



HORT 15 Plant Collections

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October 2022

Rachel Yabut Sunnyvale, CA 2022

Ailanthus altissimum

Tree of Heaven

ABOUT THE TREE

This short lived tree is a broad leaf deciduous with a single 3' diameter trunk. It has a shrubby habit and a rounded crown.

- Growth Rate fast
- Height and Spread Design 40'x40' Mature 60'x50'
- Uses erosion control, quick effect, background, shade

LEAVES

- Type pinnately compound
- Size 1'3" leaflets
- Arrangement alternate 11-31 leaflets per leaf
- Shape elliptical
- Margin entire
- Apex acuminate
- Base teeth with glands



CULTURE

- Climate temperate
- Hardiness -20F Z5
- Exposure full to part sun
- Water tolerates any
- Soil tolerates any
- Invasive roots
- Messy
- Allelopathic

In fall the leaves change from green to yellow

FLOWERS-FRUIT AND SEEDS

- Reproduction dioecious
- Flower showy 1/4" green yellow panicles form in spring
- Fruit is 2" orange samaras



The Ailanthus altissimum is a member of the Simaroubaceae family and is native to northeaster China and Taiwan. The tree-of-heaven is best-known species as a cosmopolitan weed tree of urban areas and wildlands. Male flowers have a repulsive odor (hence its Chinese common name is Stinking Chun).

Betula Nigra River Birch

ABOUT THE TREE

B. Nigra is a broad leaved deciduous tree with multiple trunks, a spreading habit and a round crown. There is a large variation of bark color among trees and it matures from loose layers of paper to thin scales to thick plates to deep furrows.

- ▶ Growth Rate fast to moderate
- ▶ Height and Spread Design 50'x40' Mature 90'x60'
- ▶ Uses wetland areas, ornamental, lawn, urban, shade
- ▶ Cultivars Fox Valley 'Little King' dwarf form
- ▶ Heritage 'Cully' tan-creamy bark

LEAVES

- ▶ Type simple
- ▶ Size 1-3"
- ▶ Arrangement alternate
- ▶ Shape rhombic
- ▶ Margin double serrate
- ▶ Apex acute
- ▶ Base truncate to wedged



Leaves change from dark to light green to yellow.

FLOWERS-FRUIT AND SEEDS

- ▶ Reproduction monocious
- ▶ Male 2-3" brown pendulous catkins appear in fall
- ▶ Female erect catkins appear in spring with leaves
- ▶ Matures in late spring to summer with numerous tiny winged seeds packed between catkin bracts.

CULTURE

- ▶ Climate flood plains and swamps
- ▶ Hardiness -30F Z4
- ▶ Exposure full sun
- ▶ Water bog
- ▶ Soil prefers any
- ▶ Pest none
- ▶ Diseases none
- ▶ Attracts birds



The River Birch is a member of the Betulaceae family and native to the wetland areas of eastern North America. Its essential oils possess insecticidal, neonacide and antibacterial properties



Washingtonia robusta

Mexican Fan Palm

ABOUT THE TREE

W. Robusta is a columnar rounded broad leaf evergreen with rounded a crown, a coarse texture and spines.

- Growth Rate fast
- Height and Spread Design 40'x10' Mature 100'x15';
- Uses lawns of large buildings, parking lots, street tree
- The Washingtonia genus consists of two other species, *W. filifera* California fan palm, *W. x filibusta* a hybrid of the *W. filifera* and *W. robusta* that is more cold hardy

LEAVES

- Type compound
- Size 3'x4'
- Arrangement palmately
- Structure plicate
- Leaflet lanceolate
- Margin entire
- Apex droopy
- Base stems edged with orange saw-tooth spines



CULTURE

- Climate coastal subtropical
- Hardiness 20F Z9
- Exposure full sun
- Water any
- Soil prefers sandy loam
- Pest spider mites and scale
- Diseases Fungus can cause trunk rot

FLOWERS-FRUIT AND SEEDS

- Showy yellow or white flowers in large drooping clusters that are slightly fragrant appear in early summer.
- Fruit is showy black edible drupes that appear in summer and fall



A member of the Arecaceae family the Mexican Fan Palm is native to the Baja California peninsula

Podocarpus macrophylla

Japanese Yew

ABOUT THE TREE

This evergreen gymnosperm has a dense columnar habit, a fine texture and needle like leaves.

