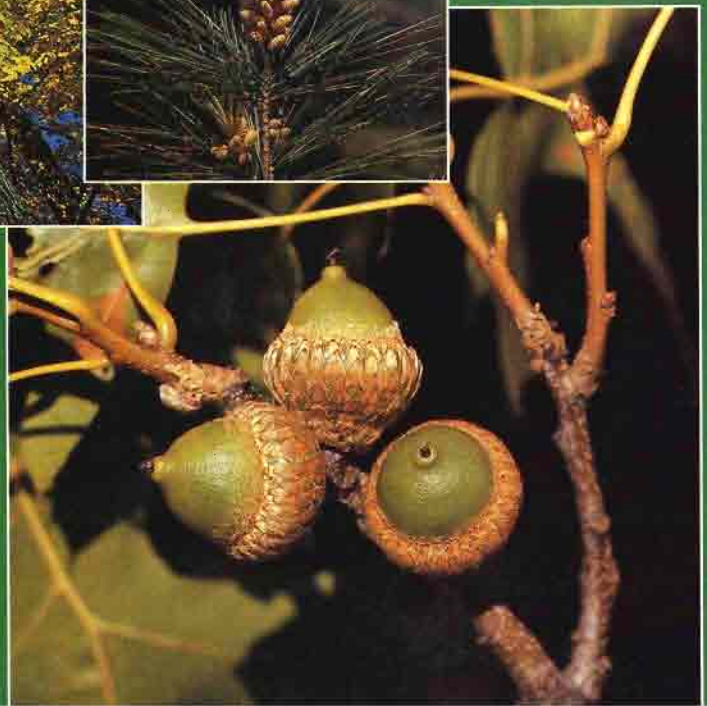

Ohio's Trees

This booklet you are about to read was by no means designed as a technical reference for the advanced student of forestry, but rather as a very basic field reference for the person who wants simply to become familiar with some of the more common trees found in our state.

Individual trees represented here were selected solely on the basis of how frequently they are apt to be encountered in the field. For this reason we have also included a few of the more common, but non-native ornamental trees such as horsechestnut, catalpa and tree-of-heaven.

We hope this booklet will serve you well in developing a greater familiarity, appreciation and understanding of Ohio's trees.

Published by:

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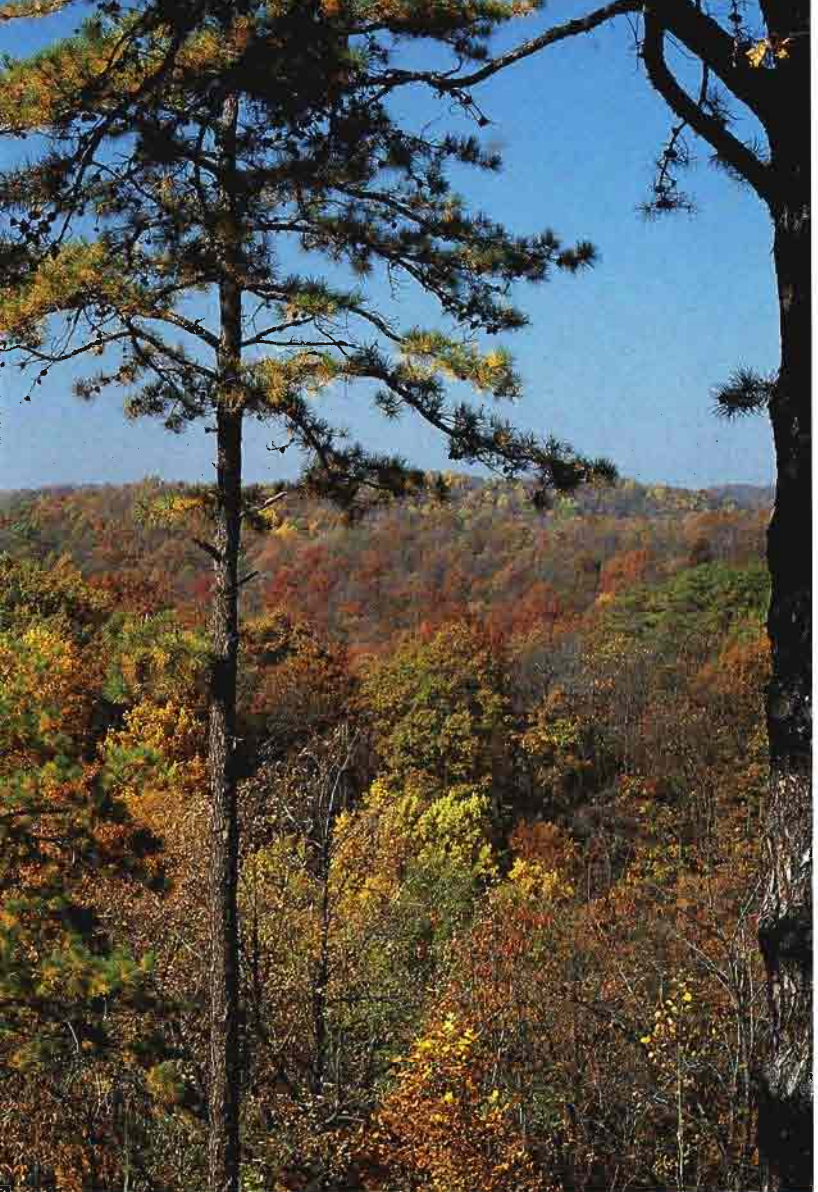
Richard F. Celeste, Governor

Joseph J. Sommer, Director



Ohio's Trees

Text by Guy L. Denny
Photographs by Alvin E. Staffan

Introduction:

From the Liberty Tree in Boston to the redwoods of California, no living thing on earth has been more beneficial to man than the tree, monarch of the plant kingdom. The tree was worshipped by the red man, for the forest was his home; the tree, his staff of life. It was both cursed and blessed by the pioneer, for trees had to be removed before roads westward could be traveled, cabins built and fields planted—tasks which broke even the strongest of men. Yet the tree enabled the settler to survive in a strange and hostile world. From the wood of his cradle to the shell of his coffin, trees meant the difference between life and death. They provided fuel for his fire on a cold winter's night, a stock for his rifle, the food on his table, and the shelter under which he slept.

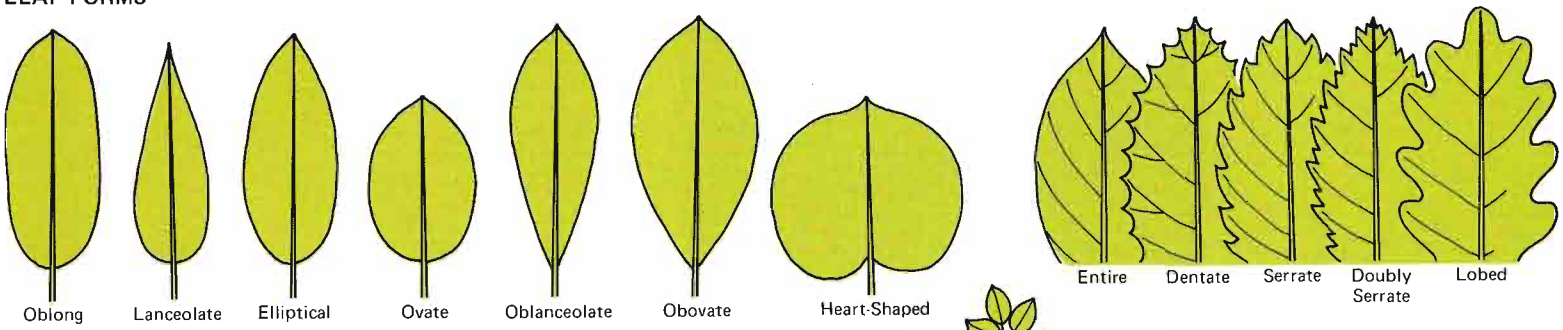
Modern man, surrounded by his world of concrete and steel has long since lost this personal contact with his natural environment. The tree is no longer worshipped or even cursed, but for the most part, greatly ignored.

Strange as it may seem, we are in many ways more dependent upon trees today, in this "Age of Synthetics," than were our forefathers who literally carved this nation out of the forest. We rely on countless wood products daily, from lumber and paper to such technologically transformed substances as nylon, plastics, lacquers, and food flavoring. For lumber production alone, 38 billion board feet of timber are cut during an average year in America. That is enough lumber to build a boardwalk 30 feet wide and one-inch thick all the way to the moon.

However, trees contribute to much more than just our economic well-being. They also provide us with shade and beauty. They help maintain clean air and water, enrich and hold the soil, and provide food and shelter for wildlife.

Truly, the more we learn about trees, the more our enjoyment of them is enhanced, for only then can we fully understand and appreciate our kinship with these magnificent resources.

