

Ginkgo





Habitat

- native to Eastern China
- zone 3

● Habit and Form

- deciduous
- a large tree
- 40' to 80' tall by 30' to 40' wide, tree is generally taller the further north it is planted
- medium texture, rather coarse in winter
- conical form when young, spreading lateral branches with age

● Summer Foliage

- alternate, simple, 2"-3" long, triangular in shape
- leaves are on spurs in clusters of 3-5
- Fan shaped, with parallel leaf margins and notched at apex
- bright green color

● Autumn Foliage

- excellent yellow color
- leaves drop quickly, especially following a freeze

• Flowers

- not considered an ornamental feature
- dioecious
 - male: 1" long catkin in April
 - female: green, naked ovules
- trees may not flower until 20 years old

• Fruit

- naked seed produced on female tree only
- clusters of 2-6
- light orange to tan color
- flesh covering seed has a foul smell, often described as rancid butter

• Bark

- grey to brown
- ridged

• Culture

- prefers deep sandy soils and moderate moisture
- adaptable to pH and almost any other conditions
- full sun
- tolerant of pollution, salt air, and heat
- prune in spring
- pest free

• Landscape Uses

- specimen
- good for large open area
- good shade tree
- possibly a street tree
- only male clones should be planted, female is outlawed in some areas of United States

• Liabilities

- no serious insect or pest problems
- female plants have a foul smelling fruit
- can be slow to become established following transplanting

● ID Features

- leaves triangular and may be 2 lobed
- parallel veins
- spurs with brown imbricate buds
- fruit

● Propagation

- by seed, collect in fall (cold stratification is beneficial)
- can also be done by softwood or semihardwood cuttings, collect in early summer
- cultivars are propagated mainly by grafting

● Cultivars/Varieties

'**Autumn Gold**' (perhaps **Autumn Gold™**) - This male (non-fruiting) selection is common in the trade and notable for its symmetrical crown that is broad and rounded. The mature size is 50' tall with a 30' spread and fall color is an excellent deep yellow.

'**Jade Butterfly**' - An unusual dwarf, slow-growing form, this plant has bright green leaves and a mature height that is less than half that of standard forms. It's an introduction out of New Zealand that is gaining popularity.

'**Magyar**' - An introduction that is gaining momentum in the trade, this plant is a non-fruiting male with upright, ascending branching to 60' tall and half as wide. It is well-suited to urban planting as a street tree.

'**Pendula**' (also listed as **f. *pendula***) - Plants listed under this name are quite variable, with few expressing a strong weeping habit. Most bear branches that are horizontal or droop slightly

'**PNI 2720**' (**Princeton Sentry®**) - A very popular non-fruiting male form, this form assumes an upright habit that tapers to the point. It reaches 60' tall, but only 25' wide.

'**Saratoga**' - Commonly offered, this plant has a strong central leader and an upright, narrow habit (40' tall and 30' tall).

'**Variiegata**' - Many different clones are offered under this name, but most feature leaves that are irregularly streaked with yellow.

Red Maple



Habitat

- very large geographic and climatic range
- eastern United States and adjacent Canada
- zone 3, but plants must have originated from the northern part of its range

● Habit and Form

- deciduous
- pyramidal or elliptical when young
- becomes more spreading with age, eventually developing a more or less rounded or oval outline
- a medium to large tree, 40' to 70' tall, but can be over 100' tall
- texture is medium
- relatively fast growing

● Summer Foliage

- opposite, 2" to 4" long, 3 or 5-lobed
- medium green upper leaf color, gray-green or frosty underside

● Autumn Foliage

- varies from greenish yellow to vibrant scarlet to burgundy
- can be very striking; many cultivars selected for red fall foliage
- often one of the first trees to color

● Flowers

- red or orange, in late March and April, showy
- monoecious with male and female flowers on separate branches of a tree; some flowers may be perfect as well
- female flowers more showy with redder color

● Fruit

- samaras, 0.75" long
- often display some red color and ornamental appeal

● Bark

- attractive and a useful ornamental feature
- young bark is smooth and light, ash-gray, almost silver
- older branches and trunk are covered with scaly gray brown bark
- bark contrasts well with early spring flowers

