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# THE BOOK OF TREES

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**BOOMKWEKERIJ  
UDENHOUT**  
MORE THAN EXCELLENT TREES



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# THE BOOK OF TREES

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2022

## Foreword



Dear customer,

In the beautiful book *The Story of Trees*, by K. Hobbs & D. West, one can read wonderful stories about the established relationship between trees and the way in which they have changed our lives. In the future, trees will continue to be of inestimable value to us. Fortunately, we see that the value of trees for the urban living environment and the well-being of people is increasingly recognized.

As a leading tree nursery, Boomkwekerij Udenhout is pleased to contribute to the improvement of our living environment by supplying our high-quality trees. Our professional team cultivates these trees with love and passion and will be happy to advise you on which tree will best suit your project. By helping you choose the right tree in the right place, we have included a revised tree finder in the back of this book. This index focuses among others on weather-related factors, such as drought, winter hardiness and soil moisture as well as fauna value.

The second edition of *The Book of Trees* has undergone a major transformation. The cover and layout have been restyled and the content has been updated by adding more than 20 new genera as well as 340 species /varieties. We now have summarized a product range that is enormously deep and wide and aligns with the demand of the institutional market and the market of gardeners and landscape architects.

We hope you will enjoy reading this book as much as we have enjoyed creating it. On behalf of our entire team, I would like to invite you for a further introduction and a visit to our nursery.

**Martin Houben**  
*Director*  
Nursery Udenhout

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## What's new?

- Redesigned, appealing cover
- Fresh layout design
- Addition of 20 genera and 340 species / varieties
- More photos
- Updated tree finder
- Edited body text



## Good to know!

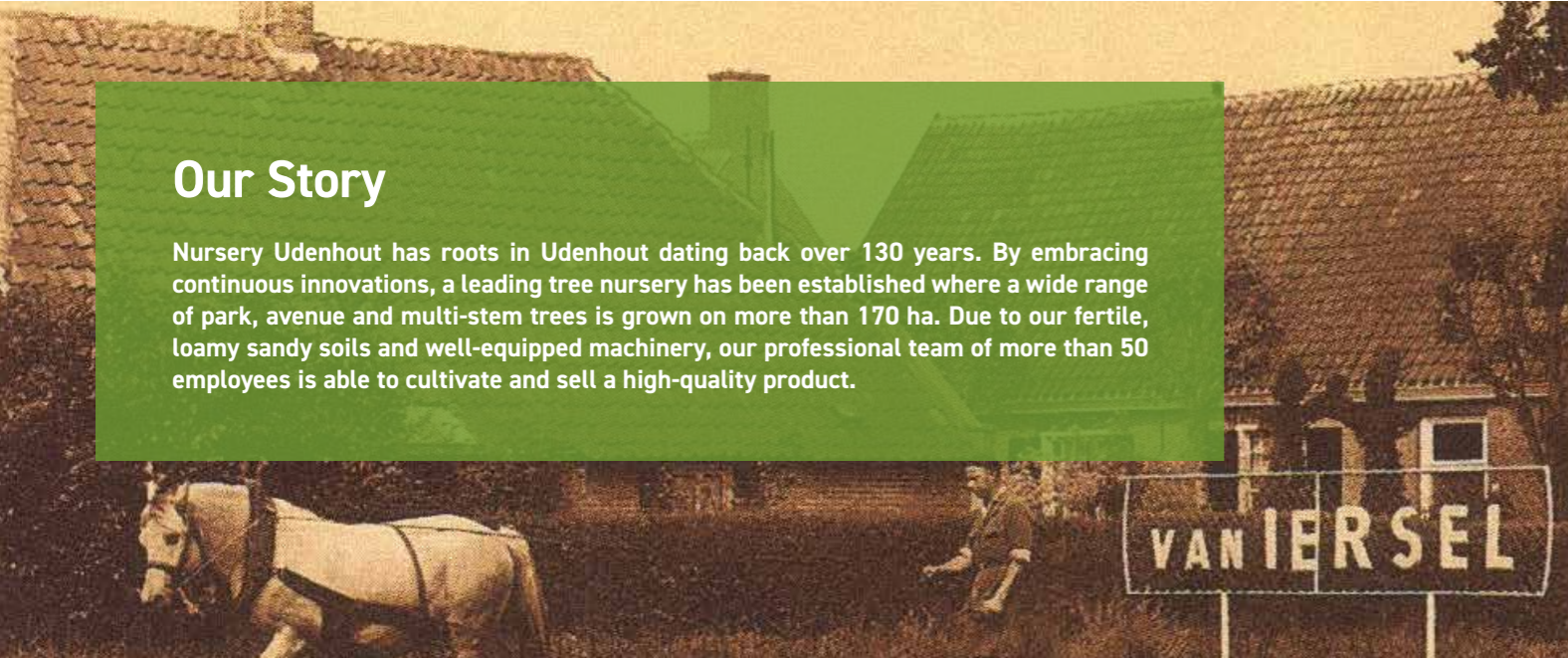
- Our assortment is frequently updated on our website and you can use various filters to quickly search in our assortment database.
- By planting the right tree in the right place, you plant future-proof trees.
- Our skilled sales representatives can advise you on all tree-related matters.
- What tree matches your climate? Check the winter hardiness zones in the back of our book.
- We are licence-holder of the semi-evergreen oak *Quercus cerris* 'Marvellous'.
- Trees and their various shapes. In the back of our tree book you can find an handy overview.
- You are more than welcome to visit our nursery.

# Introduction

# Quality labels

## Our Story

Nursery Udenhout has roots in Udenhout dating back over 130 years. By embracing continuous innovations, a leading tree nursery has been established where a wide range of park, avenue and multi-stem trees is grown on more than 170 ha. Due to our fertile, loamy sandy soils and well-equipped machinery, our professional team of more than 50 employees is able to cultivate and sell a high-quality product.



## A diverse treescape with our wide product range

Nursery Udenhout offers a very wide and deep product range. We are constantly looking for innovations and adapt our product range to changing climate conditions. Tree diversity and biodiversity in cover crops can contribute to healthy growth with little nuisance. We are happy to advise you on these matters. Thanks to our good contacts with other growers, we are able to supply a complete package of (multi-stem) trees, forestry, hedging, shrubs, perennials, etc. for the institutional market and the market of gardeners and landscape architects.

## Valuing logistic processes

Especially when handling a living product such as trees, logistic processes and efficiency are extremely important. It is imperative that sold products are delivered at the preferred place and on time. The strength of Nursery Udenhout lies in the quality of its products, one point of contact, one logistic process and delivery at a preferred place and time, both domestic and international.

## Future-proof trees

Fortunately, nowadays everyone recognizes the value of trees and greenery for the quality of our living environment. Plantation enhances a city's or village's character, adds value to real estate, takes care of a better climate, improves air quality, filters total suspended particles, contributes to biodiversity and ensures a better water management in cities. The relationship between trees and the health and well-being of people is also increasingly recognized. We are committed to organise our total production in a sustainable way. That is why we obtained the "PlanetProof" environmental label.



## Our quality labels, certifications and memberships

**On the way to PlanetProof**  
Dutch environmental quality label

**CO2-Prestatieladder niv. 3**  
Certification based on the reduction of an organizations' carbon emissions

**Groenkeur**  
Certification based on ISO 9001 – 2015 that reviews additional criteria, such as: sustainability, competence, safety in the workplace, and extensive knowledge of green trade

**Naktuinbouw**  
Checks the identity, health and quality of our propagating material

**Select Plant**  
A Naktuinbouw quality-plus certificate which demonstrates the added value or superior quality of our crops

**SKAL**  
Control authority for organic production

**ISO 9001 – 2015**  
Quality management system

**ISO 26000**  
Social responsibility management system

**ISO 14001**  
Environmental management system



Our contribution to the growth of a better living environment



Projects we are proud of



Leuven (Belgium)



Boxmeer (The Netherlands)



Klaipeda (Lithuania)



Moorslede (Belgium)



Udenhout (The Netherlands)



Warsaw (Poland)

# Acer



fam. Sapindaceae



Acer platanoides

## Maple

A genus that comprises around 115 species, occurring across Europe, Asia and North America. These different species also have many cultivated varieties and selections. Maple trees are primarily planted because of their attractive foliage, whilst some species display spectacular autumn colours as well. Of course, our nursery does not grow all species and varieties by a long stretch, but we do grow healthy, cultivated varieties of several species as well as - particular - selections. Reproduction takes place through vegetative propagation in order to obtain a regular shape. This enables us to cultivate trees with a uniform shape; something that is very important in road, avenue and street plantings. In fertile soils, maples develop a deep root system which generally ensures an excellent anchorage. They grow well on all kinds of soils, as long as these are not too moist. As a rule, maple trees require fertile soils, though most species prefer calcareous soils, except for *Acer rubrum* and Japanese maples. Maple trees do not endure lots of shade. However, *Acer campestre* still displays reasonable growth in shady places and, for that very reason, is often used for interplanting or as undergrowth in boulevards, large shrubberies and so on. Because of their early and strong sap flow, maples should never be pruned in spring, because this will cause heavy bleeding. Pruning should take place in early winter (January) or late summer (end of August-September).

### **buergerianum** Trident maple



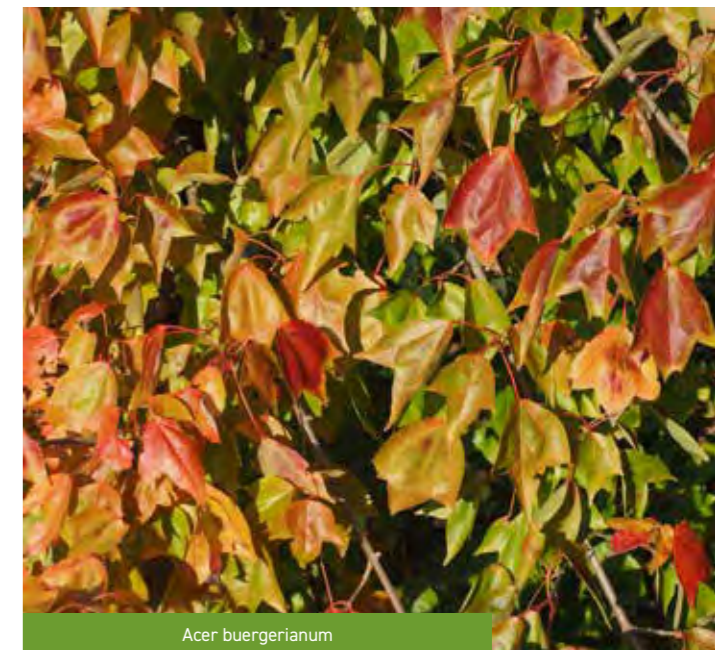
Origin: China. Large shrub or semi-tall, narrow tree. Height 9 m. In China it is often a multi-stem shrub with a round habit. Also easy to cultivate as a standard tree. Dark green and characteristic 3-lobed leaf. Splendid autumn colouring, ranging from bronze-yellow to crimson (depending on the location). Best autumn colouring on slightly acidic soils and best growth results on well-drained soils. Use as a specimen tree. Not suited for coastal planting.