LEAF FORMS



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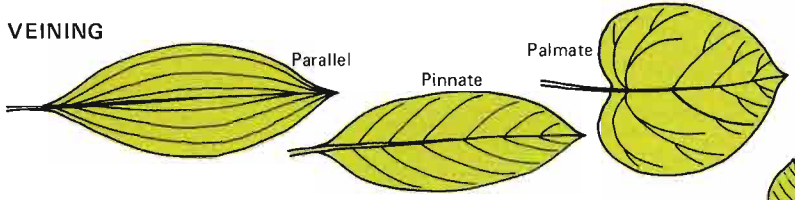

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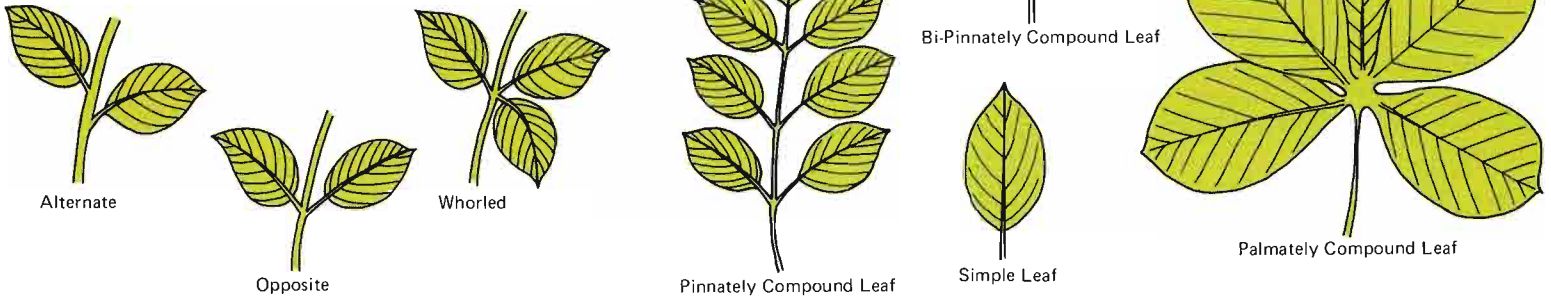


Eastern Hemlock leaves

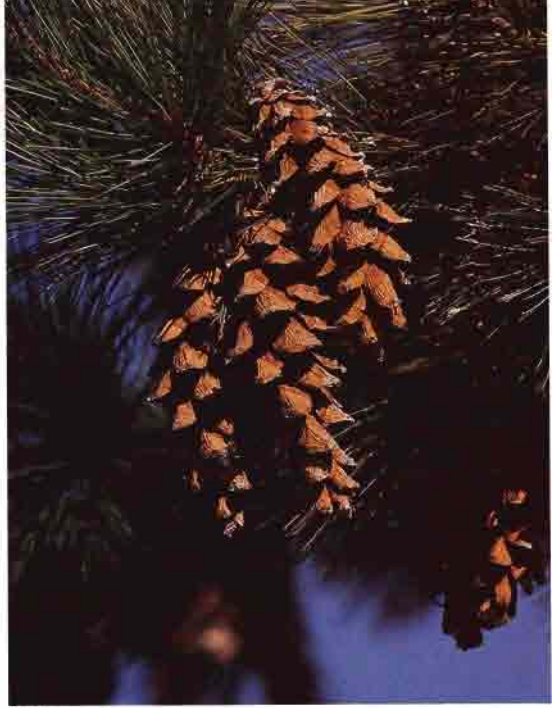
EASTERN HEMLOCK

Tsuga canadensis

The hemlock produces among the smallest cone of the pine family. The short, flat needles are glossy green above and pale green below, striped with two white lines. These lines are actually four rows of white stomata (breathing pores) which are too small to be seen individually without a hand lens. The hemlock grows best in cool, moist ravines found throughout the eastern half of our state.

While once it was used only for pulpwood or as a source of tannin for tanning leather, now considerable lumber is manufactured from hemlock for rough construction purposes. The Indians used the moist, inner bark to make a poultice for wounds and sores. Even today hemlock oil, distilled from the needles and twigs, is used in liniments.

Eastern Hemlock fruit



White Pine
fruit

White Pine
male flowers

WHITE PINE

Pinus strobus

When the pioneers came to this country, the white pine was the monarch of the eastern forests. Trees with trunks six feet in diameter, soaring to a height of 250 feet, were reported. In those days of majestic sailing ships, the long, straight trunks of white pine were the preferred choice for ships' masts.

This pine is distinguished from all other eastern pines by its soft bluish green needles which occur in bundles of five. The pollen-bearing flowers are clustered in small cones at the base of the the new growth. The bright red, seed-producing flowers occur on other twigs. The cones take two years to mature.

Because of its vigorous rate of growth and high-quality wood, white pine is a leader in the lumber market and one of Ohio's best trees for reforestation. Although it is native to only a few counties in Ohio, particularly in the northeast, it has been planted throughout most of the state.

The Indians were said to have used the inner bark as an emergency food source. The whitish resin which seeps out of the wounds of this tree was mixed with beeswax by Iroquois Indians. This gluey substance was then used to seal the seams of their canoes.

Rabbits may eat the bark of young trees. The seeds contained in the cones are eaten by red squirrels and such birds as the crossbills and the pine siskins. White-tailed deer occasionally browse on the white pine.

VIRGINIA PINE *Pinus virginiana*

Virginia pine is also called scrub pine because it is characteristically a small, scrubby tree which thrives on worn-out, dry soils of the unglaciated Allegheny Plateau in southeastern Ohio. It is easy to recognize by its short needles and persisting open cones and dead branches. Cones are produced almost every year and persist on the branches from three to five years. Virginia pine is the most common and widely distributed of any of our native pines. It often grows in association with pitch pine and short-leaf pine, the only other species of pines native to Ohio in addition to Virginia and white pine.

Virginia Pine cones

Virginia Pine male flowers

Red-Cedars

Red-Cedar fruit

White-Cedar fruit

RED-CEDAR *Juniperus virginiana*

This is the most common coniferous (cone-bearing) tree in Ohio. Although widely distributed, it grows most abundantly on the limestone soils of southwestern Ohio.

Unlike most trees, there are two kinds of leaves on the red-cedar. Young trees and occasionally vigorous shoots on older trees have awl-shaped, sharp-pointed, whitish leaves. The leaves on old trees are dark green, minute, and scalelike, clasping the stem on four sides so that the stems appear square.

The fragrant red heartwood is commonly used for cedar chips, cedar chests and fence posts. The small, pale-blue fruit matures in one season and is a favorite winter food for birds.

Don't confuse the red-cedar with the arborvitae, or northern white-cedar *(Thuja occidentalis)*. Although they look similar, a close examination of the leaves reveals that the arborvitae has flattened branchlets of aromatic, scalelike, overlapping leaves. Its fruit is a true cone with reddish brown scales. Except where planted as an ornamental, arborvitae is essentially restricted to marl bogs and limestone outcrops. Cedar Bog State Nature Preserve in Champaign County is so named from the abundance of arborvitae growing there.

BLACK WILLOW *Salix nigra*

This is the largest and most picturesque of all our willows. Nearly 100 kinds of willows occur in North America. All are very similar in appearance, and generally difficult to identify, even for experts.

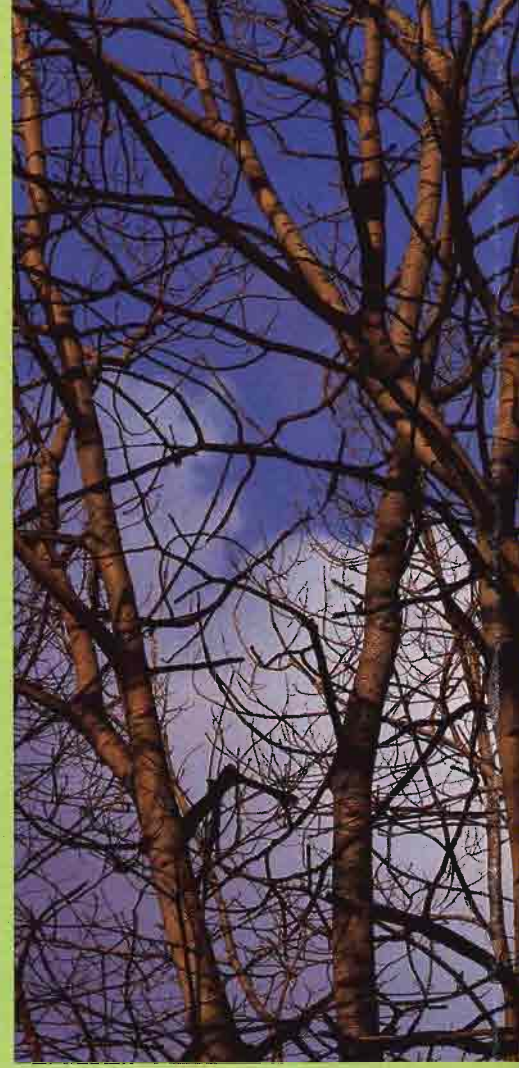
Black willow is one of the most common willows in Ohio. It can be found growing along the banks of most of our streams. Notice that the long, lance-shaped leaves are green on both sides. Often stipules (small, leaf-like structures on each side of the leaf stalk) occur at the base of the leaves. Stipules on vigorous shoots persist until autumn. Male and female flowers are borne separately in catkins on different trees.

The Patowatomi Indians made a fine scarlet dye from the roots of this tree. The pioneers brewed a tea from the roots and bark as a substitute for quinine. Even today, willow charcoal is frequently used for manufacturing gunpowder.

Willow wood is soft, light and weak but highly resistant to splintering and splitting. It is used for crates, charcoal and artificial limbs.