● Culture

- easy to transplant and establish
- tolerant of many conditions and adaptable
- prefers moist, acidic soils
- tolerates occasional flooding and wet soils
- on alkaline soils develops manganese chlorosis
- full sun best for landscape development, but can tolerate partial shade

● Landscape Uses

- for shade in lawns, parks, campuses
- good for fall foliage color and bark
- good street tree

● Liabilities

- can be somewhat weak wooded and may suffer storm damage
- because the species is so genetically diverse careful attention is needed to insure adequate cold hardiness and the desired red fall foliage
- manganese chlorosis
- tar spot, verticillium wilt leaf hoppers

● ID Features

- ashy-gray bark
- clusters of "Christmas ornament" flower buds along with smaller vegetative buds
- twigs produce an odor when broken
- confused with *Acer saccharinum*. In leaf, leaf shapes separate species. Out of leaf *A. rubrum* doesn't have "droop and swoop" branch tips like *A. saccharinum*
- old bark not as shaggy or silvery as *A. saccharinum*

● Propagation

- by seed
- no longer grafted due to incompatibilities
- cultivars are by stem cuttings or tissue culture

● Cultivars/Varieties

'**Armstrong**' - An upright or fastigate selection that grows to around 60' tall and 15' wide. Lacks consistent orange or red fall color. May be an *A. rubrum* x *A. saccharinum* hybrid (*Acer x freemanii*).

'**Autumn Flame**' - Notable for its pleasant rounded habit as a young tree, growing to 60' tall. Good fall color and smaller leaves than normal. May lack the hardiness of other cultivars.

'**Bowhall**' - An upright, pyramidal form that is significantly wider than 'Armstrong' or 'Columnare'. Fall color is yellow-orange with red highlights.

'**Columnare**' - Similar to 'Armstrong', but slower growing and more compact. Has better summer foliage quality and dependable orange-red fall color.

'**Franksred**' (**Red Sunset**®) - Pyramidal to rounded form. Striking red fall color. Earlier color development than 'October Glory' and more cold hardy. Grows to 45 to 50' tall.

'Northwood' (Northwood®) - A cultivar selected for its fine tolerance of harsh winter conditions. The crown is oval and the branches ascend upwards. Fall color may not be as effective as other selections, and some have suggested that the growth form may become irregular with age.

'October Glory' (October Glory®) - Develops good red to burgundy fall color and has dark green summer foliage. Colors late in October. May have limitations as far as cold hardiness and winter twig kill susceptibility. Oval shape, 40' to 50' tall.

Sugar Maple





Habitat

- deciduous
- northeastern and north-central United States, adjacent parts of Canada
- zone 3
- primary large, hardwood tree in northeastern U.S. forest

Habit and Form

- large shade tree
- 75' or so, but can be well over 100' tall
- outline is upright oval when younger and more or less gumbdrop-shaped to rounded when mature
- dense foliage and branching
- texture is medium

● Summer Foliage

- opposite, 3" to 6" long
- 5-lobed, with the 2 basal lobes being smaller
- medium to dark green

● Autumn Foliage

- excellent yellow, orange or red
- shaded leaves on plant interior are yellow, while exterior, exposed leaves turn orange with a red cast.

● Flowers

- small yellowish green, before leaves in April

● Fruit

- samaras, 1" to 1.75" inches long
- as a pair they form a horseshoe shape

● Bark

- smooth gray-brown in youth
- develops thick, irregular, recurved plates with age

● Culture

- does not perform well when root zone is restricted
- prefers well-drained, moist fertile soils
- not tolerant of high heat, pollution, road salt
- although shade tolerant, full sun is needed for proper landscape development

● Landscape Uses

- one of the best large shade trees
- excellent in large yards, parks, golf courses, campuses

● Liabilities

- creates dense shade which reduces turf vigor
- needs room to develop
- verticillium wilt
- leaf scorch due to drought
- intolerant of urban conditions of compacted soil, heat, drought, deicing salt
- branches are strong, rarely breaks in wind or under ice load

● ID Features

- prominent, hard, pointed terminal bud; dark brown and gray, looks like an upside down sugar cone
- leaves not as wide as *Acer platanoides*
- sap from broken petiole is clear, not milky like *Acer platanoides*

● Propagation

- by seed
- cultivars bud grafted

● Cultivars/Varieties

Many fastigate, narrowly upright forms have been selected. Among them are: '**Barrett Cole**' (**Apollo™**), '**Newton Sentry**', '**Steeple**' and '**Adirzam**' (**Adirondak®**).

