pad above the leaf scar is another characteristic unique to White Walnut but not to the Black Walnut.

Mountain Ash *(Sorbus americana)*

Mountain Ash is a small tree of the high mountains. Often, it’s shrubby with several stems rising from the same base. In West Virginia it grows anywhere from 10 to 30 feet with trunks from 3 to 5 inches and, rarely, 8 inches in diameter. Mountain Ash grows best in open areas with lots of moisture, which makes it a good ornamental tree. It also grows in thin soil on rock ledges and stony hillsides.

The pinnately compound leaves are from 6 to 10 inches long and each has from 11 to 17 leaflets attached to the red leaf stalk. It has white flowers and large, flat-topped clusters of round, bright red fruits. The buds are reddish-brown and gummy.

Mountain Ash *(Sorbus americana)*

The European Mountain Ash *(Sorbus aucuparia)* is often planted around homes. In this species, the fruit is orange and the buds are white, hairy and non-gummy.

The seeds of all ashes have a terminal wing that looks a little like the blade of an oar or paddle. The differences between the species are minor.

White Ash *(Fraxinus americana)*

White Ash *(Fraxinus americana)*

White Ash is usually a medium-size tree, 40 to 50 feet tall with a trunk diameter of up to 2 feet. In crowded stands and good soil, it may grow 100 feet high and 6 feet in diameter. The trunk is straight and seldom has limbs on the lower half. The gray-brown ashy bark is furrowed by narrow diamond-shaped fissures into flattened, interlacing ridges. Each pinnately compound leaf is from 7 to 12 inches long and bears 5 to 9 (usually 7) short-stalked, dark green, sharp, 3- to 5-inch leaflets.

There are three other ashes in West Virginia. Red Ash *(Fraxinus pennsylvanica)* has velvety pubescent twigs and leaf stalks. Blue Ash *(Fraxinus quadrangulata)* has four-angled twigs and has been found only in Cabell County. Black Ash *(Fraxinus nigra)* has sessile leaflets.