### **buergerianum 'Streetwise'**<sup>®</sup>

(syn. *Acer buergerianum* 'Abtir')



Tree Introductions Inc., Athens, Georgia, USA, 2005. Selected from seedlings on nursery in Texas in 1999 by Dwayne Moon, Loganville, Georgia, USA. Slender, rising crown, 10-12 m high, 3-4 m wide. Green, shiny 3-lobed pointy leaves, resembling a duck foot. Buds red. Young leaves have a somewhat reddish leaf top. The leaf shape is variable. Orange-red autumn colouring, relatively late. Yellow-green, inconspicuous flowers appear simultaneously with the emerging leaves. Grows on all soils.



Acer buergerianum





Acer campestre 'Carnival'



Acer campestre 'Elsrijk'



Acer campestre 'Elsrijk'

## campestre Field maple



Origin: Europe, Western Asia; indigenous to the Netherlands. A medium-tall tree with a height of 8-12 m. Irregular, roundish crown that can be highly variable in shape. The leaf is 3-5-lobed, light green, often emerging reddish. Yellow autumn colour. Tolerates both sun and shade. Easy to prune, can be used for hedging. Endures exhaust fumes and road salt. For road and landscape planting.

## campestre 'Carnival'



André Van Nijnatten, Zundert, the Netherlands, 1989. Selected from seedlings. Small tree, top grafted. Spherical crown, dense and compact, height up to 5 m. The hand-lobed variegated foliage emerges pinkish-red and then turns dark green with wide cream-coloured edges. During extremely warm periods, leaf scorching may occur. Yellow-green flowers in May after which red-green fruits appear. Grows on all soils. Good wind and road salt resistance. Does not tolerate pavement. For small gardens and public gardens.

## campestre 'Elegant'



Gelderplant Export BV, Opheusden, the Netherlands, 1992. With regard to tree shape, branch positioning and health, this cultivar is an improved version of Acer campestre 'Elsrijk'. Growth is ovoid. Deeply indented leaf. Resistant to red spider mite and hardly susceptible to mildew and gall mite.

## campestre 'Elsrijk'



C.P. Broerse, City Nursery, Amstelveen, the Netherlands, 1953. Discovered in the quarter Elsrijk in Amstelveen, the Netherlands. Selection with a beautiful closed, wide conical, and later wide ovoid, crown. Height 8-12 m. Dark green leaf, smaller than the species. Because of its uniform growth and restricted size, it is excellently suited for avenue and street planting, particularly in green verges.

## campestre 'Fastigiatum'



Germany, 1930. Upright selection with a very dense crown and in its juvenile stage showing vigorous growth. Height 10-12 m. The leaves are reddish, then green, yellow autumn colour. Bears fruits. Grows on all soils, is very wind resistant and not particularly sensitive to road salt. Highly resistant to air pollution.

## campestre 'Geessink'



Geessink Boomkwekerijen, Lichtenvoorde, the Netherlands, 1955. An improved selection which is resistant to mildew. The habit is between the wider 'Elsrijk' and the narrower 'Queen Elizabeth'. This medium-sized tree, 10 to 12 m high, develops an almost straight rising trunk with a strong leader. The leaf is slightly bigger than the leaf of 'Elsrijk'. An excellent selection.

## campestre 'Green Column'

(syn. Acer campestre 'Farlake's Column')



Boomkwekerij G. Vermeer Holland B.V., Opheusden, the Netherlands, 1982. Columnar-shaped tree. Height 8-12 m. Green leaf, 3-5-lobed. Slightly susceptible to mildew. Colours from purplish-red to deep yellow. Yellow-green flowers in upright screen-shaped clusters. Very good wind resistance. Grows on all soils. For narrow streets.

## campestre 'Lienco'



M. Hendriksen, Lienden, the Netherlands, 1994. This cultivar initially forms an upright crown which is later ovoid, 8-10 m high. Dark green, opposite, 3-5-lobed leaf which emerges bronze-green and turns yellow in autumn. Inconspicuous yellow-green, monoecious flowers in May. Produces brown-grey winged fruits (samara). Grows on all soils, is very hardy and road salt resistant. Has a high resistance to gall mite and mildew, is resistant to red spider mite. Tolerates pavement and onshore wind, sun or partial shade.

## campestre 'Nanum'

(syn. Acer campestre 'Compactum')



John Claudius Loudon (1783-1843), Edinburgh, UK, 1839. Introduced by de Vos in the Netherlands in 1895. By nature a low, dense shrub with a height of 1.5-2 m, with smaller leaves than the species. When top grafted, this variety forms a dense, almost round approx. 1.5-2 m crown, slightly wider than it is high. Ideal for narrow streets, crescents and similar locations.

## campestre 'Queen Elizabeth'™

(syn. Acer campestre 'Evelyn')



Studebaker & Lake County Nursery, Ohio, USA, 1985. Develops a medium-high, wide elliptical to wide egg-shaped crown. Height 10-12 m, width 6-7 m. Stronger growth than the species, with more upright growing branches; branch angle about 45%. Dark green leaf with rounded lobes, yellow autumn colour. Beautiful avenue tree that offers more uniformity than the species, which is more variable in its shape. To ensure good and strong growth, it should preferably be planted on open green verges.

## campestre 'Red Shine'



Ton van den Oever, Haaren, the Netherlands, 1980. Tree with a height of 8-12 m and a narrow, pyramidal crown. Buds red, the underside of the leaf is darker than the species. To be used as a street and avenue tree in soils as recommended for the species. Available through own-root propagation. Highly susceptible to mildew.



Acer campestre 'Nanum'



Acer campestre 'Queen Elizabeth'



Acer campestre 'Red Shine'



Acer capillipes



Acer capillipes



Acer cappadocicum 'Rubrum'

### campestre 'Street Pillar' PBR



Boomkwekerij L.B. Ruijgrok, Randwijk, the Netherlands, 2006. Introduced in 2020. Selection from seedlings. Compact, ovoid crown with a straight and protruding leader. Grey brown, smooth stem. Brown, striped twigs, woolly pilose on top. Larger leaves than the species, 7-11 cm long and 7-13 cm wide. Emerging bright green leaves, later dark green with a brighter underside. In May, yellow-green flowers in umbels. 6-8 cm long fruits, usually containing 2 seeds with horizontally placed wings, occasionally in pairs of 3 together. Grows on all soils. Thrives in pavement, very hardy. Tolerant to road salt. Slightly susceptible to mildew and spider mite. As a street and avenue tree.

### campestre 'William Caldwell'®



Caldwell's Ollerton Nursery, Knutsford, UK, 1976. A clone selected from a seedling. Upright form, both as a shrub and a tree. Up to 8 m high and 1.5 m wide. Narrow, 5-lobed green leaves. Green flowers in May, and then brown-red winged fruits (samara) which fall in October. Beautiful orange-red autumn colouring. Is very hardy and grows on all soils.

### capillipes Snake bark maple



Indigenous to Japan. Small tree or large ornamental shrub with a height of 5-8 m. Vase-shaped growth with striking grey-white striped bark. The young twigs are reddish in colour. Ornamental tree for gardens and parks.

### cappadocicum 'Aureum'



Hesse Baumschulen, Weener, Germany, 1914. Species originally from Caucasus, Asia Minor and the Himalayas. Medium-sized tree, 10-15 m high, with a relatively wide, dense crown. Buds yellow in spring, changing to green later, returning to yellow again in autumn. Beautiful park tree for rich, moist, sandy soils, or even slightly boggy soils. Does not tolerate closed pavement.

### cappadocicum 'Rubrum'



James Booth (1770-1814), Booth Baumschulen, Klein-Flottbek, Germany, 1938. Medium-sized tree with a height of 10-15 m and a wide, relatively round, dense crown, without a central leader. Buds red, then turns dark green. Yellow autumn colouring. Can be planted on rich, moist, sandy soils. Avenue tree for open green verges. Does not tolerate closed pavement. Park tree.

### cappadocicum subsp. lobelii

(syn. Acer lobelii)



Tree with a height of 15-18 m, with a rising columnar and later narrow vase-shaped crown and several heavy, upright main branches. Bright green, 5-lobed leaf. Young twigs are distinctively covered by a bluish-white wax coating. Hardy street tree for dry soils. Also a park tree.

### carpinifolium Hornbeam maple



Origin: Japan. Very hardy medium-sized tree with a height of 10-15 m. Leaf is similar to Carpinus, however, the leaves are arranged in opposite pairs. Blooms with green-yellow 1 cm flowers in clusters, simultaneously with the emerging leaf. Bright yellow autumn colouring. Dark grey-green trunk.

### cissifolium



Origin: Japan. Small tree or large shrub with a height up to 6 m, with a round, spherical crown and horizontal branching. Dark crimson twigs and hairy buds. Trifoliate leaf, slightly reddish. Leaflets are reversed egg-shaped, with a serrated margin and a petiole. Yellow flowers in May in hairy, rich flowering bunches. Park tree for slightly acidic soils or avenue tree in open green verges.

### x conspicuum 'Elephant's Ear'

(Acer davidii x Acer pensylvanicum)



Boomkwekerij Bulk, Boskoop, the Netherlands, 1990. Wide vase-shaped growth, with overhanging branches, 8-10 m high. Striped bark. Young twigs light pink. Leaves emerge red, then turn green. Very large foliage up to 30 cm, red petiole. Orange-red autumn colouring. Not suitable for heavy and moist soils or paved surfaces. Does not tolerate road salt. For small gardens and parks.

### x conspicuum 'Red Flamingo'®

(Acer davidii x Acer pensylvanicum)  
(syn. Acer rubescens 'Red Flamingo')



Hooftman Boomkwekerij, Boskoop, the Netherlands, 2000. Wide, vase-shaped growth with overhanging branches, 3-4 m high. Striped bark. Young twigs are flaming red. Leaves emerge red, and then colour pink with white hues and green spots, red petiole. Golden-yellow autumn colouring. Not suitable for heavy and moist soils or paved surfaces. Does not tolerate road salt. Pruning is not recommended. For small gardens and public gardens.