- Growth Rate slow
- Height and Spread Design 10'x6' Mature 15'x6'
- Uses ornamental, topiary, foliage, urban, privacy, hedge
- Cultivars P. macrophylla 'Maki' smaller slower growing version, P. henkelii

LEAVES

- Type compound
- Size 6x5 cm
- Arrangement whorled
- Shape lanceolate
- Margin entire
- Apex acute
- Base wedged



The leaves are green year round

FLOWERS-FRUIT AND SEEDS

- Reproduction dioecious
- Flower yellow catkin clusters
- Fruit small blue to burgundy aril
- Seeds purple blue and poisonous



CULTURE

- Climate tropical mountain forest habitat
- Hardiness 10F Z8
- Exposure full sun part shade
- Water moderate
- Soil prefers loam
- Deer resistant
- Poisonous seeds



The Podocarpus macrophylla common names include Buddhist Pine, Yew Plum Pine and Fern Pine. It is a member of the Podocarpaceae family and a native of Japan.

Afrocarpus gracilior

African Fern Pine

ABOUT THE TREE

This evergreen gymnosperm has an erect open habit with weeping branches covered in fern like leaves.

- Growth Rate moderate
- Height and Spread Design 30'x25' Mature 60'x35'
- Uses ornamental, topiary, shade, privacy
- Cultivars 'Icee Blue'

LEAVES

- Type compound
- Size 6x5 cm
- Arrangement whorled
- Shape lanceolate
- Margin entire
- Apex acute
- Base wedged



The leaves are blue/green, silver or gray

FLOWERS-FRUIT AND SEEDS

- Reproduction dioecious
- Flower pollen cone
- Fruit 1" round fleshy seed cone spring
- Seeds (aril) is spread by birds and monkeys in fall



CULTURE

- Climate tropical mountain forest habitat
- Hardiness 20F Z9
- Exposure full to part sun
- Water moderate
- Soil prefers sandy loam
- Pest none
- Diseases mealybug, sooty mold



The *Afrocarpus gracilior* (syn. *Podocarpus gracilior*) commonly known as East African yellowwood or bastard yellowwood. It is a member of the Podocarpaceae family and is native to eastern Africa.

Aesculus californica

California Buckeye

ABOUT THE TREE

A broad leaf deciduous tree with a short trunk that divides into multiple spreading branches forming a rounded crown typically of angiosperms.

- Growth Rate moderate
- Height and Spread Design 15' x 15' Mature 30' x 30'
- Uses ornamental
- Cultivars 'Canyon Pink'

LEAVES

- Palmately Compound
- Arranged opposite
- 5 lanceolate leaflets
- 2-6" long
- Serrate
- Apex acute
- Base wedge



CULTURE

- Hardy to Zone 7 0-10F
- Full sun
- Water moderate
- Any well drained soil
- Pests
 - Bagworms
 - Japanese beetles
 - borers
- Diseases
 - powdery mildew, wood decay fungi, yellow leaf blister
- Attracts
 - bees and hummingbirds



FLOWERS/FRUIT/NUTS

- Showy white fragrant flowers with orange stamens
- 4-8" Terminal panicles
- Pear shaped capsule
- Large round orange seed about 1-2"



This California native gives us a show throughout the year. Buds in winter, showy foliage and flowers during spring and by summer it drops its leaves revealing striking silver branches. Part of the Sapindaceae family, it thrives in woodlands, valleys and coastal mountain climates.



Cercis occidentalis California Redbud

ABOUT THE TREE

The Redbud is a broad leaved deciduous shrubs with multiple branches and a rounded crown.

- Growth Rate slow
- Height and Spread Design 8' x 15' Mature 20'x 20'
- Uses ornamental
- Cultivars C. siliquastrum (Judas Tree), C. canadensis 'Ruby Falls'

- Leaves simple
- Size 2-4"
- Arrangement alternate
- Shape obicular
- Margin entire
- Apex round
- Base cordate



Showy leaves turn from green to gold/red in the fall.

FLOWERS-FRUIT AND SEEDS

- Pea like axillary flowers
- Very showy magenta from winter to spring
- Fruit is a flat oblong purple pod that matures in late summer then turns brown and may hold in winter.



- Climate chaparrals dry slopes foothills canyons
- Hardiness 10F Z8
- Exposure full to part sun
- Water light
- Soil prefers loam
- Pest caterpillars
- Diseases crown rot
- Attracts bees and hummingbirds



This California native is part of the Fabaceae Legume family and is distributed throughout the American southwest. It's a shrub with year round interest, showy flowers, interesting foliage and purple pods.