Dwarf forms are known and occasionally offered by specialty nurseries. Most feature dense, rounded growth and compact mature heights of 15' to 25' tall. Notable are '**Globosum**', '**Shawnee**' and '**Natchez**'.

'**Bonfire**' - Marketed for its purported brilliant red fall color, though some reports indicate a variable display. Mature form is oval, to 60' tall and wide.

'**Green Mountain**' (**Green Mountain®**) - Popular form with dark green summer foliage and variable fall color, may be red or orange. Usually displays an oval crown.

'**Legacy**' - Early reports indicate that this new variety displays good drought tolerance. Handsome thick, lustrous green leaves and good red/orange fall color. Mature form is upright oval, with good leaf density.

'**Monumentale**' (also known as '**Temple's Upright**')- A novelty cultivar with extremely tight, upright narrow growth. One notable specimen at Boston's Arnold Arboretum is 50' tall and only 3' wide.

Hedge Maple





Habitat

- hedgerow tree
- native to Europe, Near East and Africa
- a common hedgerow tree in southern England, preferring more alkaline sites there
- zone 5 (possibly 4)

● Habit and Form

- small to medium tree
- deciduous
- very round crown, densely branched
- 25' to 35' tall
- often branches very low to the ground
- medium texture

- resembles a miniature *Acer platanoides* in habit and form

● Summer Foliage

- opposite, 3- to 5-lobed leaves, 2" to 4" wide
- uniform dark green color

● Autumn Foliage

- colors late (end of October), with *Acer platanoides*
- can be a good, uniform yellow color

● Flowers

- blooms in May
- small, yellow-green flowers in clusters

● Fruit

- samaras, 1.25" to 1.75"
- nutlet often pubescent
- pairs of samaras join to form a nearly straight line

● Bark

- greyish-black
- shallow ridges and furrows
- resembles that of *Acer platanoides*

● Culture

- adaptable to many soils, including very alkaline, very acid, dry or compacted sites
- withstands air pollution
- tolerates heavy pruning
- easily transplanted
- tolerates urban conditions

● Landscape Uses

- excellent for residential areas as a lawn tree
- can be pruned into a hedge (a common use in Europe)
- a good choice for urban sites
- warrants greater use in the landscape

● Liabilities

- low branches make mowing difficult
- dense shade can cause turf to struggle
- seed can germinate abundantly

● ID Features

- milky sap in petiole, leaf veins
- scaly, brown buds
- leaves smaller than *Acer platanoides*, with edges that look melted
- young twigs can have corky lines or ridges; this characteristic varies from one individual to the next

● Propagation

- by seed

● Cultivars/Varieties

None are common in the trade, but several are occasionally seen.

Several have colored leaves, including '**Pulverentum**' with variegated foliage, '**Postelense**' with leaves that emerge yellow and mature to green, and '**Schwerinii**' with new purple foliage that turns green.

Selections with variation in form are more common, with '**Compactum**' (also known as '**Nanum**') assuming the proportions of an attractive dense shrub only perhaps 6' tall.

Littleleaf Linden



Habitat

- native to Europe
- hardy to zone 4
- long time in cultivation

● Habit and Form

- a deciduous medium to large tree
- typically 50' to 60' tall
- can reach 80' to 90' tall
- formal pyramidal or conical shape in youth
- ovate to gum-drop shaped when mature
- dense and compact branching
- branches are upright and spreading

● Summer Foliage

- deciduous
- alternate leaf arrangement
- leaves are 1.5" to 3.5" long
- heart-shaped leaves
- leaf base is cordate or oblique
- leaf has short acuminate tip
- dark green and shiny above
- light green undersides of leaves