### davidii Chinese maple



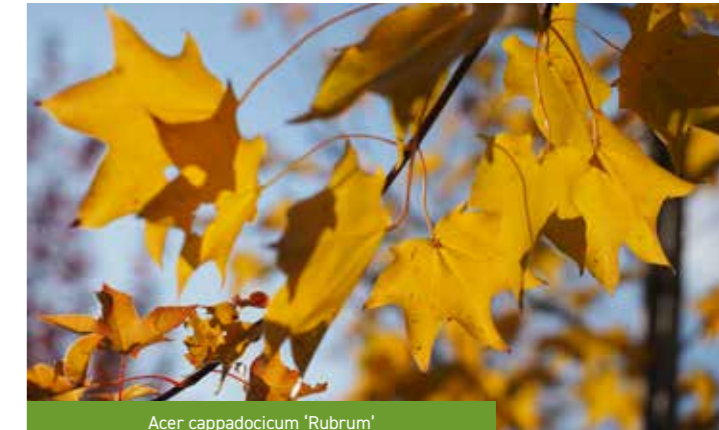
Indigenous to China. Small tree or large shrub, 5-6 m high. Round crown with beautiful purple twigs in summer and winter. Bark whitish-green, highly decorative, particularly with regard to older twigs and the trunk that have greyish-white longitudinal stripes. Belongs to the so-called Snake bark maples. Fresh twigs are purple-red and keep their colour in winter. Ornamental tree for specimen planting in parks, public and private gardens.

### davidii subsp. grosseri

(syn. Acer grosseri)



Also indigenous to China. A small tree or large shrub up to 6 m. By nature often a multi-stem shrub. The bark of the twigs and younger branches is greyish-green to yellowish and similarly striped as other Snake bark maples. Like Acer davidii, it has mostly unlobed, round to ovoid shaped leaves with a dentate-serrate leaf margin. Yellow-green flowers in suspending bunches. Beautiful, small park tree.



Acer cappadocicum 'Rubrum'



Acer davidii



Acer davidii



Acer x freemanii 'Armstrong Two'



Acer x freemanii 'Armstrong Two'

### davidii 'Viper'®

(syn. Acer davidii 'Mindavi')



Pépinière Minier, Beaufort-en-Anjou, France, 2010. Shrub or tree with a narrow vase-shape. Height 6-8 m. White to light grey bark, older branches have red-coloured stripes, highly decorative. Dark green, narrow, heart-shaped leaf, somewhat paler on the underside. Turns from yellow to orange and then purple-red in autumn. Cream-coloured flowers in suspending bunches at the same time the leaves emerge. Afterwards, red winged fruits (samara) that turn red-brown during ripening. Not suitable for heavy, wet soils and pavement. Does not tolerate road salt. For (public) gardens and parks.

### x freemanii 'Armstrong'

(syn. Acer rubrum 'Armstrong')



Scanlon Nurseries, Olmsted Falls, Ohio, USA, 1951. Highly columnar growth, up to 10-12 m high and 4-6 m wide. A hybrid of Acer rubrum and Acer saccharinum. Thinly branched. Light green leaf with a slightly bluish hue on the underside. Flowers red. After a warm summer, it develops a spectacular orange-red autumn colour. Avenue and street tree, ideal for narrow streets.

### x freemanii 'Armstrong Two'



Scanlon Nurseries, Olmsted Falls, Ohio, USA, 1960. A hybrid of Acer rubrum (beautiful, exuberant autumn colouring) and Acer saccharinum (good vigour) and an improvement of Acer freemanii 'Armstrong'. The final height is 12-14 m, with a narrow crown up to 3.5 m wide. Fast-growing cultivar that remains even narrower and ultimately forms a fairly thin-branched, upright, columnar crown. The leaf is light green with a bluish hue on the underside. Orange-red colours in autumn, which become even more intense after hot summers when more leaf sugars have developed. Flowers in red umbels in March-April. This cultivar does not produce fruits or seeds. Propagation through cuttings, due to delayed incompatibility with grafted specimens. Broad, shallow root system. Tolerates pavement, but does not like calcareous soils. Although quite wind resistant, this cultivar is less able to withstand onshore wind. Excellent avenue and street tree for narrow street profiles.

### x freemanii 'Celzam'

(syn. Acer saccharinum 'Celebration'®)



Lake County Nursery, Ohio, USA, 1980. Compact, seedless tree with a uniform, pyramidal crown, height approx. 13 m, width 6-7 m. Green foliage and red flowers. Autumn colouring early October, red and yellow variegated. Tolerates pavement. Perfect urban street and avenue tree.

### x freemanii 'Elegant'

(syn. Acer saccharinum 'Elegant')



Grootendorst, Boskoop, the Netherlands, 1969. A large tree with more rising branches. Crown slightly more regular and compact than the species. Height up to 20 m. Branches less brittle than those of Acer saccharinum. Park tree, but also an excellent tree for wide avenues and boulevards.

### x freemanii 'Embers'

(syn. Acer rubrum 'Embers')



Strongly growing tree with a pyramidal crown, once established more wide and rounded. Height 15 m, crown width 8-12 m. Spectacular scarlet-red autumn colour. Very resistant to frosty winds and cold temperatures. Excellent street and avenue tree for wider profiles.

### x freemanii 'Jeffersred'

(syn. Acer x freemanii 'Autumn Blaze'®)



Jeffers Nursery, Fostoria, Ohio USA, 1965. Introduced in 1980. A hybrid of Acer rubrum and Acer saccharinum. Height 13-16 m, width 6-10 m. Characteristically rising shape. Wind resistant. 'Jeffersred' has an attractive, green leaf colour and a perfect red autumn colour.

### x freemanii 'Scarsen'

(syn. Acer rubrum 'Scarlet Sentinel')



Missouri Botanical Garden, St. Louis, USA, 1972. A strongly rising, relatively narrow crown. Height approx. 12 m and width 6 m max. Strongly upward rising branches. Leaf is darker green and larger than the leaf of Acer rubrum and has an orange-yellow to orange-red autumn colour. To be planted preferably on open green verges on non-calcareous soil that is not too acidic or moist. Beautiful avenue tree for more narrow street profiles.

### griseum Paper bark maple



Small tree with a height of 7-9 m, or large multi-stem shrub, with very beautiful, peeling, cinnamon-coloured bark and branches. Trifoliate, dull green leaves, greyish-green on the underside. Often spectacular foliage in autumn, orange to scarlet-red. This species originates from Central China and is propagated by seed. It is widely loved because of its striking bark. Typical garden and park tree. To be planted as specimen tree.

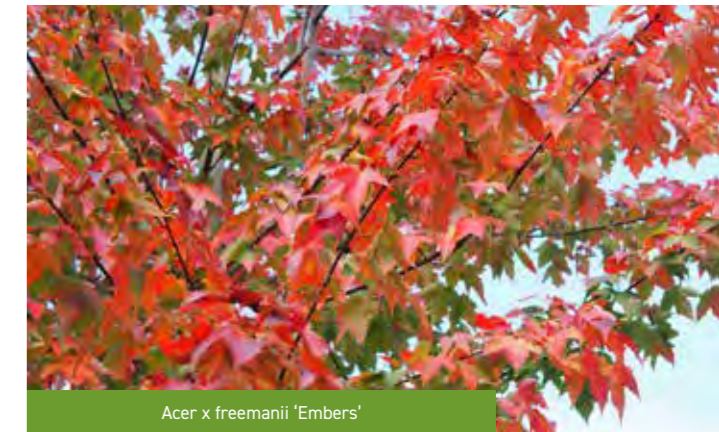
### 'Keithsform'

(Acer truncatum x Acer platanoides)

(syn. Acer 'Norwegian Sunset')



J. Frank Schmidt & Son Co., Boring, Oregon, USA, 1989. A hybrid that resembles Acer 'Warrenred'. Forms an ovate crown. Height approx. 10 m and width 7.5 m. Strikingly, beautiful branch structure and uniform crown development. Leaf resembles the leaf of Acer platanoides, shiny, dark green with orange-red to red autumn colours. Crown smaller than Acer platanoides. Soil requirements similar to those of Norwegian maple cultivars. Avenue and street tree, also suitable for narrow street profiles.



Acer x freemanii 'Embers'



Acer x freemanii 'Jeffersred'



Acer griseum



Acer monspessulanum



Acer negundo



Acer negundo 'Flamingo'

## monspessulanum Montpelier maple



Origin: Southern Europe and Western Asia. Forms a dome-shaped crown, 15 m high. The dark grey, almost black trunk has vertical grooves. The twigs are smooth and pale brown. The hard, leathery leaves are 3-lobed and have a smooth margin. Orange-pink petioles. Foliage is bright green, later dark green with a grey-blue underside. Yellow flowers in panicles. Not for moist soil types.

## negundo Box maple, Californian maple



Origin: Central and Eastern North America. Fast growing, medium-sized to high tree, 15-20 m high, with a crooked trunk that forks in the lower half of the crown. Wide and round crown. Fresh, green leaf with 3-5 leaflets. Decorative, also due to its long and rather slender suspending fruit bunches with sickle-shaped winged fruits. Park tree for wet soils. Can be planted as an avenue tree on very wide green banks.

## negundo 'Auratum'

(syn. Acer negundo 'Odessanum')



Späth'sche Baumschulen, Berlin, Germany, 1891. Species-specific growth, but not as big, final height 5-7 m. Leaves very beautiful golden-yellow, often with red petioles. The leaf in the heart of the crown is slightly greener. Park tree or specimen shrub.

## negundo 'Aureomarginatum'



Dieck Baumschulen, Heidgraben, Germany, 1885. Like above, but with a yellow-white leaf edge. Height 6-10 m. Small tree or large shrub.

## negundo 'Aureovariegatum'



Belgium, 1869. Introduced by Späth'sche Baumschulen, Berlin, Germany, 1887. Like above, but with golden-variegated leaves with yellow spots. Height 6-8 m. Park tree or specimen shrub.

## negundo 'Flamingo'



J. Bastiaansen, Oudenbosch, the Netherlands, 1976. Fast-growing medium-sized tree, 6-8 m high. Light green leaves with silver-white and pink variegation. Fresh leaves have a soft pinkish hue. Attractive specimen tree for parks and gardens.