Black Willow fruit

Black Willow stipules



Bigtooth Aspens

Bigtooth Aspen flowers

Quaking Aspen bark

Bigtooth Aspen bark

BIGTOOTH ASPEN *Populus grandidentata*

The bigtooth aspen is widely distributed in Ohio. The name bigtooth comes from the coarsely-toothed leaves. Young trees have smooth, greenish gray bark which becomes brownish and furrowed with age.

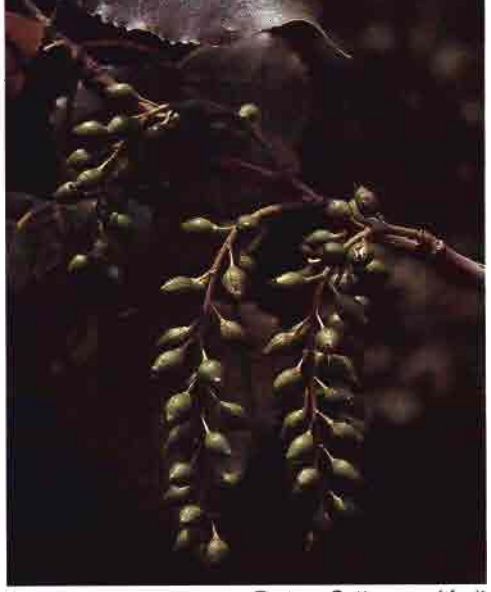
This is one of the "pioneer" trees which readily invade fallow fields and burned-over areas. It is a relatively short-lived tree, whose soft, light wood is cut primarily for pulp. However, the bigtooth aspen produces large quantities of very hardy seeds which may be scattered over large areas by wind. The trees grow so rapidly that an area that has been cut or burned out may be very quickly reforested without man's intervention.

QUAKING ASPEN *Populus tremuloides*

The quaking aspen, while very similar to the bigtooth aspen, has smaller leaves with considerably smaller and more numerous teeth. A tree typical of the north country, the quaking aspen is more common to northern Ohio than to the rest of the state. However, it has the widest range geographically and ecologically of any species of tree in North America.

Also called the trembling aspen, this tree gets its name from the leaves which tremble with the slightest breeze. Their flattened stems offer little or no resistance to the wind.

Although the inner bark is intensely bitter, beavers find it a favorite food. The smooth, waxy, yellow-green to silvery-gray bark eventually becomes dark brownish gray and rough.



Eastern Cottonwood fruit

EASTERN COTTONWOOD

Populus deltoides

The cottonwood exhibits unusually rapid growth during its first 40 years. Thereafter, it slows down and may live 100 years or more. Although cottonwoods seem to prefer floodplains and bottomlands, they can prosper on drier soil, even on ground stripped of its topsoil where few other plants can survive. Unlike most trees, cottonwoods can survive long periods of partial submergence from flooding.

According to Indian legend, the original design for a tepee was discovered by an Indian who twisted a cottonwood leaf around his fingers, forming a miniature tepee.

The cottonlike seed fluff often fills the air when the catkins of the female tree ripen and split open in late spring.

Black Walnut fruit

Black Walnut buds

BLACK WALNUT *Juglans nigra*

Black walnut is the most commercially valuable of all our hardwoods. Typically it grows best in deep, rich bottomland soils throughout Ohio.

The strong, rich chocolate-brown heartwood is highly prized for gunstocks, fine furniture, cabinet work and veneer. During World War I, even airplane propellers were made of walnut. The nuts are both delicious and highly nutritious. A brown dye was made by the Indians and pioneers from the thick husks surrounding the nuts.

Many plants cannot grow beneath walnut trees because of jaglone, a poisonous substance given off by the roots of black walnut. This toxin is fatal to such plants as tomatoes, poverty grass, blackberry, members of the heath family and others.

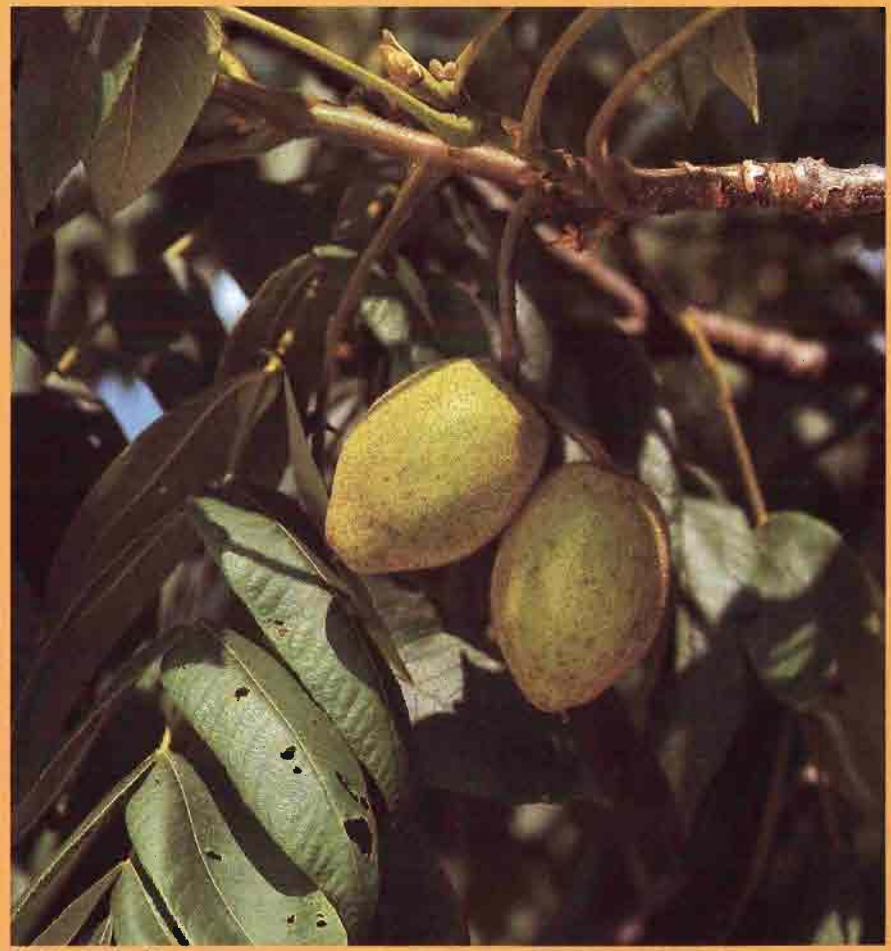
Butternut twigs

BUTTERNUT *Juglans cinerea*

Butternut, or white walnut, is not as highly prized as the black walnut because its wood is not quite as strong or durable. Moreover, the tree has not thrived in this region, further limiting its commercial importance in Ohio.

Unlike the leaves of the black walnut, butternut leaves have a terminal leaflet. This is a relatively small tree with light gray bark, which becomes darker as the tree ages. Like the black walnut, the butternut grows best on fertile bottomland soils.

The hairy, sticky husk encloses a hard, sharply-ridged oblong nut. A yellow dye can be made from the husks and the tree's inner bark. The pioneers pickled the soft, half-grown nut in vinegar. When mature, the nut kernels are edible, sweet and oily, hence the name, butternut.



Butternut fruit

SHAGBARK HICKORY

Carya ovata

This tree gets its name from the way the long, flat plates of bark break free on either end and curl away from the trunk, giving the typical shaggy appearance. Shagbark hickory has a compound leaf made up of five leaflets. The hard, bony-white nut, containing sweet, delicious nutmeat, is enclosed in a four-sectioned green husk.

No other hardwood has the combination of strength, elasticity and toughness of hickory. The wood is used extensively for tool handles, athletic equipment and for smoking meat. Its high heat value makes it an excellent firewood.

Shagbark Hickory fruit

Shagbark Hickory bark

SHELLBARK HICKORY

Carya laciniosa

Although appearing similar to the shagbark hickory, the shellbark hickory is not as shaggy. The leaf is composed of seven leaflets instead of five. The fruit is similar to that of shagbark hickory but much larger. Shellbark is often called kingnut hickory because it has the largest nut of all the hickories.

The shellbark hickory prefers fertile, moist bottomlands and is not as widely distributed as the shagbark. During preglacial times, hickory trees were found throughout Europe and the Mediterranean countries. However, with the advance of glaciers, these were all killed off. Today the hickory is distinctively an American tree. Only two species now occur beyond our continent: one in eastern China and the other in Indochina.

Shellbark Hickory fruit

Bitternut Hickory bark

Bitternut Hickory buds

Bitternut Hickory fruit

BITTERNUT HICKORY *Carya cordiformis*

The tall, slender bitternut, so called because of its bitter, thin-shelled fruit, has a more extensive range than any other hickory. It grows on bottomlands and moist upland soils with other hardwoods, particularly oaks and other species of hickories.

The bark is smoother than most of the hickories, yet divided into thin interlacing scales. The leaves are composed of seven to nine (rarely 11) leaflets that are smaller and more slender than those of the other hickories. The winter bud is a bright yellow.

The bitternut grows more rapidly, is shorter lived, and has somewhat weaker wood than either the shagbark or shellbark hickory.

BLACK BIRCH

Betula lenta

In Ohio this birch (also known as sweet or cherry birch) is primarily restricted to a narrow band along the hilly western margin of the Allegheny Plateau. It grows in and along the slopes of cool, moist ravines.

The bark somewhat resembles that of wild cherry. Although the leaves of this and yellow birch are very similar, the leaves of the black birch are more heart-shaped at the base.