● Autumn Foliage

- yellow or yellow-green
- not showy

● Flowers

- small, individual flowers in loose drooping clusters
- flower clusters with a leaf-like bract
- light yellow or creamy flower color
- blooms in late June and early July
- fragrant
- bees are attracted to the flowers

● Fruit

- small round nutlet 0.2' to 0.3" in diameter
- cream color; pubescent
- slightly ornamental in late summer

● Bark

- ridges and furrows
- color is gray-brown

● Culture

- full sun to light shade
- easily transplanted
- prefers moist, deep, fertile, well-drained soils
- tolerant of difficult growing sites and soils
- urban tolerant
- pollution tolerant
- very pH adaptable
- tolerates hedging well

● Landscape Uses

- shade tree
- lawn tree
- street tree
- urban locations
- planter boxes
- as a large hedge
- city malls and plantings
- for formal habit, regularity and symmetry

● Liabilities

- attracts bees when in bloom
- Japanese beetles
- aphids
- sooty mold

● ID Features

- small, heart-shaped leaves
- dense, pyramidal habit
- buds and twigs green and brown

● Propagation

- by seed
- cultivars mostly by bud grafting or cuttings

● Cultivars/Varieties

'Bailey' (Shamrock®) - A variation on the 'Greenspire' theme, this new introduction features thicker branches that are less profuse, creating a more open crown. It grows quicker, as well, and reaches 50' tall and 30' wide with a broad-conical habit. The foliage is healthy, glossy medium green.

'Chancole' (Chancellor®) - This selection works well as a street tree due to its narrow upright habit, to 50' tall and only 20' wide. The wide crotch angles make the tree resistant to breaking up during storms, plus it is tolerant of drought. The lustrous leaves may turn yellow in fall.

'Corzam' (Corinthian®) - Assuming the uniform pyramidal habit prized by homeowners, this compact selection is well suited for use as a street tree. The lateral branches are arranged uniformly around a strong central leader, and the plant reaches 45' tall with a spread of 15'. The glossy dark green leaves create a pyramid of green all summer.

'Glenleven' - Possibly a *T. x flavescens* selection, this symmetrical plant grows quickly to reach 50' tall and 35' wide. The overall habit is more open than typical *T. cordata*, and the leaves are larger than those on some cultivars, such as 'Greenspire'.

'Green Globe' and 'Lico' - These are dwarf forms that assume a "lollipop on a stick" appearance. The crown is a tight, compact ball of foliage and the plants are usually grafted and fail to exceed 15' in height.

'Greenspire' - Perhaps the most widely used *T. cordata* cultivar, this vigorous grower reaches 50' tall by 35' wide. It develops a narrow, oval crown with a straight trunk. It is popular due to its uniform branching, dark green leaves and exceptional tolerance for difficult conditions

Black Tupelo



Habitat

- native to northeastern United States down through Texas
- hardy to zone 4

● Habit and Form

- a large deciduous tree
- 30' to 50' tall

- 20' to 30' wide
- pyramidal in youth maturing to a flat-topped crown
- horizontal branches sometimes pendulous
- medium texture
- slow growth rate

• Summer Foliage

- alternate leaf arrangement
- simple, ovate leaves
- 3" to 6" long
- 1.5" to 3" wide
- serrated leaf margins
- dark green leaf color

• Autumn Foliage

- florescent yellow to orange to red or purple colors
- very showy

• Flowers

- not ornamentally significant

• Fruit

- bluish-black drupes
- 0.5' long
- ripens in late September
- birds eat fruit
- female trees only

• Bark

- dark gray brown bark color
- bark has irregular ridges, block-like

• Culture

- has a taproot, making it difficult to transplant
- prefers moist, well-drained, acidic deep soils
- full sun
- fire resistant
- fall pruning recommended

● Landscape Use

- specimen
- street tree
- lawn tree
- for fall foliage

● Liabilities

- leaf spot
- rusts
- tupelo leaf miner

● ID Features

- dark blue fruit on female trees only
- imbricate large, buds that or slightly downy
- alternate leaf arrangement
- leathery, elliptical leaves
- slender, reddish brown stems
- branches at a stiff 90 degree angle
- distinctive leaf scar

● Propagation

- by seed
- by cuttings

● Cultivars/Varieties

var. *biflora* - Called the "Swamp Tupelo", this 50' tree is naturally found in swampy areas and is adapted to poorly drained garden situations.