## negundo 'Variegatum'

(syn. Acer negundo 'Argenteovariegatum')



Toulouse, France, 1845. Species-specific growth, but not as high. Silver-variegated leaf with cream-white edge and cream-white spots, with a slightly pink hue when emerging. Cannot be planted in locations that catch full wind or onshore wind. Sometimes leaves turn green rather than variegated, if this occurs, it is recommended to promptly prune these branches. Attractive park tree.

## opalus Italian maple



Up to 15 m high spherical-growing Maple originally from southern Europe, Italy, Spain to southern Germany. Leaves emerge red, hand-shaped, dark green with a blue-green underside. Golden-yellow to orange-red autumn colouring. Flowers with large yellow clusters in March-April. Brown winged fruits (samara). Grey-brown grooved trunk. Grows on all soils. Good drought and heat resistance. Moderately wind resistant.

## palmatum Japanese maple



A slow-growing specimen tree. Height up to 8 m. Often as wide as it is high. Hand-lobed green leaf (5-7 lobes). Beautiful purple-brown autumn colouring. Thrives in full sunlight as well as in shady locations. To be planted as a specimen tree in gardens and parks.

## palmatum 'Atropurpureum'



Constant Watez, Naarden, The Netherlands, 1910. A slow-growing specimen tree. Height up to 5 m. Leaf uniformly auburn, hand-lobed (5-7 lobes). To be planted as a specimen tree in gardens and parks.

## pensylvanicum

(syn. Acer striatum)



Origin: Eastern part of North America. Tree with vase-shaped crown, height up to 10 m high. Whitish-green striped bark, highly decorative. Does not prefer full sunlight. Attractive park tree.

## platanoides Norway maple



Origin: Europe, Caucasus. Acer platanoides is found in more northern areas than Acer pseudoplatanus. In the Netherlands sometimes found in the wild. Robust tree, height up to 20-25 m, with a wide, dense crown. Has a sycamore-like light green leaf, hand-lobed with a sharp and deeply serrated margin. Yellow autumn colour. Flowers before the leaves emerge, with relatively large upward and patulous bunches of striking green-yellow flowers. Spectacularly flowering. Fast grower, endures shade. Less suitable for closed pavements. Does not tolerate moist bog-like soils, which cause the branches and crown to wither and leaves to fall prematurely. Park tree. The selections are better suited for avenue and street planting.

## platanoides 'Autumn Blaze'



Naktuinbouw & Geessink Boomkwekerijen, Lichtenvoorde, the Netherlands. The mother tree is in the Achterhoek area in the Netherlands. Tree with a very straight trunk and rising crown, height approx. 15 m. Top of the crown is egg-shaped and oblate. Flowers profusely in golden yellow bunches. Leaves bright green, turning golden-yellow in autumn. One-year-old trees already have many branches. An excellent avenue tree.



Acer palmatum



Acer pensylvanicum



Acer platanoides



Acer platanoides 'Cleveland'



Acer platanoides 'Deborah'



Acer platanoides 'Drummondii'

### platanoides 'Cleveland'



Scanlon Nurseries, Olmsted Falls, Ohio, USA, 1947. Medium-sized tree 10-12 m high. Striking, upward rising, compact and elliptical crown, 4-5 m wide. Flowers profusely with yellow bunches. One of the best American selections to be used as an avenue and street tree on open green verges.

### platanoides 'Columnare'



Simon-Louis Frères, Metz, France, 1855. Columnar shape and with small, deeply lobed leaves. Height approx. 15 m. Flowers profusely with yellow flower bunches, yellow autumn colouring. Ideal for narrow streets. A specimen tree in places where one wants to create a pillar effect in the planting scheme.

### platanoides 'Crimson King'



Gebroeders Tips, Herk-de-Stad, Belgium, 1937. Selected from seedlings of Acer platanoides 'Schwedleri'. Height 8-15 m. Fast-growing, conical crown. Leaf shiny dark red when emerging, later turning auburn.

### platanoides 'Crimson Sentry'



A. McGill & Son, Fairview, Oregon, USA, 1974. Strong rising red-leaved variety of Acer platanoides. Height up to 10 m. Very narrow crown, later wider. Densely massed, red leaves. Avenue tree for open green verges.

### platanoides 'Deborah'



Cannor Nurseries Ltd, Victoria, British Columbia, Canada, 1975. Selection of Acer platanoides 'Schwedleri'. Slightly stronger growth. Height 10-15 m. Develops a straight stem and a wide pyramidal, evenly branched crown. The fresh leaf is bright red, turning dark green over time. Excellent avenue tree.

### platanoides 'Drummondii'



Mrs. Drummond, Stirling, UK, 1903. Slow grower, 8-15 m high. Broad pyramidal, dense crown. Variegated green leaf with a wide cream-white edge. Sometimes leaves turn green, if this occurs, it is recommended to promptly prune these branches. No specific soil requirements. Park tree.

### platanoides 'Emerald Lustre'®

(syn. Acer platanoides 'Pond')



Bailey Nurseries, St. Paul, Minnesota, USA, 1979. Strong grower, 16-19 m high. Very strong root development, best used on wide green verges. Deep green leaf with yellow autumn colour. Can endure partial shade. Flowers profusely with green-yellow flowers in bunches. Easily disperses its seeds. Not cultivated in Europe.

### platanoides 'Emerald Queen'™



John McIntyre and A. McGill & Son, Fairview, Oregon, USA, 1963. Has a more upright growth habit than the species, 12-15 m high and 8-10 m wide. Fast grower. When emerging, the leaf is light pink, with pinkish-red top shoots, later turning shiny green. Because of its excellent characteristics, this tree is widely planted as an avenue or street tree.

### platanoides 'Faassen's Black'



Gebroeders Tips, Herk-de-Stad, Belgium, 1937. Introduced by Faassen-Hekkens Nursery in 1946. Closely resembles 'Crimson King', but the leaf has a darker shade of auburn. Dense, irregular and conical crown, height 8-15 m. Park tree with very dark foliage. Is often replaced by Acer platanoides 'Royal Red'.

### platanoides 'Fairview'™



John McIntyre and A. McGill & Son, Fairview, Oregon, USA, 1985. Cultivar of the well-known 'Schwedleri' type. Upright, ovate crown of approx. 13 m high and 10 m wide. However, slightly narrower and more upward than 'Schwedleri' and 'Deborah'. Buds reddish-purple and then the foliage turns bronze-coloured. Beautiful avenue and street tree, with species-specific soil requirements.

### platanoides 'Farlake's Green'



Boomkwekerij G. Vermeer Holland B.V., Opheusden, the Netherlands, 1983. Selection from a seedling trial in their nursery. Fast grower, olive-green bark. Issued by the Naktuinbouw. Medium-sized tree, 20 m high. Good avenue tree.

### platanoides 'Frisine'®



Boomkwekerij De Martelaer, Zelzate, Belgium, 2012. Columnar, compact growth, resembling 'Columnare'. Height 12-15 m. Leaves with yellow edges. Yellow autumn colouring. Grows on all soils, if not too moist. Healthy selections. Tolerates pavement. As a street and avenue tree.

### platanoides 'Globosum' Mop head Norway maple



Louis Van Houtte (1810-1876), director Brussels Botanical Garden, Gentbrugge, Belgium, 1873. Famous mop head maple with oblate, spherical and very dense crown. Height 3.5-4 m. Best grafted at a height of at least 2.20 m. Leaf slightly smaller than the species. Flowers species-specific. Can grow very wide. Used more as a specimen tree and on squares, etc.

### platanoides 'Meyering'



Grootendorst, the Netherlands, 1969. Narrow tree, height up to 15 m. Buds in a striking light brown colour, returning to green in summer. Beautiful red-orange to purple autumn colour. Park and avenue tree.



Acer platanoides 'Fairview'



Acer platanoides 'Farlake's Green'



Acer platanoides 'Globosum'



Acer platanoides 'Palmatifidum'



Acer platanoides 'Princeton Gold'



Acer platanoides 'Royal Red'

### platanoides 'Olmsted'



Scanlon Nurseries, Olmsted Falls, Ohio, USA, 1952. Introduced in 1955. Improvement of the old, French cultivar 'Columnare'. Columnar to narrow conical crown, 10-12 m high and 4 m wide. Slow grower. Has a straight central leader. Leaf species-specific. Beautiful yellow autumn colouring. Small avenue tree for green verges.

### platanoides 'Palmatifidum'

(syn. Acer platanoides 'Lorbergii')



Max Richard Lorberg (1840-1878), Lorberg Nursery, Biesenthal, Germany, 1878. Park tree with a height of 10-15 m, with a densely branched, round crown. Attractive, deeply serrated, light green leaf. Rarely flowers. Slow grower.

### platanoides 'Parkway'®

(syn. Acer platanoides 'Columnarbroad')



J. Frank Schmidt & Son Co., Boring, Oregon, USA. Very hardy cultivar, one of the best Norwegian maple trees for use in urban environments. Height up to approx. 12 m, width 7 m. Wide pyramidal to ovate crown, with protruding trunk, straight stem and inclining branches. Fast grower, wider than 'Columnare'. Leaf dark green with yellow autumn colour. A healthy tree for wider avenues, streets and boulevards.

### platanoides 'Princeton Gold'

(syn. Acer platanoides 'Prigo')



Princeton Nurseries, Kingston, New Jersey, USA, 1987. Small tree with a round crown and a height of 9-10 m. Beautiful golden-yellow foliage that is resistant to scorching in hot summers. Very slow grower. Hardly cultivated.

### platanoides 'Royal Red'



Martin Holmason, Pacific Coast Nursery, Portland, Oregon, USA, 1962. Height 15 m and a conical growth. Often used instead of the Dutch varieties 'Faassen's Black' and 'Crimson King'. Has beautiful, auburn leaves, slightly more reddish than its Dutch counterparts. No other differences. Park tree.

### platanoides 'Schwedleri'



Found and named by Carl Heinze Schwedler (1807-1880), Upper Silesia, Poland, 1864. Medium-sized tree with a height up to 15 m. Wide pyramidal, later a slightly more rounded crown. Straight trunk. Buds auburn in spring, forming an attractive contrast with the amber-coloured flower bunches. Later dark green leaf, shiny, with a light red hue along the midrib. Park and avenue tree. Requires fertile soil. Resembling 'Fairview' and 'Deborah'.

### platanoides 'Summershade'



Princeton Nurseries, Kingston, New Jersey, USA, 1958. Robust grower, with strong central leader. Ovate, rising shape, height up to 15 m. Dark green, almost leathery leaf that is resistant to scorching and insect damage. Blooms profusely with typical yellow flowers. Good avenue tree.