Jacaranda mimosifolia

Blue Jacaranda

ABOUT THE TREE

The *J. mimosifolia* is a broadleaf deciduous tree with a vase like spreading habit and an open irregular crown.

- ▶ Growth Rate fast
- ▶ Height and Spread Design 25' x 25' Mature 65'x 45'
- ▶ Uses ornamental
- ▶ Cultivars 'Alba' has white flowers, 'Bonsai Blue' a dwarf version, *J. jasminoides* 'Maroon' a dwarf with dark maroon purple flowers

- ▶ Leaves pinnately compound
- ▶ Size 18" long
- ▶ Arrangement opposite
- ▶ Structure bipinnate
- ▶ Leaflets ½" lanceolate
- ▶ Margin entire
- ▶ Apex acuminate
- ▶ Base wedge

Showy glossy leaves that turn from green to yellow in the fall.



- ▶ Climate tropical but likes the California heat
- ▶ Hardiness 20F Z9
- ▶ Exposure full to part sun
- ▶ Water high
- ▶ Soil prefers sandy loam
- ▶ Pest none
- ▶ Diseases verticillium, powdery mildew, leaf spots



The Blue Jacaranda also commonly known as black poui and synonymous to *J. acutifolia* is a member of the Bignoniaceae, begonia trumpet vine family and is a native of Argentina and Bolivia. It is an angiosperm with a beautiful summer display to purple flowers.

FLOWERS-FRUIT AND SEEDS

- ▶ 2" tubulate flowers
- ▶ Inflorescence terminal panicles
- ▶ Very showy violet in spring
- ▶ Fruit is a woody capsules containing numerous winged seeds that appear in the summer and fall



Crataegus phaenopyrum Washington Hawthorn

ABOUT THE TREE

The *C. phaenopyrum* is a broadleaf deciduous multi-trunk or standard form with a pyramidal habit. It has three inch thorns which make them ideal as a security perimeter. However 'Princeton Sentry' and 'Fastigiata' are thornless cultivars.

- ▶ Height and Spread Design 20' x 15' Mature 25'x 20'
- ▶ Growth Rate moderate
- ▶ Uses ornamental, urban, security
- ▶ Cultivars 'Clark Heavy Fruiter' 'Winter King'

LEAVES

- ▶ Type simple
- ▶ Size 1" x 2"
- ▶ Arrangement alternate
- ▶ Shape deltoid
- ▶ Margin serrate
- ▶ Apex acute
- ▶ Base truncate



Showy glossy leaves that turn from green to orange or red in the fall.

FLOWERS-FRUIT AND SEEDS

- ▶ ½" cup shaped flowers with 4-5 petals
- ▶ Inflorescence corymb
- ▶ Showy white from spring to summer
- ▶ Fruit is a showy cluster of bright red pomes that appear in the fall
- ▶ Fruit is edible raw or cooked



- ▶ Climate east coast mountains
- ▶ Hardiness -30F Z4
- ▶ Exposure full to part sun
- ▶ Water moderate to light
- ▶ Soil prefers loam
- ▶ Pest insects
- ▶ Diseases fire blight
- ▶ Attracts
 - ▶ Pollinators
 - ▶ Hummingbirds
 - ▶ Butterflies
 - ▶ Songbirds



The Washington Hawthorn also known as *Cotoneaster cordatus* and *C. populifolia* is a member of the Rosaceae family and is a native of North Carolina where it is often found in low swamps and river bottoms to the east and higher mountain ridges of the west.



Zelkova serrata

Japanese Zelkova

ABOUT THE TREE

The *Zelkova serrata* is a broadleaf deciduous tree with a vase-like habit and medium texture.

- ▶ Height and Spread Design 40' x 40' Mature 60'x 60'
- ▶ Growth Rate slow to moderate
- ▶ Uses ornamental, street, windbreak, shade, bonsai
- ▶ Cultivars 'Village Green'

- ▶ Leaves type simple
- ▶ Size 2-6"
- ▶ Arrangement alternate
- ▶ Shape lanceolate
- ▶ Margin serrate
- ▶ Apex acuminate
- ▶ Base wedge



Showy leaves in fall when they turn from green to yellow orange or red.

FLOWERS-FRUIT AND SEEDS

Small ovoid yellow green flowers that bloom in spring with the leaves.