Oil of wintergreen is obtained by distilling the twigs and inner bark of this tree. You can readily detect the wintergreen oil just by smelling a freshly broken twig. Both birch beer and birch tea are made from black birch.

Black Birch flowers

YELLOW BIRCH

Betula lutea

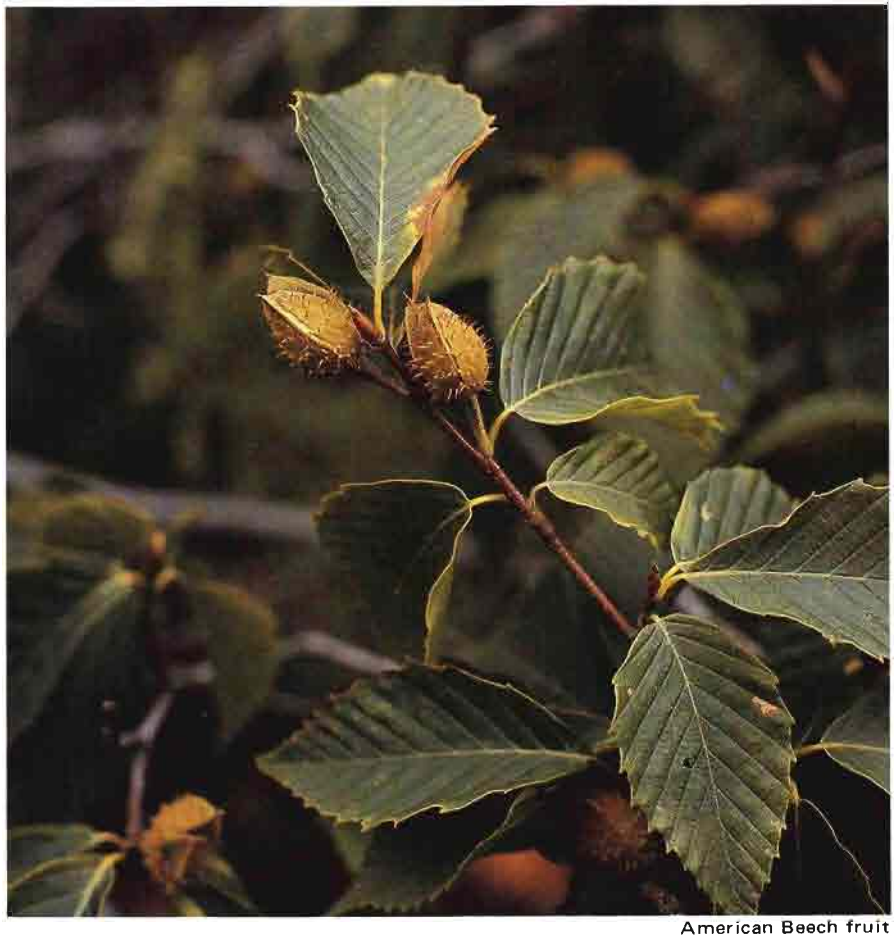
In Ohio, the yellow birch is found in deep, moist, cool ravines in the northeastern quarter of the state and southward along the western border of the Allegheny Plateau. It generally grows in association with hemlock, sugar maple and beech trees.

The lustrous, smooth, silvery-yellow bark on the limbs and young trunks gives the tree its name. As the trunk grows larger, the bark breaks and rolls back in thin paper curls.

The twigs have a faint wintergreen scent like that of the black birch, with which this tree may be confused. However, the wintergreen scent of black birch twigs is very strong. About 75 percent of the lumber marketed under the name of birch comes from the yellow birch.

Black Birch bark

Yellow Birch bark



American Beech fruit

AMERICAN BEECH *Fagus grandifolia*

A shade-tolerant tree of the mature woods, the beech grows on a wide variety of sites throughout Ohio. It prefers deep, fertile, well-drained soils wherever moisture is available in the upper layers. In a number of areas in Ohio, the American beech grows in a climax association with sugar maple and eastern hemlock. It is a slow-growing tree which may live to be 400 years old. The distinctively tight skin, is frequently vandalized by initial carvers.

Most large beech are hollow and provide excellent den sites for a host of wildlife. The small, triangular nuts are very tasty and relished by man and animals alike. The beechnuts may be dried, roasted and ground to make a fine coffee substitute. Early Ohioans also used beech leaves to stuff their mattresses.

Beech wood is strong, hard and heavy; light red in color; resistant to splitting; and takes a high polish. It is used for furniture, handles, veneer and for food containers because of its clean odor. It also makes an excellent fuel wood.