### platanoides 'Superform'



Milton Nursery, Oregon, USA, 1963. Introduced in 1969. Perfectly shaped crown. Wide ovate to rounded crown with wide upward rising branches. Height approx. 13 m, width 12 m. Fast grower. Develops a uniform symmetrical crown. Leaf mid-green with yellow autumn colour. Buds early. Beautiful avenue tree for wide avenues and boulevards. Very hardy. Not cultivated in Europe.

### pseudoplatanus Sycamore, Sycamore maple



Origin: (Central) Europe, Western Asia. In the Netherlands often occurring in the wild. Imposing, tall tree with a height of 25 m and a wide, regular, dense crown, which can be rather variable in shape. Deep, well-branched root system with good anchorage. In its juvenile stage, it tolerates shade, later it prefers light. Often develops double buds and heavily forked trunks. No specific soil requirements. Endures (onshore) wind, but salty onshore winds often cause the leaf edge to burn. Widely used as a park tree in woodlands and such. Also planted for coppicing in shelterbelts, groves and thickets. Used in landscape road planting. If used for avenue and street planting, it is recommended to plant the selections rather than the species because of its highly variable crown shape.

### pseudoplatanus 'Amry'



Research Institute for Forestry and Landscape 'De Dorschkamp', Wageningen, the Netherlands, 1894. Develops a wide, ovate to round crown with broad spreading branches. Completely straight trunk. Leaf dark green. Fast growth in the juvenile stage. A good tree for street and avenue planting.

### pseudoplatanus 'Atropurpureum'

(syn. Acer pseudoplatanus 'Spaethii')



Späth'sche Baumschulen, Berlin, Germany, 1883. Strong-growing tree with a height up to 20 m. Crown is widely conical. Leaf dark green on top and dark burgundy-red to dark purple on the underside all through summer and autumn. Park, street and avenue tree. Prefers light, sunny streets because of its dark leaf colour.

### pseudoplatanus 'Brilliantissimum'



Clark, UK, 1905. Rather narrow tree, usually cultivated as half-standard or standard, with an almost spherical small crown. Buds with a distinctive pink hue, later the leaf turns yellowish-orange and then yellow-green. Colours to light green in late summer. Slowly growing park tree that can suffer from leaf scorch in strong afternoon sun.



Acer pseudoplatanus



Acer pseudoplatanus 'Atropurpureum'



Acer pseudoplatanus 'Brilliantissimum'



Acer pseudoplatanus 'Bruchem'



Acer pseudoplatanus 'Leopoldii'



Acer pseudoplatanus 'Negenia'

### pseudoplatanus 'Bruchem'



Research Institute for Forestry and Landscape 'De Dorschkamp', Wageningen, the Netherlands, 1984. Selection with a compact, narrow pyramidal crown and a strong-growing leader. In its juvenile stage, it grows upward in a narrow columnar shape. Height 20-25 m. Medium-sized, 5-lobed leaves, wider than they are long, rather thick and deep green with a blue-green underside. Street and avenue tree with a more narrow habit than the species. Healthy, almost free from tar spot disease and very hardy.

### pseudoplatanus 'Constant P'



Research Institute for Forestry and Landscape 'De Dorschkamp', Wageningen, the Netherlands, 1984. Has a beautiful, completely straight trunk often forking towards the top. Has a rather pyramidal to ovate crown, more open than 'Bruchem' due to its more or less spreading branches. Considerably thick, deep green, 5-lobed leaf, lighter green on the underside. Proved to be a perfect, healthy tree for avenues in suburban areas and for roadside planting.

### pseudoplatanus 'Corstorphinense'



Sutherland, Edinburgh, UK, 1883. Named after the location of the mother tree near Corstorphine Castel. Strong-growing, 12-15 m high tree, with a wide pyramidal crown. Faster growth than 'Worley'. Usually 3-lobed leaf, which has a bright yellow colour in spring, after which it soon colours to mat green. Does not suffer from leaf scorch. Hardly cultivated. Park tree.

### pseudoplatanus 'Erectum'



Simon Godfried Albert Doorenbos (1891-1980), The Hague, the Netherlands, 1935. Introduced by Lombarts Nursery in The Hague. Selection from trees on the square Nachtegaalplein in The Hague. Robust tree with a height of 16-20 m. Has a wide columnar crown in its juvenile stage, later growing wider and more upward with inclining branches. Very good wind resistant street and avenue tree for urban areas. For landscape planting, other shapes and varieties with a more open canopy should be taken into account.

### pseudoplatanus 'Leopoldii'



Domien Vervaene, Gent, Belgium, 1864. Named after King Leopold I of Belgium. Park tree with a height of 10-15 m. Solid growth with a rather wide, pyramidal crown, sometimes loosely round. Emerged leaves are pink, then turn yellow-variegated, changing to light yellow speckled and spotted.

### pseudoplatanus 'Negenia'



Naktuinbouw, Boskoop, the Netherlands, 1948. Very strong-growing tree, up to 20 m high. Regularly shaped crown, wide pyramidal. Wind resistant. Avenue and street tree for wide profiles. Also suitable for landscape road planting.

### pseudoplatanus 'Prinz Handjery'



Späth'sche Baumschulen, Berlin, Germany, 1860. Spherical-shaped, very slow-growing cultivar which once established, resembles Acer platanoides 'Globosum' in shape. It grows to a maximum height of 5 m. The young 5-lobed leaf emerges purplish and then turns yellow-green speckled. The underside of the leaf remains light purple in colour. Not sensitive to leaf scorch. Flowers and fruits are species-specific. Grows on all soils and has good wind tolerance. It is, however, sensitive to mildew and is consequently not much cultivated.

### pseudoplatanus 'Regal Petticoat'®

(syn. Acer pseudoplatanus 'Tunpetti')



Paul Gagnon, Nova Scotia, Canada, 2002. Selected from the Vimy Centennial Commemorative Canadian Maple Tree Collection. Ovoid crown, up to 20 m high and 10 m wide. Strong growth. Two-coloured hand-shaped leaves that emerge orange. Dark green top and dark purple underside. In autumn, the top turns golden-yellow and the underside scarlet. Highly resistant to Rhytisma acerinum, a plant pathogen that most commonly affects the Acer genus. Yellow, fragrant flowers in suspending bunches in April. Very hardy. Grows on all soils. Suitable for wide profiles.

### pseudoplatanus 'Rotterdam'



Henk W. Vink, Rotterdam, the Netherlands, 1944. Large tree, up to 20 m high with a wide columnar crown in its juvenile stage, later growing wide and upward with more or less inclining branches. Strong branches. Wind resistant street and avenue tree.

### pseudoplatanus 'Worley'



H.M. Willkomm, Germany, 1879. Introduced by Ohlendorff in Hamburg in 1893. Moderately growing tree, 10-12 m high. Irregular crown. Buds golden-yellow, later yellow. In a shady location, the foliage turns yellow-green and light green. Red petiole. Foliage can tend to scorch. Park tree.

### rubrum Red maple, Canadian maple



Origin: the Northeast of North America, Canada. Maximum height 15-20 m in the Netherlands and grows up to 30 m in its homeland. Wide, dense crown with auburn twigs and small, auburn buds. 3-5-lobed leaf with grey-green to bluish underside, and deep green top. Blooms in March with striking, dark red flowers. Winged fruits (samara) that drop in early summer. Strikingly red to orange-red, sometimes yellow-nuanced autumn colour. Does not prefer calcareous, dry soils and pavement. Attractive park tree for open grounds, tolerates some shade.



Acer pseudoplatanus 'Rotterdam'



Acer rubrum



Acer rubrum 'Franksred'



Acer rubrum 'Karpick'



Acer rubrum 'Karpick'

## rubrum 'Autumn Flame'



John McIntyre and A. McGill & Son, Fairview, Oregon, USA, 1964. Develops a rather low, dense and round to wide egg-shaped crown with spreading branches. Approx. 10 m high and approx. 8 m wide. Grows more slowly than other rubrum cultivars. Leaves smaller than the species, mid-green. Spectacular autumn colour from chrome-yellow to bright scarlet-red. Early colouring, 2 weeks earlier than other varieties. Does not bear fruits. Very hardy. Beautiful park tree, can also be used on squares or as an avenue tree, requires a lot of space.

## rubrum 'Brandywine'

(Acer rubrum 'October Glory' x Acer rubrum 'Autumn Flame')



US National Arboretum, Washington D.C., USA, 1994. Acer with stunning autumn colouring, from red to crimson, over a long period of at least 14 days. A seedless male selection. Rising crown that sags to a slightly rounded shape when maturing. Height 7-9 m. Width up to 4-5 m. Perfect street tree, can also be planted in narrow street profiles.

## rubrum 'Bumblebee'®



Dense, conical crown. Height 15-20 m. Grey trunk, young branches and twigs are red. Hand-shaped, bright green foliage, slightly shiny on top and grey-green on the underside, red petiole. Orange-red autumn colouring. Not for calcareous or overly moist soils. Good wind resistance, reasonably tolerant to road salt. For semi-paved surfaces, lanes and wide streets.

## rubrum 'Fairview Flame'



A. McGill & Son, Fairview, Oregon, USA, 1991. An American introduction with deep green leaf with touches of red. Beautiful scarlet-red autumn colouring. Grows pyramidal in its juvenile stage, and sagging to a slightly rounded shape at a later age. Height approx. 15 m. Width approx. 10 m. An excellent avenue and street tree.

## rubrum 'Franksred'

(syn. Acer rubrum 'Red Sunset'®)



J. Frank Schmidt & Son Co., Boring, Oregon, USA, 1940, introduced in 1966. A robust tree with a rising, wide egg-shaped to ovate and rounded crown, evenly branched. Protruding trunk and straight leader. Height approx. 15 m, width 10 m. Thick, very shiny, dark green leaves, long-lasting with early and beautiful orange-red to bright red autumn colours. Because of its habit, leaf and autumn colour, it is one of the most stunning Acer rubrum cultivars. Flowers profusely with red flower bunches. Attractive avenue tree. Soil and location factors similar to those of 'October Glory'. Also requires a warm planting location that is sheltered from the wind. Sensitive to road salt, so best to plant on wide green verges.

## rubrum 'Karpick'®



Schichtel's Nursery Inc., Springville, New York, 1992. Named after Frank E. Karpick (1902-1990) former city forester of Buffalo, New York. Very narrow growth with reddish twigs. Height approx. 12 m, width 6 m. Leaves bright green. Keeps its yellow-red autumn colour longer, when planted on drier soils. Narrow avenue tree.