In late summer pea-like drupes form that change from green to brown as the mature in fall

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- ▶ Origin
- ▶ Climate temperate
- ▶ Soil tolerates any
- ▶ pH prefers acidic 5.5
- ▶ Exposure full to part sun
- ▶ Water high to light
- ▶ Hardiness 0F Z7
- ▶ Pest none
- ▶ Diseases none
- ▶ Tolerates
 - ▶ Drought
 - ▶ Heat
 - ▶ Poor soil
 - ▶ Salt air
 - ▶ Wind
 - ▶ Poor drainage



Zelkova serrata commonly known as the Japanese Zelkova or Keaki is an angiosperm from the Ulmaceae or Elm family. It originates from Japan Korea China and Taiwan and is sold commercially as an ornamental. It is also excellent for a street tree because of its high branch habit.



Ginkgo biloba

Ginkgo

ABOUT THE TREE

Broadleaf deciduous tree with an upright columnar habit but with several trunks (fastigate). When young it has an awkward habit earning it the nickname "ugly duckling".

- ▶ Height and Spread Design 40' x 30' Mature 75'x 50'
- ▶ Growth Rate slow
- ▶ Plant Uses Specimen, Container, Street
- ▶ Cultivars 'Autumn Gold', 'Saratoga'

- ▶ Leaves type simple
- ▶ Size 2-4"
- ▶ Arrangement alternate
- ▶ Shape obcordate
- ▶ Margin undulate
- ▶ Apex notched
- ▶ Base truncate



In fall the leaves drop all at once in a blizzard of bright yellow twirling fans.

FLOWERS-FRUIT AND SEEDS

The ginkgo is dioecious so there are male and female trees. In the fall the male produces a pollen cone with sperm that when released relies on wind to pollinate the ovule on a nearby female tree. The ovule forms a drupe consisting of butyric acid that smells rancid when ripe.

For this reason male trees are typically used in landscapes.

- ▶ Origin
- ▶ Climate temperate
- ▶ Soil tolerates any
- ▶ pH prefers acidic 5.5
- ▶ Exposure full to part sun
- ▶ Water high to light
- ▶ Hardiness 0F Z7
- ▶ Pest none
- ▶ Diseases none
- ▶ Tolerates
 - ▶ Drought
 - ▶ Heat
 - ▶ Poor soil
 - ▶ Salt air
 - ▶ Wind
 - ▶ Poor drainage



Ginkgo biloba commonly known as the Maidenhair is an ancient species of over 300 million years ago. It is the last living species of the Ginkgoales order within the Gymnosperm group and the precursor to the pine tree. It originates from China and is widely planted mainly in urban environments and is known for its medicinal properties



Japanese Maple Cultivar Study

A. palmatum 'Higasayama' *A. palmatum* 'Crimson Queen'

A. shirasawanum 'Aureum' *A. japonica* 'Green Cascades'

Acer palmatum var. Higasayama

ABOUT THE TREE

This beautiful specimen can be a shrub or a tree, has an upright habit and a broad open crown.



- Growth Rate slow
- Height and Spread Design 15'x12' Mature 12'x15'
- Uses ornamental specimen understory bonsai container
- Cultivars 'Green Cascade' 'Crimson Queen' 'Aureum'

LEAVES

- Type palmate
- Size 2"
- Arrangement 7 lobes
- Shape lanceolate
- Margin toothed
- Apex slender tipped
- Base leaflets originate from one point

CULTURE

- Climate Prefers cool shady spots
- Hardiness -20F Z5-9
- Exposure sun best in morning sun
- Water moderate
- Soil prefers moist rich sandy loam
- Pest aphids, scales, borers, root weevils, mites
- Diseases stem canker, leaf spots, verticillium wilt, botrytis, anthracnose, root rot

In spring the leaves are green striped along the center midrib with contrasting creamy which margins tinted with pink. In summer the leave are a green and in fall they turn a brilliant gold-red.

FLOWERS-FRUIT AND SEEDS

- Small red flowers on umbels appear in mid spring
- Inconspicuous from a distance
- Samaras form in fall about ¾" usually in pairs



Higasayama is just one of many *A. palmatum* varieties commonly known as Japanese Maple. It stands out with its unique leaf shape and 3 season foliage change. It is a member of the Sapindaceae family and native to Japan, Korea and China.

Acer palmatum var. dissectum 'Crimson Queen'

ABOUT THE TREE

Dissectum varieties are popular in landscapes because of its low branching broad mounded cascading habit. The Crimson Queen is a dwarf ideal as an accent with a contrasting green background or beside a stream or pond.