American Beech buds

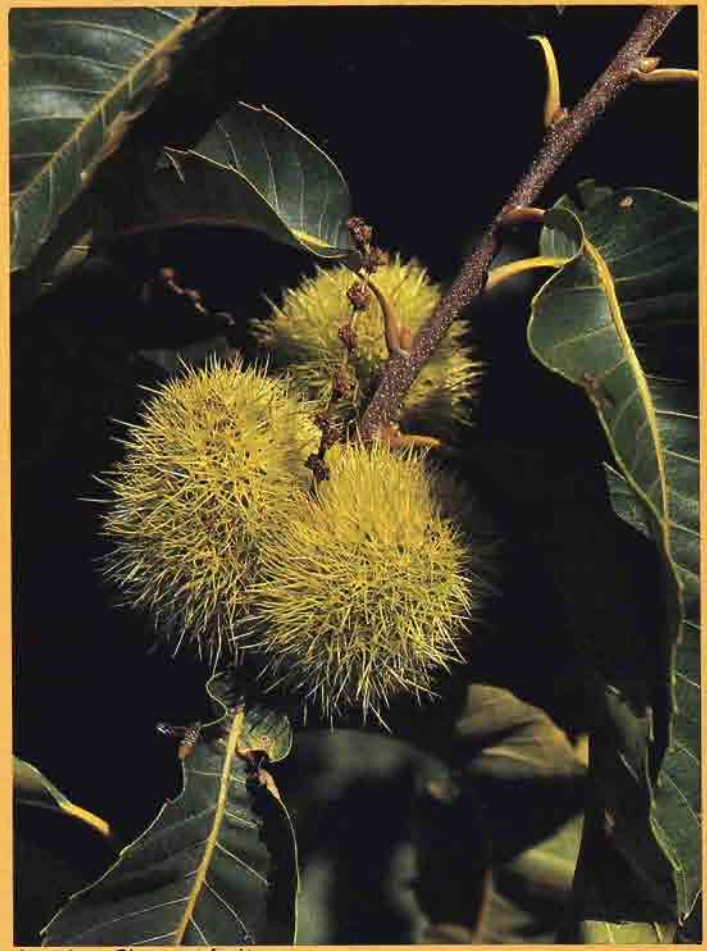
American Beech bark

AMERICAN CHESTNUT

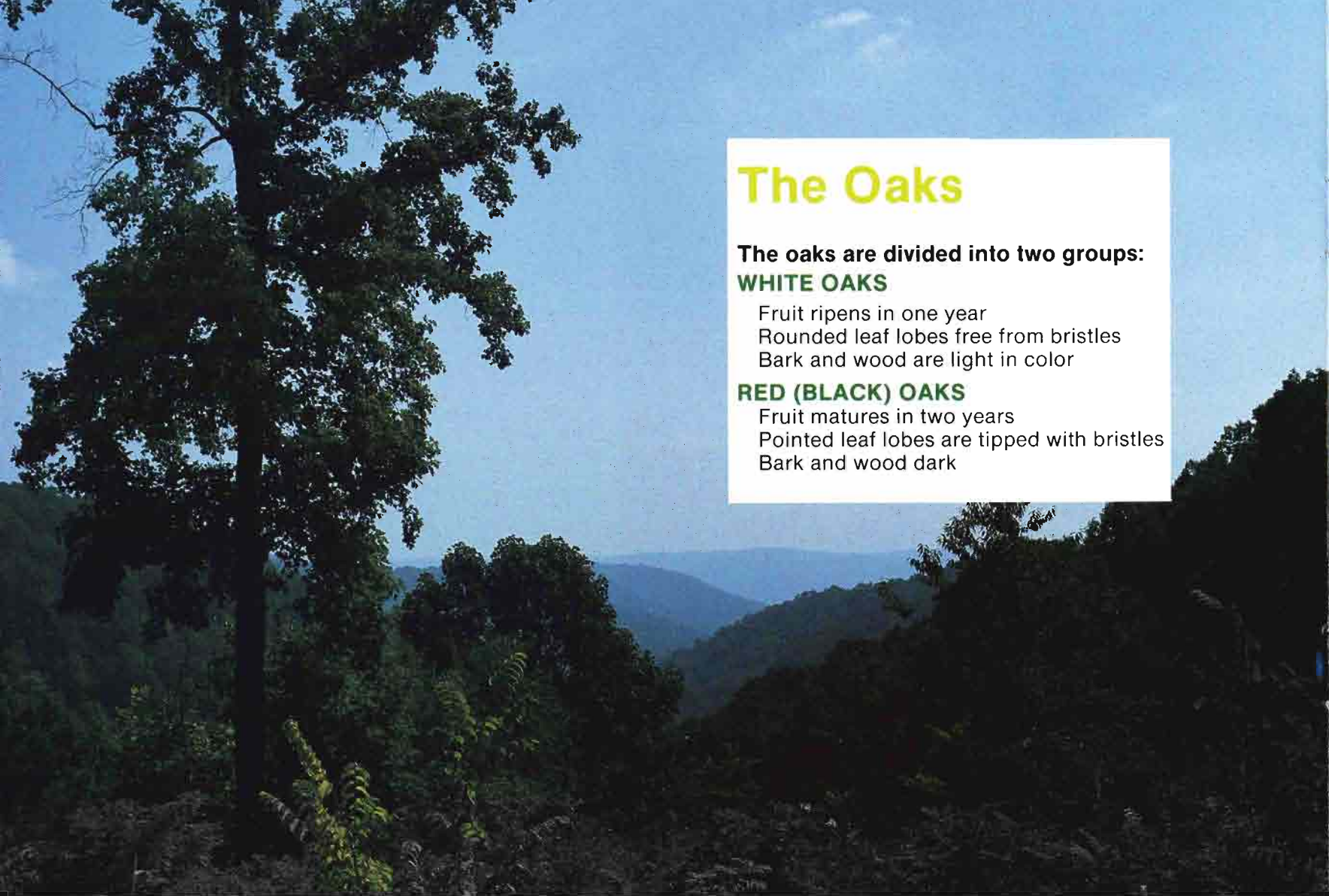
Castanea dentata

Although it was formerly a dominant tree of the oak-chestnut forest and found throughout the Allegheny Plateau region of Ohio, now only gray skeletons remain of this once majestic tree. A fungus disease which originated in eastern Asia was accidentally introduced into this country in 1904. By 1930, the disease had spread across the nation, killing just about all of our American chestnut trees. Today's remaining chestnuts arose from root sprouts of long-dead mature trees. Eventually these small trees contract the blight and die, too. However, as the older root sprouts die, they are replaced by new shoots.

The wood was light and not very strong but quite durable. Its use ranges from furniture to railway ties. The chestnut was one of our most beautiful ornamental trees and produced large crops of flavorful nuts enjoyed by both man and wildlife.



American Chestnut fruit



The Oaks

The oaks are divided into two groups:

WHITE OAKS

- Fruit ripens in one year
- Rounded leaf lobes free from bristles
- Bark and wood are light in color

RED (BLACK) OAKS

- Fruit matures in two years
- Pointed leaf lobes are tipped with bristles
- Bark and wood dark

White Oaks

WHITE OAK *Quercus alba*

White oak has very distinctive, light ashy-gray bark, usually made up of small scaly plates. It occurs in a wide variety of habitats throughout Ohio, doing best in deep, well-drained upland soils. It usually grows in association with hickory and other species of oak. The white oak grows very slowly, sending a deep taproot into the soil. Trees 300 years old are not uncommon, and some have been known to live 600 years.

The close-grained, strong wood is considered valuable. Its many uses include furniture, heavy construction, interior finish, pallets and flooring. About three-fourths of the timber sold nationally under the name of oak is white oak, although red oak is commercially more important in Ohio.

The Indians and early settlers often used white oak acorns for food after boiling and soaking out the tannic acid.

White Oak acorns

BUR OAK *Quercus macrocarpa*

Unlike most other oaks, the bur oak (or mossycup oak) seldom occurs as part of a forest stand. More frequently it grows singly in open stands within prairie and field openings. It prefers moist but well-drained soils, particularly in northwestern and west-central Ohio. In eastern Ohio bur oak is rare but occasionally is found in the bottomlands.

The bur oak's massive form, peculiarly lobed leaves, fringed acorns and corky twigs distinguish it from all other oaks.

Bur Oak acorns

Bur Oak bark

Swamp White Oak acorns

Chestnut Oak bark

Chestnut Oak acorns

SWAMP WHITE OAK *Quercus bicolor*

As its name implies, this is a swamp and bottomland tree. It is found throughout Ohio but only rarely in the southeastern part of the state. The scientific name means "two-colored" and refers to the contrast between the upper, dark green surface of the leaf and the whitish, fuzzy underside. The wood of this oak is used in much the same way as white oak.

Unlike any of the other oaks, the dark bark of the branches peels off in large, ragged curls, as it does on the unrelated sycamore, exposing the lighter colored bark underneath. Unlike most of the other Ohio oaks, the swamp white oak under favorable conditions grows quite rapidly.

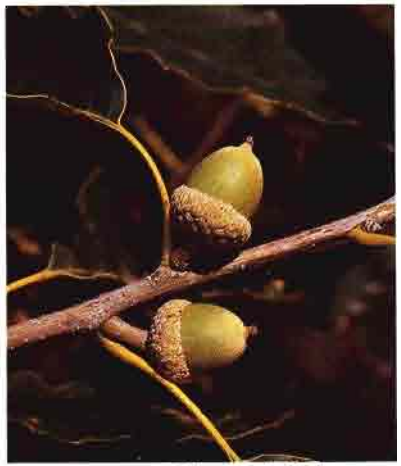
CHESTNUT OAK *Quercus montana*

Chestnut oak thrives in the hilly areas of southern and eastern Ohio on the dry, rocky slopes and ridges.

The strong, durable wood of the better-formed tree has the same uses as that of other oaks. The bark is rich in tannic acid and was once collected for use in tanning leather.

This is occasionally a very long-lived tree. The famous Washington Oak, an exceptionally large chestnut oak which grew on the east bank of the Hudson River in New York, is estimated to have been 800 to 1,000 years old.

Chinquapin Oak bark



Chinquapin Oak acorns

CHINQUAPIN OAK *Quercus muehlenbergii*

The chinquapin oak (or yellow oak) is widely distributed in Ohio, but is most common on the limestone soils of southwestern Ohio. Although the leaves of this and the chestnut oak may be confused, there is no similarity in the bark of these two trees. The ash-gray or silvery-white bark of the chinquapin closely resembles that of white oak.

Red Oak acorns

Red Oaks

RED OAK *Quercus borealis*

This large and rapid growing tree thrives in rich, well-drained soils and is commonly found throughout Ohio. The bitter acorns of the red oak, larger than those of any other Ohio oak, take two years to mature.

The wood of the red oak group has similar properties to that of white oak but is much more porous and less resistant to decay. It is used for general construction, railroad ties, furniture, interior finish and flooring.

Black Oak acorns

Scarlet Oak acorns

BLACK OAK *Quercus velutina*

The black oak is intolerant of shade and unable to withstand competition from other trees. It frequently grows in poor soil on dry uplands throughout the state. Its long taproot enables it to survive under conditions where many species of trees would suffer from lack of water. This oak is the most variable in leaf and fruit characteristics of all our native oaks. The yellow-kerneled acorn is very bitter and not considered edible.

The thick, nearly black bark and the orange-colored inner bark are reliable identifying characteristics. The inner bark is very rich in tannic acid. During Colonial times, tannin and quercitron (a yellow dye extracted from the inner bark) were very important New World exports.

SCARLET OAK *Quercus coccinea*

The scarlet oak occurs abundantly on the dry ridges and slopes of southern and eastern Ohio. It is infrequent in other parts of the state.

Its name comes from the brilliant scarlet color of the leaves in autumn. Although the scarlet and black oaks are similar in appearance, the leaves of the scarlet oak are more deeply cut than those of the black oak. Also, the color of the inner bark of the twig is distinctively orange in the black oak and pink or whitish in the scarlet oak. The acorns of the scarlet oak have tiny circlets engraved around the tips.

The strong, coarse-grained wood is sold under the name of red oak lumber and has the same uses.

PIN OAK *Quercus palustris*

The pin oak has the smallest leaves, buds and acorns of any of Ohio's native oaks. The silhouette of the pin oak, with its pyramidal crown of numerous upright, spreading branches and its distinctively drooping, stubby lower branches, is an excellent identifying characteristic. The exceptionally tough branchlets were once used to fasten or "pin" barn timbers together. Even after these lowest branches are shaded out and die, they persist on the tree for years.

The pin oak is widely distributed throughout Ohio in poorly drained bottomlands and in swamps where it may occur in pure stands or in association with other wetland-loving trees such as elm, ash and silver maple. The small acorns are an important food of wood ducks and other wildlife.

The pin oak is of no great importance in the lumber industry, but it is one of the most desirable oaks for ornamental planting. It transplants easily, has an attractive shape, produces dense shade and grows relatively rapidly.

Pin Oak acorns

Shingle Oak acorns

SHINGLE OAK *Quercus imbricaria*

This is the only oak native to Ohio that does not have even slightly lobed leaves. Although the shingle oak is widely distributed throughout Ohio, it is seldom abundant. This small oak gets its name because pioneers in the Ohio Valley used it for making split shingles for cabins.

Slippery Elm fruit

American Elm fruit

SLIPPERY ELM

Ulmus rubra

Although well distributed throughout Ohio, the slippery (or red) elm is nowhere abundant. It does best on rich, moist, but well-drained soils along stream banks, bottomlands and wooded slopes. Its leaves, unlike those of American elm, are sandpaper rough on both sides. Because of its small size, slippery elm is not an important lumber tree.

Its name refers to the slippery, fragrant inner bark. The Iroquois Indians called it "Do-Hoosh-Ah," meaning "it slips." They used the inner bark medicinally, for flavoring buffalo tallow, and for making a thick, gummy birdlime used for trapping small birds. The pioneers used the pounded inner bark as a poultice, or in a water solution as a remedy for throat inflammation and fever.