## rubrum 'Morgan'



Morgan Arboretum, Canada, 1971. Strong grower, with an orange-red autumn colour. Keeps its colour until the leaves fall. Rising crown, but wider than 'Karpick' and 'Scanlon'. Height approx. 15-20 m. Avenue tree, preferably on open green verges.

## rubrum 'New World'



US National Arboretum, Washington D.C., USA. It forms an oval, rising crown of 13-15 m high. Dark green leaves and orange autumn colouring. Seedless selection. Avenue tree for urban environment. Thrives in heavy soils as well as moist soils. Very hardy.

## rubrum 'Northwood'®



University of Minnesota, USA, 1980. Tree with a height of 12-15 m and a width of approx. 9 m. Rounded, ovate crown. Reddish twigs. Orange-red autumn colour that lasts best on drier soils. Very tough avenue and street tree, one of the most hardy rubrum selections.

## rubrum 'October Glory'®

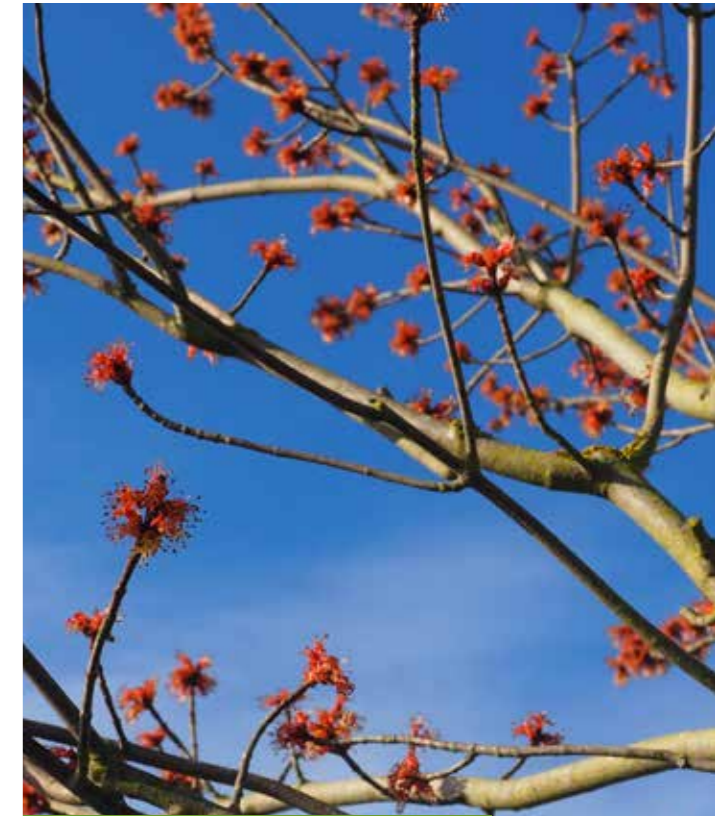


Princeton Nurseries, Kingston, New Jersey, USA, 1961. Grows wide pyramidal to wide ovate with a more or less round, evenly branched crown. The lower branches grow wide and almost horizontally, the upper branches are more inclined, up to the blunt top of the crown. Height up to 15-18 m, width up to 12 m. Shiny green leaves, which are thicker than the species, reddish to carmine-red autumn colour, depending on (mild) autumn temperatures. Street, avenue and park tree. Preferably on open green verges that are not exposed to strong or cold winds. Best on soils, which are non-calcareous, not too acidic and moist. A very beautiful avenue tree for sheltered locations.

## rubrum 'Red King'®



The Gilardelli brothers, Milan, Italy, 1988. This maple forms a broad, oval to cone-shaped crown, 16-18 m high, 8-10 m wide. The 6-8 cm, 3-5-lobed hand-shaped leaves emerge red-green, later shiny, dark green with a blue to silver-grey underside with a light coating of hair along the veins, red petiole. Blooms abundantly with dark red flowers in umbels before the leaves emerge in March-April. Dark red winged fruits (samara) hanging from 2 cm long stems follow in June. Silver-grey bark that peels off as it matures. Young twigs are first red-brown and later grey-brown. Flame-red autumn colouring. Does not grow on dry, calcareous soils. Grows in sun and partial shade, not very wind resistant.



Acer rubrum 'New World'



Acer rubrum 'October Glory'





Acer rubrum 'Scanlon'



Acer rubrum 'Somerset'



Acer rubrum 'Tilford'

### rubrum 'Redpointe'®

(syn. Acer rubrum 'Frank Jr.')



J. Frank Schmidt & Son Co., Boring, Oregon, USA, 2006. This 12-15 m high narrow, oval to pyramidal, fast-growing tree has a dense crown. Hand-shaped, dark green, opposite, glossy leaves 10 cm in size, with pale green underside and a red petiole. Flame-red autumn colouring. Small, red flowers in March-April. 2 cm winged fruits (samara) in pairs. Grey trunk and dark red-brown twigs. Grows on moist, well-drained soils, has fewer problems with chlorosis, when planted in soils with a higher pH. Can endure semi-pavement. Healthy selection.

### rubrum 'Red Rocket'



US National Arboretum, Washington D.C., USA, 1997. Very narrow crown with a maximum width of 2.5 m. Height approx. 10 m. Slowest growth rate of the columnar Red maples. Cultivated in very limited numbers. Beautiful and reliable red autumn colouring, ideal for narrow streets. Hardy.

### rubrum 'Red Super Sonic'™

(syn. Acer rubrum 'Resupszam')



Lake County Nursery, McMinnville, Oregon, USA, 2003. Narrow upright, relatively new selection, growing up to 12 m high with a width of 3 m. Small, red flowers in early spring. Resistant to pollution. Dark green leaf. Very attractive orange-red autumn colouring. For narrow streets and shade tolerating.

### rubrum 'Sartori'

(syn. Acer rubrum 'Joseph', Acer rubrum 'Fastigiata Sartori')



Vivai Sartori, Erba, Italy. Narrow, columnar selection. Slow growth and height of 8-10 m. Grey trunk, young branches and twigs are red. Hand-shaped, bright green foliage, slightly shiny on top and grey-green on the underside, red petiole. Colours from yellow to orange and then purple-red in autumn. Not for calcareous or too moist soils. Good wind resistance, reasonably tolerant to road salt. For semi-paved surfaces, narrow streets and lanes.

### rubrum 'Scanlon'

(syn. Acer rubrum 'Bowhall')



Edward H. Scanlon (1903-1976), Scanlon Nurseries, Olmsted Falls, Ohio, USA, 1948. Introduced in 1956. Densely branched, conical tree with a height of 8-10 m, sometimes 12 m. Width no more than 3-4 m. Low branched. Attractive as a park and square tree or as a specimen tree in public gardens. Green, shiny leaf with striking orange-red to crimson autumn colour. Needs airy, open soil to ensure good growth. Street and avenue tree on green verges.

### rubrum 'Somerset'

(Acer rubrum 'October Glory' x Acer rubrum 'Autumn Flame')



US National Arboretum, Washington D.C., USA, 1994. A seedless hybrid with a height of approx. 12 m and width of 10 m. Pyramidal growth in the juvenile stage, later more wide ovate growth. Beautiful deep red autumn colouring.

### rubrum 'Sun Valley'

(Acer rubrum 'Franksred' x Acer rubrum 'Autumn Flame')



US National Arboretum, Washington D.C., USA, 1994. A hybrid with a height up to 12 m and width up to 10 m. Ovate growth. Fresh green leaves in summer and beautiful red-orange autumn colouring. Good street and avenue tree.

### rubrum 'Tilford'



Scanlon Nurseries, Olmsted Falls, Ohio, USA, 1951. Named after plant pathologist Paul E. Tilford (1900-1986). Selection with a round crown, 13 m high and 8 m wide. Small, green leaf, very pointy. Moderately stable orange-red autumn colour. For wider streets and avenues and open verges.

### rufinerve Snakebark maple



Indigenous to Japan. Maximum height 10-12 m. Simple, 3-(to sometimes 5-) lobed leaf that turns yellow and red in autumn. Green bark and twigs with grey-white stripes. Buds red, and has green summer foliage. Twigs can be glaucous. Park tree.

### saccharinum Silver maple

(syn. Acer dasycarpum)



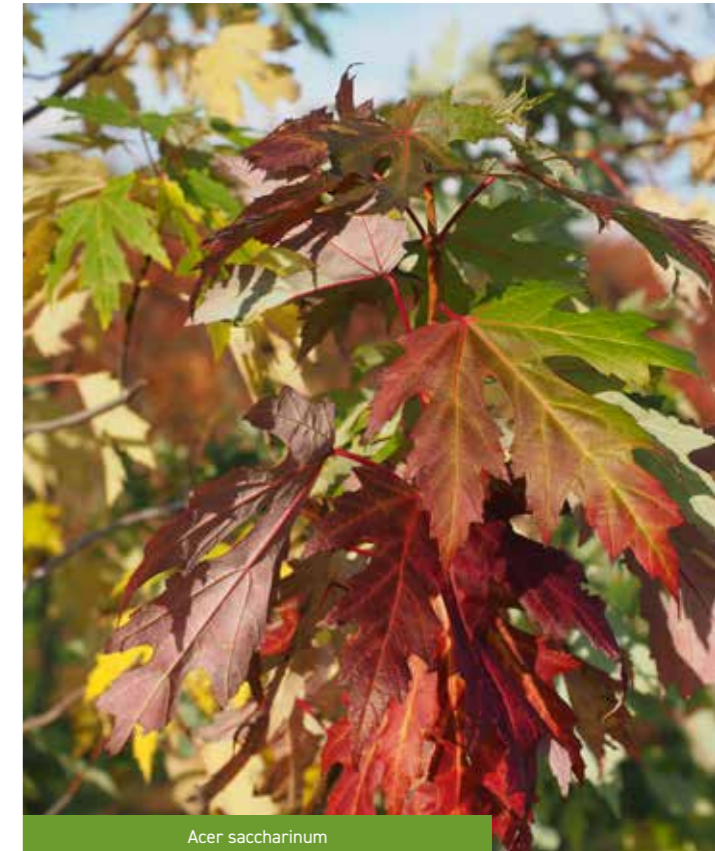
Origin: Central and Eastern part of North America. Fast-growing maple, in its homeland 35-40 m high, in the Netherlands 20-25 m. Wide, loose crown with flaring main branches, spreading side branches and many limply hanging twigs. Park tree for sandy, less acidic soils. Susceptible to branches breaking in strong winds. Leaf 5-lobed, deeply indented with serrated lobes, red petiole. Leaf top light green and glaucous silvery-blue underside.