- Growth Rate slow
- Height and Spread Design 8'x10' Mature 10'x12'
- Uses ornamental specimen understory bonsai container
- Cultivars 'Green Cascade' 'Higasayama' 'Aureum'

LEAVES

- Type palmately compound
- Size 5-7"
- Arrangement 7-11 lobes
- Shape laciniate
- Margin pinnatisect
- Apex acicular
- Base acicular

CULTURE

- Climate Prefers cool shady spots
- Hardiness -20F Z5-8
- Exposure part shade sun best in morning sun
- Water moderate
- Soil prefers moist rich sandy loam
- Pest aphids, scales, borers, root weevils, mites
- Diseases stem canker, leaf spots, verticillium wilt, botrytis, anthracnose, root rot

Crimson Queen is prized for its excellent burgundy leaf color retention through summer. In fall the color changes to bright scarlet.

FLOWERS-FRUIT AND SEEDS

- Small red flowers on umbels appear in mid spring
- Inconspicuous from a distance
- Samaras form in fall about $\frac{3}{4}$ " usually in pairs

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Crimson Queen is a dissectum variety relating to the deeply cut feathery leaves. Dissectum varieties are commonly called lace leaf, cut leaf or thread leaf. It is a member of the Sapindaceae family and native to Japan, Korea and China.

Acer shirasawanum

Golden Full Moon Maple 'Aureum'

ABOUT THE TREE

This broad leaf deciduous large shrub has a rounded form and its trunk is smooth even when it matures.

- Growth Rate slow
- Height and Spread Design 15'x15' Mature 20'x20'
- Uses ornamental specimen understory bonsai container
- Cultivars 'Green Cascade' 'Higasayama' 'Crimson Queen'

LEAVES

- Type palmately veined and lobed
- Size 3"x4"
- Arrangement 9-13 shallowly incised lobes
- Shape rounded
- Margin double serrate
- Apex acute
- Base petiole veins radiate from this point

CULTURE

- Climate Prefers cool shady spots
- Hardiness -20F Z5-7
- Exposure part shade best in morning sun
- Water moderate
- Soil prefers moist rich sandy loam
- Pest aphids
- Diseases horse chestnut scale verticillium wilt

Aureum leaves emerge in spring an intensely bright yellow along with flowers then changes to chartreuse with the samaras in summer and then to orange-red-purple in fall.

FLOWERS-FRUIT AND SEEDS

- Reproduction andromonoecious
- Inflorescence contains flowers of either both sexes or just male.
- 10-20 erect flowers together on a terminal corymbs
- Early spring just after bud burst
- Fruit paired samaras with nutlets erect above leaves mature from red to brown.

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This species, shirasawanum, is also known as Golden Shirasawa Maple. The Aureum is most widely produced of this species for its interesting leaf shape and three season foliage colors but not as much as the A. palmatum and A. japonicum cultivars. It is a member of the Sapindaceae family and native to Japan, Korea and China.



Acer Japonica

Full Moon Maple 'Green Cascade'

ABOUT THE TREE

This broad leaf deciduous large shrub or small tree has a mounded form from its spreading weeping habit.

- Growth Rate slow
- Height and Spread Design 7'x8' Mature 8'x10'
- Uses ornamental specimen understory groupings container
- Cultivars 'Aureum' 'Higasayama' 'Crimson Queen'

LEAVES

- Type palmately compound
- Size 3"x6"
- Arrangement bipinnate
- Shape pinnatisect
- Margin lobed
- Apex acute
- Base attenuate



CULTURE

- Climate Prefers cool shady spots
- Hardiness -20F Z5-7
- Exposure part shade best in morning sun
- Water moderate
- Soil prefers moist rich sandy loam
- Pest aphids
- Diseases horse chestnut scale verticillium wilt

Green Cascade leaves are rich emerald green in spring and summer and a turns to an intense red orange in the fall.

FLOWERS-FRUIT AND SEEDS

- Flowers are small insignificant purple pendulous corymbs that bloom before leaf buds.
- Fruit winged samaras 1" long that appear late summer early fall.



The Full Moon Maple is also known as Fern Leaf Maple and Downy Japanese Maple has a unique compound leaf and three season interest with its beautiful weeping foliage. The genus is part of the Sapindaceae family and is native to the mountains of Japan.