AMERICAN ELM

Ulmus americana

American elm (sometimes called white elm) is not only the largest species of elm in this country, but also our most beautiful shade tree. The drooping crown on older trees gives them an elegant, vase-shaped appearance. This elm occurs commonly throughout Ohio, preferring moist, rich soils, particularly along the borders of streams and bottomlands.

Unfortunately, American elm is fast disappearing from the North American landscape as a result of Dutch elm disease, accidentally introduced from Europe some years ago. This fungus disease clogs the water-carrying vessels of the tree. The disease is transmitted by the elm bark beetle. Perhaps the American elm is destined to a fate similar to that of the American chestnut.

The Iroquois Indians are said to have used the bark for making canoes, rope, utensils and roofing for their homes. The tough, cross-grained wood is highly resistant to splitting and is used in making baskets, furniture and flooring.

Hackberry fruit

Witches' brooms

Hackberry bark

HACKBERRY *Celtis occidentalis*

Hackberry is especially common in areas where limestone bedrock is exposed or close to the surface. However, because of its remarkable tolerance, it is found in many types of soils throughout the state.

Hackberry resembles the elms in foliage and twig characteristics. Thick clusters of twigs resembling birds' nests commonly occur on these trees. They are called "witches' brooms" and are caused by a fungus infection. Also characteristic are the corky warts or knoblike projections on the trunk of the tree. The sweet, edible berries ripen in late autumn and provide winter food for birds.

Osage-Orange fruit

Osage-Orange thorns

OSAGE-ORANGE *Maclura pomifera*

The Osage-orange is native to the rich bottomlands of the Arkansas and Red River valleys in an area formerly inhabited by the Osage Indians. It was introduced into rural Ohio during the 1800s, when it was planted extensively for fencerows. Its stiff, thorny, interlacing branches made Osage-orange a living form of barbed wire. The wood, which is very durable in contact with the soil, was also used for fence posts.

The Indians prized the strong, elastic wood for making hunting bows and war clubs, and even today the best bows are made of Osage-orange. The large orange-like fruits were reportedly sliced in half by the pioneers and used as fly poison, although squirrels often eat the seeds in the winter months without ill effects.

Cucumbertree flower

Cucumbertree fruit

Cucumbertree twigs

CUCUMBERTREE *Magnolia acuminata*

Cucumbertree is the only one of Ohio's three species of native magnolia which has rough bark and a relatively small leaf. It is the most hardy of the seven tree-sized magnolias native to the United States. Cucumbertree grows singly or in small groups throughout the eastern half of the state but mostly in northeastern Ohio. It has never been common anywhere in its range.

The wood is light and weak, but also durable and easily worked. It is used for cabinet work, interior finish, boxes and crates.

The fleshy, immature fruit looks like a small cucumber. As it matures it turns from green to a purplish red color. Although the papery-thin leaves of cucumbertree are smaller than those of any other magnolia native to Ohio, they are still quite large—from seven to ten inches long and from four to six inches wide.

TULIPTREE *Liriodendron tulipifera*

The tuliptree gets its name from its large, greenish yellow flowers, which appear in June. This northernmost member of the magnolia family grows to be the tallest of our eastern hardwoods, reaching a maximum height of 200 feet. Although widespread in Ohio, the tuliptree is less common in the central and northwestern part of the state.

As a lumber tree, tulip rates extremely high. Not only does it reproduce and grow rapidly, but the soft, durable wood is used extensively for interior finish, boxes, crates, baskets, excelsior, veneers, plywood, furniture and rough construction.

Certain tribes of Indians used tuliptree logs for making their dugout canoes. The pioneers used it extensively for building cabins, barns and rafts. They also used the bitter, inner bark of the roots to make home remedies for cholera, colds and jaundice. Even today, a heart stimulant (hydrochlorate of tulipifera) can be extracted from this inner bark.

Fossil leaves of tuliptrees dating back more than 80 million years have been found in parts of Europe and Greenland. During the last ice age, the one or more species of tuliptree native to Europe were wiped out by the glacial ice. Today, only two species of tuliptree exist in the entire world: one in China, the other in North America.

Tuliptree flower

Tuliptree fruit

Tuliptree twigs

Tuliptree bark

Sassafras flowers

Sassafras fruit

SASSAFRAS

Sassafras albidium

Sassafras is usually a small tree, found throughout the state but less frequently in northern and western Ohio. It prefers dry soils in abandoned fields and on open, eroded slopes.

Sassafras may bear three types of leaves on the same tree: entire (not lobed), two-lobed and three-lobed. The male and female flowers are usually borne on separate trees. The Indians called this the "green stick" tree because of its smooth, bright green twigs. The pleasantly aromatic leaves and twigs are the best identifying characteristics, since no other native tree has the same spicy odor.

Although not considered a valuable lumber tree, sassafras has been famous since pioneer days for sassafras tea, which is made by boiling the bark of the roots. Oil of sassafras distilled from the roots and bark, is used to perfume soaps and rubbing lotions as well as to flavor medicines. The dark blue, berrylike fruit is eaten by at least 18 bird species.

Fossil records of species of sassafras date from late in Early Cretaceous time. Perhaps a hundred million years ago some species of dinosaur may have contentedly munched on sassafras leaves closely resembling those of today.

SWEETGUM

Liquidambar styraciflua

In Ohio, sweetgum is a tree of the bottomlands in the extreme southern tip of the state, where it reaches the northern limit of its range for this part of the nation. It grows as far south as Central America. Elsewhere in Ohio it has been planted extensively as an ornamental tree. In spite of its name, sweetgum is in the witch-hazel family and is not even distantly related to the sour-gum (also known as blackgum) which also grows in Ohio.

Sweetgum bears brown, horn-tipped seed balls one to one-and-a-half inches in diameter. At least 12 species of birds are known to eat the seeds.

Although the close-grained wood has a natural beauty all its own, sweetgum veneer is often stained to imitate more expensive woods. It is frequently marketed as Circassian walnut, satin walnut and hazelwood.

Sweetgum fruit

Sycamore bark

Sycamore fruit

SYCAMORE *Platanus occidentalis*

The sycamore is a tree of the bottomland and stream banks throughout Ohio. Notice the distinctive bark, which is a patchwork of browns, yellows and greens against a background of white. As the tree grows older, the darker bark falls away in thin brittle sheets, exposing younger and lighter-colored bark.

The sycamore attains the most massive proportions of any American hardwood and may live to be several hundred years old. While often confused with the London planetree *(Platanus acerifolia)* which is a common ornamental tree, the sycamore bears the "buttonball" fruits singly, whereas they are borne in pairs or even fours on the planetree.

The sycamore has the largest leaf of any tree native to North America. The three- to five-lobed leaves are from four to ten inches long and frequently even wider.

The heavy, close-grained wood is exceptionally difficult to split and work. It is used for butcher's blocks, veneer, crates and flooring.

Hawthorn flowers

Hawthorn fruit

Hawthorn thorns

HAWTHORN *Crataegus* sp.

There are about 800 species of hawthorn in North America, of which more than 150 grow to tree size. Hawthorns are generally small, shrubby, thorn-bearing trees. Great individual variations complicated by frequent hybridization make accurate identification extremely difficult except for the professional botanist. Even botanists have not been able to agree on the total number of species found in North America. For these reasons, no attempt is made here to differentiate between the many species of Crataegus.

Hawthorns are often found in pasture land, where their sharp thorns protect them from grazing cattle. Because of this they frequently are able to encroach upon abandoned lands until shaded out by slower growing, dominant forest trees.

Although the wood is of no commercial importance, many hawthorns are valued for ornamental plantings. The fruit, referred to as "haws," remain on the tree all winter, providing food for wildlife.

BLACK CHERRY

Prunus serotina

Black Cherry flowers

Black Cherry fruit

Black cherry lumber is one of the most valuable, per board foot, of all the hardwoods in the United States. The rich red-brown color of the heartwood deepens with age and is rated second to black walnut in making fine furniture, veneers and interior trim.

The wild black cherry prefers deep, rich, moist but well-drained soils. It thrives throughout Ohio, particularly in open fields and second-growth woodlands.

Conspicuous small horizontal white speckles are typical on the bark of very young trees. The dark trunks of mature trees appear to be pasted with black cornflakes.

An extract from the bark was used by Indians as a remedy for coughs and colds. It is still used today in bitter tonics, stimulants and sedatives. The leaves of wild cherry are poisonous when wilted because of the prussic acid contained in them. The pea-sized black cherries, on the other hand, are quite edible although slightly bitter. More than 70 species of birds and a variety of mammals, especially raccoons, foxes and opossums eat them.