### saccharinum 'Born's Gracious'

(syn. Acer saccharinum 'Born's Graciosa')



Georg Born, Rosenheim, Germany, 1959. Seedling, firstly described in 1959. Indented leaf, almost to the centre, with serrated lobes. Resembles Acer saccharinum 'Laciniatum Wieri'. Large tree, perfect for parks, wide avenues and boulevards.



Acer saccharinum



Acer saccharinum



Acer saccharinum 'Born's Gracious'



Acer saccharinum 'Laciniatum Wieri'

### saccharinum 'Laciniatum Wieri'

(syn. Acer saccharinum 'Wieri')



D.B. Wier, Belgium, 1873, introduced by Ellwanger & Barry Nursery, Rochester, New York, USA, 1875. Big tree with a height of 20 m. Wide, loose crown with overhanging branches and low hanging twigs. For that reason considered more of a park tree rather than an avenue tree. Very attractive in wide avenues and on green verges. Large, deeply indented leaf with narrow, sharply serrated lobes. Susceptible to branch breaking in windy locations.

### saccharinum 'Pyramidale'

(syn. Acer saccharinum 'Fastigiatum')



Späth'sche Baumschulen, Berlin, Germany, 1885. Tall and fast-growing cultivar with heavy upward branches and a height up to 20 m. Initial columnar growth, later more oval to round. Leaf is smaller than the species, rather deeply indented. Slightly susceptible to strong winds. Attractive tree for wide avenues and boulevards.

### saccharinum 'Silver Queen'



Interstate Nursery, Hamburg, Iowa, USA, 1966. Medium-sized tree, 10-15 m high, with an ovate, loose crown. A fruitless cultivar with a regular, rising crown that does not develop water sprouts. A very healthy tree with orange-red autumn colouring. Hardly cultivated.

### saccharum Sugar maple



Origin: Eastern part of North America, Canada. Cultivated and planted very rarely in the Netherlands for climatological reasons. Typical tree for the continental climate. Tall tree up to 25 m, with an almost round crown. Flowers yellow-green in suspending bunches. Leaf 3-5-lobed, the underside of the leaf being slightly blue-green. Yellow to orange-red autumn colour. Park tree for well-drained, humus-rich, sandy soils.

### saccharum 'Arrowhead'



Schichtel's Nursery Inc, Springville, New York, USA, 1979. A pyramidal rising variety of the Sugar maple. Up to 18 m high and 10 m wide, with narrowly tapering top. Grows almost columnar for a long time in its juvenile stage. The crown is densely branched and regular with a strong protruding trunk and a straight leader. Leaves are mid-green and have a yellow-orange autumn colour. Good avenue tree, especially on wider open green verges. Requires well-drained, loose, fertile, moist soils.

### saccharum 'Fall Fiesta'®

(syn. Acer saccharum 'Bailsta')



Bailey Nursery, Oregon, USA, 1987. A fast-growing, oval-shaped tree, up to a height of 25 m and a width of 15 m. Green flowers before the leaf emerges in spring. Dark green, shiny leaf. Orange-red autumn colouring. Grows on all soils. Good avenue tree.

### saccharum 'Fairview'™



A. McGill & Son, Fairview, Oregon, USA, 1975. Beautiful cultivar of the Sugar maple. Medium-high tree, height 15 m with a wide ovate crown of 12 m. Very strong growth with inclining branches and rounded crown top. Dark green foliage with orange autumn colour. Park and avenue tree for wider profiles, preferably on open green verges. Requires well-drained, fertile soil.

### saccharum 'Greencolumn'

(syn. Acer nigrum 'Greencolumn')



J. Frank Schmidt & Son Co., Boring, Oregon, USA, 1975. Medium-sized tree, height 15 m and 6-9 m wide with upward, rather narrow habit. More columnar in its juvenile stage, moderately egg-shaped with rather fine, uniform crown growth and rising main branches when maturing. Grows relatively slow. Light green foliage and beautiful yellow to apricot-orange autumn colours. Good street and avenue tree that is resistant to heat and drought. Requires well-drained, open soil that is sufficient moist and nutritious. As a street and avenue tree it is sensitive to road salt, heavy traffic, exhaust fumes, and therefore requires a spacious planting location on open green verges with some distance from heavy traffic. It is, however, a good avenue tree in suburban areas with a lower urban 'stress'-level. Very beautiful park tree.

### saccharum 'Green Mountain'®



Princeton Nurseries, Kingston, New Jersey, USA, 1964. Cultivar that excels by its stronger growth and more uniform habit than is typical for the species. Upward crown development. Height approx. 14-15 m, width 11-12 m. Wide ovate to wide egg-shaped crown with branches curved upward and round crown top. Leathery, dark green leaf with autumn colour hues of yellow and apricot-orange to red, which gives this variety its ornamental value. An attractive park tree. Can also be planted in wide avenues and boulevards, preferably on open verges. Very hardy. Requires well-drained, fertile soil.

### saccharum 'Legacy'®



Moller's Nurseries Inc, Gresham, Oregon, USA, 1981. A large tree with a height of 15-18 m and a width of 9-10 m. Crown is conical to narrow ovate. Regular branching with inclined, spreading branches in the lower part of the crown to more upright branches in the top of the crown. Fast growth. Thick, shiny, dark green leaf with reddish-orange to salmon-red autumn colour. Characteristic because of its uniform, symmetrical crown shape. Flowers yellow-green with suspending bunches, before the leaves emerge. Resistant to heat, but sensitive to road salt. Beautiful avenue tree on well-drained, fertile soils (species-specific), preferably on open green verges. Endures drought in urban areas relatively well, but is susceptible to heavy air pollution and stress factors. Preferably planted in quieter suburban areas. One of the most beautiful Sugar maples.



Acer saccharum



Acer saccharum



Acer tataricum subsp. ginnala



Acer tataricum subsp. ginnala

### saccharum 'Seneca Chief'



Schichtel's Nursery Inc, Springville, New York, USA, 1979. Selection with a narrow conical to narrow egg-shaped and compact crown habit. During its juvenile stage, it grows upward, almost columnar for a long period. Height approx. 18 m, width 9 m. Strong growth. Larger leaf than the species, dark green, golden-yellow to orange-red in autumn. Avenue tree, application and soil requirements similar to those for 'Arrowhead' referred to above.

### tataricum subsp. ginnala

(syn. Acer ginnala)



Small tree with irregular trunk development. Usually a high, relatively capricious shrub, up to 7 m high. Leaf dark green, in autumn a red-white marbled hue and later deep red. Blooms very profusely with whitish flower bunches after the emerging leaf. Used in parks and public gardens, often as a bush in very coarse shrub mixtures.

### tataricum subsp. ginnala 'Flame'® Amur maple, Tatarian maple



USDA Forest Service, USA, 1978. Introduced in Europe by C. Esveld, the Netherlands. This selection from seed has several variations. A shrub or small tree, 6-8 m high, with a dense, flattened and round crown. The leaves on young plants are often 3-lobed, older ones have wide oval, glossy green, leathery-feeling leaves that are doubly-serrated. Buds bronze-coloured. Flame-red autumn colouring. The twigs are yellow-brown, the bark is grooved and has a grey colour. Light yellow, fragrant flower clusters in May. Then red winged fruits (samara). Requires a sunny location on fertile, well-drained soil, otherwise it will be susceptible to verticillium and leaf anthracnosis. Does not tolerate pavement. Very hardy.

### tataricum 'Hot Wings'®

(syn. Acer tataricum 'Garann')



Fort Collins Wholesale Nursery, Fort Collins, Colorado, USA, 1993. Large shrub or round or small tree, 5-6 m high. White flowers in clusters in May after which the scarlet-red winged fruits (samara) appear. These contrast beautifully with the green foliage and later turn light brown. The leaves colour from yellow to orange-red in autumn. Sun and partial shade. Grows on all soils, if not too moist. Tolerates calcareous soils very good. Very hardy and resistant to road salt.

### triflorum



Origin: Asia. Large shrub or medium-sized tree. Height 6-9 m. Compact, round habit when planted in locations that catch the full sun. Upward, spreading habit when planted in the shade. Trifoliate leaf. Beautiful autumn colouring with a combination of orange, purple and yellow leaves. Light brown to auburn peeling bark with vertical fissures. Peeling starts at a young age. Pink to green-yellow clusters with 3 flowers. Is also referred to as the three-flower maple in the USA. Prefers well-drained soils. Typical tree for both gardens and parks, plant as a specimen tree.

### 'Warrenred'

(Acer truncatum x Acer platanoides)

(syn. Acer 'Pacific Sunset')



J. Frank Schmidt & Son Co., Boring, Oregon, USA, 1989. A hybrid selection which combines the best characteristics of both parents. Forms an upward spreading crown, more rounded than 'Keithsform'. Smooth, relatively soft leaves which shape resembles that of Acer platanoides. Height 10 m, width up to 7.5 m. Striking, shiny, dark green foliage, bright red in autumn, turns colour earlier than 'Keithsform'. Avenue and street tree. Application and soil requirements similar to those of 'Keithsform'.

### x zoeschense 'Annae'

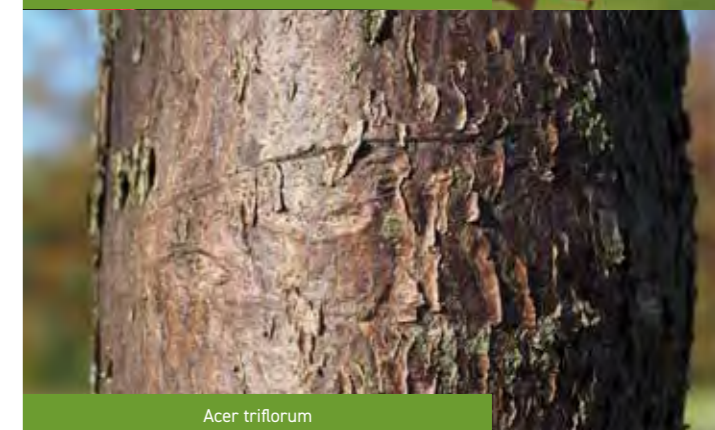
(syn. Acer neglectum 'Annae')



Fritz von Schwerin, Zöschen Baumschule, Germany, 1880. Small, slow-growing tree with a height of 8-10 m. Wide crown with horizontally spreading branches. Has some difficulties with developing a protruding leader. 5-lobed leaf, resembling Acer campestre. Buds auburn, later the foliage turns green. Red twigs, colourful emerging leaf and yellow-green flower bunches in May. Endures shade, urban air pollution and has no specific soil requirements. Medium-sized street and avenue tree, but needs to be planted on wider green verges because of its low spreading crown. A beautiful park tree.