'Autumn Cascades' - Specialty nurseries are beginning to produce this new, strongly weeping form that shows good fall color. Once accepted by horticulturists, this plant may become a worthy addition to the small list of native weeping plant selections.

'Miss Scarlet' - This is a selection notable for its quality foliage (deep green in summer and red in fall) and abundant production of bluish fruit.

'NXSXF' (Forum™) - Selected for its pyramidal habit and dense, glossy foliage, this new cultivar displays good red fall color. It is one of the few standard cultivars of this wonderful native species.

'Pendula' - Probably not as good a form as 'Autumn Cascades', this selection has an irregular slightly weeping habit that benefits from training. The leaves, however, are deep glossy green and show good fall color.

'Red Red Wine' (also listed as **'Red Wine'**) - New to this country and not commonly available, this cultivar is reportedly notable for the red coloring of the new growth, which becomes more subdued with age.

European Hornbeam



Habitat

- native to Europe and Asia Minor
- zone 5

● Habit and Form

- a deciduous, medium sized tree
- 40' to 60' tall with roughly an equal width
- somewhat pyramidal or oval when young
- mature plants are broad and rounded
- foliage is typically dense

● Summer Foliage

- alternate, deciduous leaves
- leaves are 2.5" to 5" long and 1" to 2" wide
- oblong-ovate leaves with rounded base and acute tip
- margins doubly serrate
- leaves are heavily textured with very impressed veins
- leaf color is dark green
- high quality summer foliage

● Autumn Foliage

- fall color is yellow to yellow-green
- not impressive
- leaves held late into the fall

● Flowers

- monoecious with male and female flowers on the same plant
- male flowers are 1.5" long catkins
- female flowers are 1.5" to 3"
- flowers are not considered showy
- blooms in April

● Fruit

- a ribbed nutlet subtended by a 1" to 1.5" papery, leaf-like bract
- numerous nutlets are held together in pendulous chain-like clusters
- color changes from green to brown in September thru October

● Bark

- interesting, smooth fluted bark
- showy steel-gray color
- considered to be ornamental

● Culture

- very soil adaptable as long as the soil is well-drained
- full sun is best
- can tolerate urban conditions and pollution
- can be pruned or hedged if so desired
- long-lived tree
- difficult to transplant as large tree

● Landscape Use

- shade tree
- street tree (upright form)
- for screening
- specimen
- can be pleached or pruned into a large hedge
- works well in large planter boxes, tree lawns and in urban plaza plantings, although upright selection may be most suitable

● Liabilities

- generally free of problems
- can be attacked by Japanese Beetle
- canker and stem die-back occur occasionally
- narrow branch angles on upright forms may be prone to splitting in ice storms

● ID Features

- buds hook or curve back around the stem
- alternate leaf arrangement
- highly impressed veins and textured leaves
- clusters of nutlets with bracts
- fluted, muscle-like gray bark
- dense, clean summer foliage

● Propagation

- by seed, but requires stratification
- cuttings can be rooted, but they are difficult
- cultivars are often grafted onto seedlings

● Cultivars/Varieties

'**Asplenifolia**' and '**Incisa**' - Both have deeply cut leaves so the teeth are more like lobes.

'**Fastigiata**' - A very popular cultivar that is much more common than the species in commerce. Not really a columnar form, but rather develops a dense, formal, pyramidal outline with unrivaled symmetry. Reaches 40' to 50' tall and 20' to 30' wide at the bottom third of the plant.

Lacks a true central leader and has numerous, fine upright branches. In the trade, variability exists in 'Fastigiata' as far as its shape, so it is probable that more than one clone is being called 'Fastigiata'.

'Globosa' - A rounded dense tree with no central leader. Slow growing, only reaching 15' to 20' tall.

'Pendula' - Various weeping clones are occasionally seen, but they differ widely in their ultimate size and habit.

'Quercifolia' - Leaves somewhat oak-like in shape (lobed).