Black Cherry bark

Black Cherry young bark

HONEYLOCUST

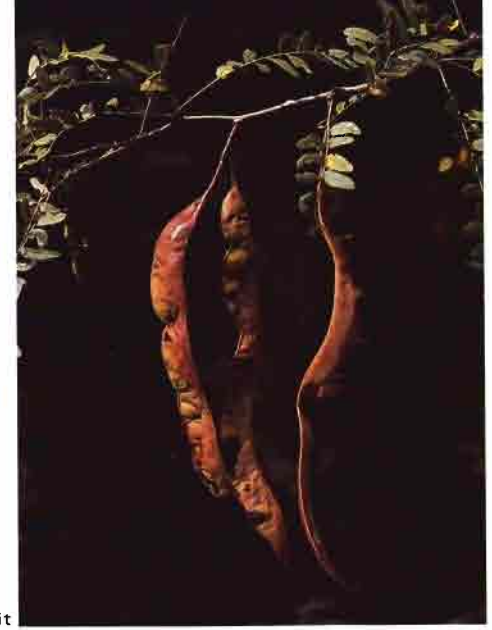
Gleditsia triacanthos

The honeylocust is widely scattered throughout Ohio wherever the soil is deep, moist and fertile, particularly in meadows and bottomlands. It is particularly abundant in southwestern Ohio.

This is the only tree native to America that has compound thorns (thorns growing from thorns). However, some honeylocusts are thornless. The leathery seed pods, a foot or more in length, contain 12 to 14 dark brown, beanlike seeds separated by a sweet, succulent pulp.

The coarse-grained wood is very hard, heavy and strong. It is used for railroad ties, rough construction and furniture.

Honeylocust thorn



Honeylocust fruit

BLACK LOCUST

Robinia pseudoacacia

Black locust was originally native only to the Appalachian Mountains and sections of Arkansas, eastern Oklahoma and southern Missouri. In its natural range it grows along streams, in rich bottomlands and in mountain coves where the soil is moist and fertile. Black locust will grow in just about any soil except that which is poorly drained or compacted. It has been cultivated extensively to control erosion, to reclaim strip mined land and for ornamental purposes.

Black locust wood is very strong, hard and heavy. It is used for mine timbers, fence posts and railroad ties.

Both honeylocust and black locust technically belong to the pea (or legume) family. However, only the black locust has the nodules (knoblike growths on the roots which enable it to add nitrogen to the soil) like such common legume crops as clover and soybeans.

Black Locust fruit

Black Locust flower

Black Locust thorn

Tree-of-Heaven fruit

Tree-of-Heaven twig

TREE-OF-HEAVEN *Ailanthus altissima*

The tree-of-heaven was introduced to this country from China during the early part of the last century as a source of food for silkworms. Although the American silk industry did not survive, the tree-of-heaven did. It has become naturalized as a weed tree and is not among our more desirable trees. Both roots and leaves are reported to be poisonous. However, the leaves give off such an offensive odor when crushed that is unlikely anyone would eat them.

While this tree is of no commercial importance, it has managed to grow very successfully as an ornamental tree in crowded cities and smoky factory districts where most other trees cannot survive.

Red Maple fruit

Red Maple twig

RED MAPLE

Acer rubrum

Red maple usually grows in association with black ash, American elm and pin oak in swamplands throughout the state. It may also occur in upland situations, provided the soil is moist. The hard, close-grained wood is rated second to sugar maple in importance and is used in much the same way.

Although red and silver maples may be confused with one another, a good test to distinguish the two is to break the twigs and smell them. The snapped twigs of red maple do not have the unpleasant odor that silver maple does.

At least one part of this tree is red throughout the year: red blossoms in April, red seeds in May, crimson leaf stems throughout summer, scarlet foliage in autumn, and bright red twigs and buds in winter.

Silver Maple twig

Silver Maple fruit

SILVER MAPLE

Acer saccharinum

Silver maple prefers moist, fertile bottomlands, stream banks and swamp lands throughout Ohio. Its leaves are more deeply indented than those of any of Ohio's other maples.

Although widely used for ornamental planting because it grows rapidly, silver maple is seldom very long-lived. Its brittle branches are often subject to wind damage. The wood, which is not as strong, hard or heavy as that of other maples, is used for pulpwood, inexpensive furniture, veneer, flooring and fuel.

Sugar Maple twig

Sugar Maple fruit

Boxelder twig

Boxelder fruit

SUGAR MAPLE *Acer saccarum*

Sugar maple is well distributed throughout the state but most abundant in northeastern Ohio. It prefers rich, moist, but well-drained soils, where it may occur in pure stands or in association with American beech trees. Sugar maple reaches its best development in Geauga County, the center of Ohio's maple syrup industry.

This is the most important and abundant maple in North America. Not only is it one of our most valuable hardwoods, but it is also valued for its maple syrup and maple sugar.

Initially invented and developed by the Indians, the process of maple sugaring was passed on to the pioneers who substantially improved the technique. The Indians not only ate the syrup and sugar they made from the sap, but they also dried and ground the inner bark into flour. Even the seeds of sugar maple were eaten after being fried in fat.

The wood is preferred for flooring, furniture, interior finish, bowling pins, musical instruments and veneer. It makes an ideal bed of coals. Formerly maple charcoal was used by blacksmiths to fire their forges. The ashes are rich in potash and were used by the pioneers in making soap.

BOXELDER *Acer negundo*

Boxelder, our only native maple with compound leaves, occurs throughout the state in rich, moist bottomland soils. Its branches and twigs are purplish green and often coated with a white powdery substance.

The weak, soft wood is almost useless commercially except for pulp. Boxelder grows rapidly but is short-lived. Until the early 1900s it was commonly planted for ornamental purposes and as a windbreak. It is seldom planted today because of its short life span and susceptibility to insect attack, storm damage and heart rot.

Ohio Buckeye flowers

Ohio Buckeye buds

Ohio Buckeye fruit

OHIO BUCKEYE *Aesculus glabra*

Ohio buckeye is found growing on fertile, moist soils of bottomlands and river banks throughout most of Ohio but less commonly in the eastern half of the state. It is also known as the fetid or stinking buckeye because the flowers, bruised bark and broken twigs give off a disagreeable odor.

The Indians named the fruit of the buckeye tree "hetuck," meaning the eye of a buck, which it certainly does resemble. The buckeye was designated the state tree of Ohio by the General Assembly in 1953.

The fresh seeds of this tree are reported to be poisonous to man but squirrels feed on them unharmed. The Indians powdered the seeds and dumped them into small pools. This toxin would stun the fish and make them rise to the surface, where the Indians quickly collected them. It is also reported that a flour made from the seeds makes an excellent library paste which will repel roaches.

The pioneers favored the wood for cabin building and for making furniture. Early settlers cut long, thin shavings which were then woven into summer hats. Although buckeye wood is now used extensively for making artificial limbs because it is light, easily worked and resists splitting, it is of little commercial importance.

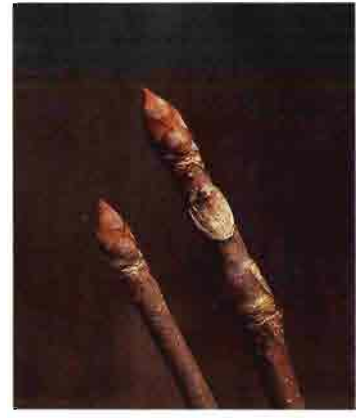
Yellow Buckeye fruit

Yellow Buckeye flowers

YELLOW BUCKEYE *Aesculus octandra*

While the Ohio buckeye is somewhat confined to the limestone soils of glaciated Ohio, the yellow buckeye is largely restricted to unglaciated southeastern Ohio and westward along Ohio River.

Also called sweet buckeye, the yellow buckeye is very tall—much taller than the Ohio buckeye. It may reach a height of 110 feet. Although often confused with Ohio buckeye, the yellow buckeye differs in that the bark is smoother and lighter, and the husk of the fruit is smooth while that of the Ohio buckeye is spiny.



Yellow Buckeye twigs

Horsechestnut buds

Horsechestnut flowers

HORSECHESTNUT *Aesculus hippocastanum*

A native of southern Asia, the horsechestnut now occurs as an ornamental shade tree throughout Ohio. It is often confused with the Ohio buckeye, but there are a number of easily observable differences. The horsechestnut leaflet is widest near the tip while the buckeye leaflet is widest across the middle, and the horsechestnut bears seven leaflets and appear glossy; buckeye buds are dry and appear dull. The fruit of the horsechestnut, enclosed in a husk with sharp thorns, has a small, irregular, cream-colored blotch on a somewhat dull nut covering. The nut of the buckeye, enclosed in a husk with soft thorns, has a small, rounded white spot on the dark, lustrous covering.

The horsechestnut nuts are usually considered inedible because of their extreme bitterness. The wood is white, soft and close-grained but of no commercial importance in this country although various products are made of it in Europe.

Horsechestnut fruit

AMERICAN BASSWOOD

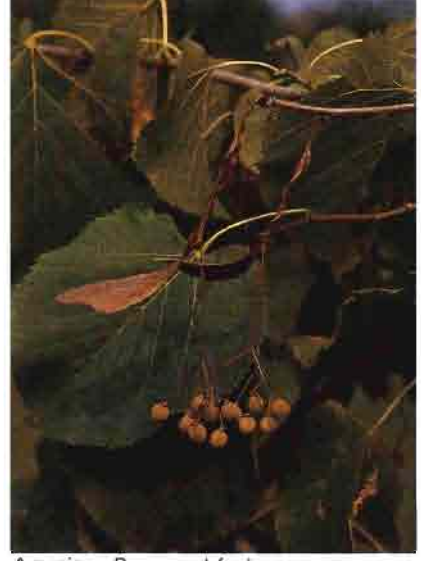
Tilia americana

The American basswood (also known as linden) grows throughout Ohio in rich, moist, well-drained soil in association with oak, tuliptree, maple, elm and white ash.

This is the lightest, softest and weakest of the hardwoods. Linden is odorless and as such is valuable for packing food products and for beekeepers' supplies. It is also used in drawing boards, excelsior, venetian blinds and woodenware.

In late June, honeybees swarm around the clusters of fragrant flowers, which produce an abundance of nectar from which they produce a choice grade of honey.

The basswood provided much for the Indians. The Iroquois carved ceremonial false-face masks from the easily worked wood. The leaves and buds are not only edible, but tasty. The Indians soaked the bark of this tree to separate the fibrous, strong inner bark, which was then cut into strips and used to make mats, rope, string and fish nets. They also used freshly cut bark from this tree as an emergency bandage for wounds.



American Basswood fruit

BLACKGUM

Nyssa sylvatica

Blackgum is often found in swamps and bottomlands, but also occurs on dry slopes. It seems to do well under a variety of moisture conditions and soil types throughout the state. Called "tupelo" by the Indians, it is also known as sour-gum and pepperidge.

The leaves of blackgum are often the first to turn bright scarlet in autumn. The deeply-checkered bark on old trees resembles alligator hide. The stiff, horizontal twigs and limbs are also identifying characteristics. The fruit, which ripens in August, tastes sour but is relished by many mammals and more than 30 species of birds.

The strong wood, which is very resistant to splitting, was once used for ox yokes. Today it is used for flooring, rollers in glass factories, pistol grips, veneers, railroad ties and furniture.

Blackgum fruit

FLOWERING DOGWOOD *Cornus florida*

Common and widespread throughout Ohio, the flowering dogwood is considered an understory tree as well as a tree of open fields and hillsides. It is a slow-growing tree, usually not attaining a height of more than 20 feet and a trunk diameter of six inches.

The bright green, smooth-edged leaves are three to six inches long, grown opposite one another, and are pale colored on the undersurface. Dogwood leaves turn brilliant scarlet in the fall.

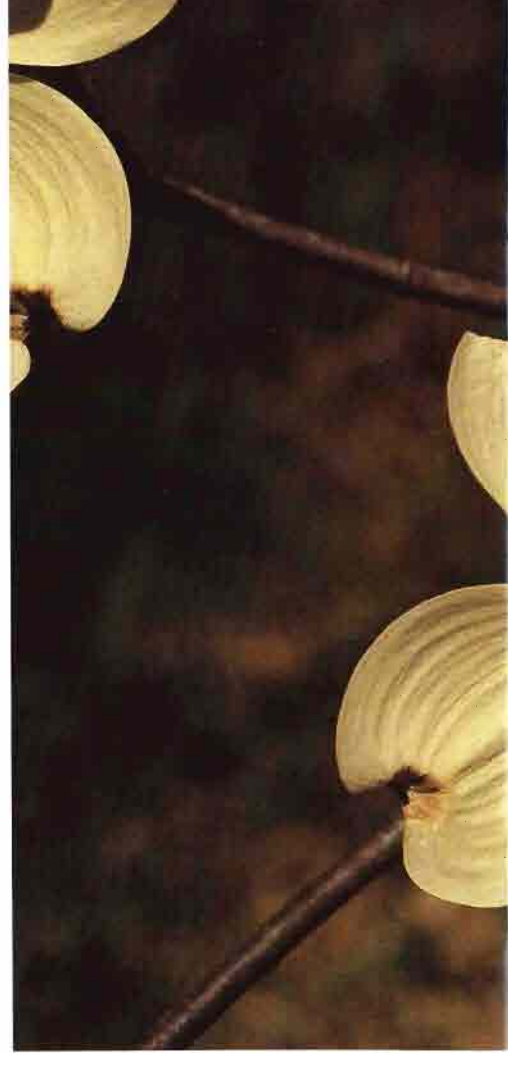
Like the blackgum, dogwood bark somewhat resembles alligator hide in texture. The small clusters of greenish yellow flowers are surrounded by four snowy-white bracts, often mistaken for flower petals. The scarlet berries, which ripen in October, are eaten by at least 86 species of birds. Because of the colorful beauty of its showy blossoms, autumn foliage and fruit, flowering dogwood makes a popular ornamental planting.

The close-grained wood is extremely heavy, strong and hard. The generic name "Cornus" comes from the Latin *cornu,* meaning "horn," alluding to the hardness of the wood. About 90 percent of all dogwood cut for commercial purposes is used for weaving shuttles. Smaller quantities are used for spool and bobbin heads, small pulleys, skewers and golf club heads.

The Indians used the roots as a bitter tonic for treating fevers. In some parts of the country, settlers as well as Indians made a tea from the bitter, astringent inner bark as a remedy for malaria. The pioneers also used the split ends of small branchlets for cleaning their teeth.

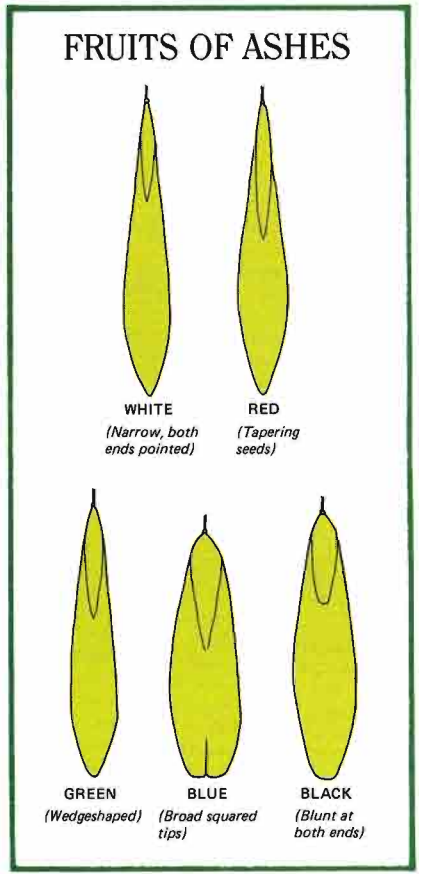
Flowering Dogwood buds

Flowering Dogwood bark



Flowering Dogwood fruit

Flowering Dogwood flowers




White Ash buds

WHITE ASH *Fraxinus americana*

White ash is an abundant tree which grows throughout the state. Although it grows on many kinds of soil, it does especially well in the clay soils of northeastern Ohio. It often occurs in association with silver, red and sugar maples, red oak, tuliptree and American elm.

The strong, elastic wood is used for tool handles, furniture, baseball bats and other sporting equipment. White ash is one of the leading commercial hardwoods in the United States.

This is the largest and finest of all 18 species of ash in America. *Fraxinus* is Latin for ash. It is derived from a Greek word which means "to separate," referring to the ease with which the wood splits. Ask any baseball player who has ever split his bat by hitting the ball incorrectly.


White Ash fruit


White Ash bark

RED ASH

Fraxinus pennsylvanica

The red ash is widespread in Ohio but more frequent in the northern part of the state. Similar in characteristics and uses to white ash, red ash is a smaller tree which occurs principally in moist bottomlands.

GREEN ASH

Fraxinus pennsylvanica var. *lanceolata*

The green ash is common and widespread along streams throughout most of Ohio. It is wider ranging than any other ash.

There seems to be little difference between green ash and red ash, although some botanists consider this variety a distinct species. The only marked difference between the two is that the leaflets and twigs of the red ash are hairy, while the twigs and leaflets of the green ash variety are smooth.

BLUE ASH

Fraxinus quadrangulata

The blue ash is largely restricted to the limestone soils of western Ohio. Only rarely does it occur elsewhere in the state. This ash is easy to identify from the young twigs, which are usually square (thus the Latin name *quadrangulata),* and by the sap, which turns pale blue when exposed to the air. Also unlike the white, green and red ash, which have a firm bark with a pattern of interlacing ridges, the blue ash has a scaly bark.

The wood of blue ash is usually not distinguished commercially from the wood of other ash trees. The pioneers made a blue dye by soaking the inner bark in water.

Red Ash fruit

Green Ash twigs

Blue Ash twigs

Red Ash twigs

Northern Catalpa flowers

Northern Catalpa fruit

NORTHERN CATALPA *Catalpa speciosa*

Native to the rich bottomlands of the central Mississippi River basin, catalpa has been widely planted in the eastern United States.

Farmers originally introduced catalpa into Ohio. They bought and planted whole groves of catalpa seedlings, which were later cut for fence posts. Catalpa wood is very durable in contact with soil. About 90 percent of all harvested catalpa is made into fence posts. Because of its showy flowers, which appear in May or early June, northern catalpa has also been extensively planted as an ornamental yard tree.

Glossary

bract — A modified leaf extending from the outside of a flower.

branchlet — A small branch.

catkin — An elongated flower cluster.

fruit — The seed-bearing structure produced by a tree.

heartwood — The dead, central wood in the trunk and larger branches, usually darker and harder than the sapwood.

leaflet — A small segment of a compound leaf.

leafstalk — The stem of a leaf.

lobe — A deep indentation in the edge of a leaf.

persisting, persistent — Long lasting; for example, fruits which remain on the tree throughout the winter.

sapwood — The younger, living outer layer of wood in the trunk and branches, softer and lighter in color than the heartwood.

stipule — A leaflike structure at the base of a leaf.

stomata — The tiny opening in a leaf through which gases are exchanged with the air.

Recommended Reading

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