Acer triflorum



Acer triflorum



Acer 'Warrenred'



Acer x zoeschense 'Annae'

# Aesculus

fam. Sapindaceae

## Horse chestnut

A genus that comprises 15 species. Although the range is described quite extensively in literature and in the dendrological yearbook *Dendroflora*, only a few species and (cultivated) varieties are produced by Dutch tree nurseries. Almost all of them are large trees with mighty crowns which draw the attention in spring with their upright flower bunches that look like candles and contrast beautifully with the light green leaves. The foliage provides a deep shade at the base of the trunk. The tree requires little or no pruning and a lot of space due to its size. Besides being attractive park trees, several species make beautiful street and avenue trees. *Aesculus* grows right up to the coast. However, when exposed to direct onshore winds, the foliage usually is susceptible to scorching.

### 'Autumn Splendor'

(syn. *Aesculus x arnoldiana* 'Autumn Splendor', *Aesculus glabra* 'Autumn Splendor')



University of Minnesota, St. Paul, USA. Originated from a hybrid of *Aesculus glabra* x (*Aesculus flava* x *Aesculus pavia*). Forms a 15 m high, dense, oval to round crown. The glossy green leaves are 15-20 cm long and have a magnificent orange-red autumn colouring. Yellow-green flowers in cylindrical umbels in May, later chestnuts in a faintly spiked husk. Grey-brown trunk that forms grooves as it matures. Grows in sun and partial shade on well-drained soil. Also endures pavement, hardy. Rust resistant.

**x carnea** Red horse chestnut  
(*Aesculus hippocastanum* x *Aesculus pavia*)  
(syn. *Aesculus rubicunda*)



Height 15-20 m. Wide, almost spherical crown. Leaf dark green, somewhat coarse. Early budding and long lasting, wind resistant. Flowers pinkish-red in 15-20 cm high bunches. Flowers one week after *Aesculus hippocastanum*. Not many fruits. Park tree and especially a sturdy avenue and street tree for streets that are not too narrow. Soil requirements slightly lower than for *Aesculus hippocastanum*.

*Aesculus x carnea* 'Briotii'

*Aesculus* 'Autumn Splendor'

# Aesculus

fam. Sapindaceae



Aesculus x carnea 'Briotii'



Aesculus x carnea 'Fort McNair'



Aesculus x carnea 'Plantierensis'

## x carnea 'Batouwe'



Selected by Naktuinbouw in the Betuwe area, the Netherlands from Aesculus x carnea 'Briotii' and introduced several years ago as certified grafting wood. Robust tree with a rather wide, roundish to conic crown, almost identical in shape to 'Briotii'. Deep dark red flower candles, that keep their colour better than the flowers of 'Briotii'. Excellent street and park tree. Not widely cultivated.

## x carnea 'Briotii'

(Aesculus hippocastanum x Aesculus pavia)



Pierre-Louis Briot (1804-1888), Trianon, France, 1858. Height approx. 15 m. Rather wide, more or less conical, dense crown with protruding leader. Curly, slightly waving leaf, dark green with a red midrib. A hybrid with dark red flowers. Attractive park tree and, particularly, a robust avenue and street tree (like Aesculus carnea).

## x carnea 'Fort McNair'®



Fort McNair, Washington D.C., USA. Forms a compact, oval to round, upright crown up to 12 m high and 10 m wide. Dark green sticky buds. Palmately compound, dark green leaves with usually 5 leaflets and pure yellow autumn colouring. Pink flowers in March-April in upright conical cylinders. Very healthy. Grows on all soils if not too moist. Can withstand pollution.

## x carnea 'Plantierensis'

(syn. Aesculus x plantierensis)



Simon-Louis Frères, Metz, France, 1894. Big tree with wide, sturdy crown, combining the characteristics of Aesculus hippocastanum and Aesculus x carnea, of which it is a hybrid. 7-lobed leaf with leaflets without a petiole, shiny green on top and may have lighter green on the underside, with hairs along the veins on the underside of the leaf. The upright flower candle has a shape and size similar to the candle of Aesculus hippocastanum. The flowers are light pink and later turn dark pink (similar to Aesculus carnea). Whilst an attractive park tree, because of its hybrid origin is also an excellent large street and avenue tree.

## 'Digitata'

(syn. Aesculus hippocastanum 'Digitata')



France, 1864. Dwarf shape with a small dense crown. Height 6-8 m. A slow grower with hanging branches. Small palmately divided leaf with 3-5 short and narrow leaflets. The foliage is very deeply to linear lacinate, attached together at the base, and the petiole is often somewhat winged. 'Perfectly' shaped leaflets have highly serrated margins. An ornamental, small specimen tree for smaller public areas and gardens. Never flowers.

# Aesculus

fam. Sapindaceae

**flava** Yellow buckeye, American horse chestnut (syn. Aesculus octandra)



Large, upright tree with a height of 15-20 m, a width of 8-12 m and a wide, conical crown. The trunk has deep brown bark that, over time peels off in wide strips. The winter buds are not sticky. Quinary leaf. Flowers with relatively short plume-like upright candles, green-yellow in colour and with a violet-coloured sap mark. Fruits approx. 6 cm, bare without prickles. Beautiful park tree.

## flava 'Vestita'

(syn. Aesculus octandra f. vestita)



Found in the wild in several locations in West Kentucky and Ohio in the USA. The cultivated variety that is grown in the Netherlands, is a vegetative reproduced clone of one selected individual specimen of the vestita in the Zuiderpark in The Hague, the Netherlands. Loosely and open growing tree with a height up to 15-20 m, with beautifully distributed branches and a wide conical crown. The quinary leaf emerges yellow-pinkish in spring, later turning bright green and then colouring to yellow and violet in autumn. Flowers with relatively short plume-like candles of light yellow-pinkish flowers. Grows and flowers better than other Aesculus flava varieties in the Netherlands. Because of its excellent and elegant growth, the attractive hues of its twigs, its splendid autumn colours and striking inflorescence, a very beautiful park tree deserves our attention.

**hippocastanum** Horse chestnut



Origin: Balkans, Caucasus. High, large tree rising up to 20 m and higher. Once established, it has a wide, domed crown with spreading branches and twigs that hang down to the lower end of the crown. Buds are sticky. White flowers in upright candles. In windy sites, its foliage often colours and shrivels prematurely. Generally bears many fruits with thick prickly husks. This is one of the reasons – as are its size and soil requirements – why it is not suitable as a street or avenue tree. However, it is a beautiful park tree for large parks, country homes, rural estates, etc.

**hippocastanum 'Baumannii'** Double flowering horse chestnut



A.N. Bauman, Bollwiller, France, 1822. Height up to 20 m, with a wide and slightly denser crown. Main branches relatively horizontal spreading, which means that the trunk must be pruned high enough, when used as a street or avenue tree. Leaf species-specific, keeps its green colour longer. Buds are sticky. Flower consists of double flowers, white with some red patches. Flowers at the end of May. Bears virtually no fruits, which is a major advantage when used as a large street and avenue tree. Beautiful tree for the widest streets and avenues, squares and boulevards.



Aesculus flava



Aesculus hippocastanum 'Baumannii'



Aesculus hippocastanum 'Baumannii'

# Aesculus

fam. Sapindaceae



Aesculus 'Homestead'



Aesculus indica



Aesculus indica 'Sydney Pearce'

## hippocastanum 'Pyramidalis'



Späth'sche Baumschulen, Berlin, Germany, 1891. A narrower and more upright growing variety of the Horse chestnut. The inclined branches grow at a 45-degree angle from the main trunk. This makes the crown shape more or less pyramidal to narrowly conical. Height 10-20 m. White flowers in upright candles. More suitable as a tree for less wide streets and avenues than the species, although its size, height and dense crown still require quite a lot of space.

## hippocastanum 'Umbraculifera'



Späth'sche Baumschulen, Berlin, Germany, 1884. By nature a dwarf shape that grows shrub-like with a very dense, ball-shaped habitus. Height 4-5 m. Normally grafted onto a standard, resulting in a standard tree with a very compact, round and small crown. As such, it can be used as an avenue tree in narrow lanes, but still needs to be planted on green verges because of the low crown shape at a height of 2.20 m.

## 'Homestead'®

(syn. Aesculus x arnoldiana 'Homestead')



State University, North Dakota, USA, 1990. Originated from a hybrid of Aesculus glabra and Aesculus octandra. Forms a 10 m high, dense, round crown. The leaf is very similar to that of Aesculus glabra, but is slightly narrower. Deep orange-red autumn colouring. Yellow-red flowers in upright umbels in May-June, sometimes a second bloom in July-August. 4-5 cm large non-edible chestnuts in husks with widespread soft spines, very seldom. Grows on all soils, but is not drought resistant. Very hardy. Free from horse chestnut leaf miner, hardly susceptible to leaf blotch and rust.

**indica** Indian horse chestnut, Himalayan horse chestnut



A tree which grows to 9-12 m in height and occurs naturally in the low mountains in the Himalayas between Kashmir and Western Nepal. Introduced in Europe in the mid-19th century. The leaves are 15-20 cm long and 2-6 cm wide, serrated and emerge bronze-green. Yellow autumn colouring. Flowers abundantly in May-June with white-pink cylindrical panicles. Chestnut in husks. A grey-brown bark that is fissured once established. Grows on all well-drained soils. Is free from horse chestnut leaf miner. Used in India in traditional medicine for skin disorders and rheumatism.

## indica 'Sydney Pearce'



Sydney Pearce, KEW gardens, London, UK, 1935. All characteristics are species-specific. Flowers beautiful pure pink.

# Aesculus

fam. Sapindaceae

## 'Laciniata'

(syn. Aesculus hippocastanum 'Laciniata')



A. & L. Leroy, Angers, France, 1843. Medium-high, rather narrow tree with a height up to 10-12 m. The palmately divided leaf has 6-8 leaflets with variable shapes, generally deeply indented with long, narrow tails. For this reason, it is sometimes laciniata to virtually thread-like. Highly ornamental foliage. Attractive specimen tree for parks.

## x mutabilis 'Induta'

(syn. Aesculus rosea 'Nana')



H.A. Hesse, Weener, Germany, 1905. By nature a shrub or a small tree often grafted onto a standard. This creates a relatively round, more or less spherical small crown with fine twigs and elegant quinary leaves. Red flowers or yellow flowers with a reddish hue in slender, dense, upright bunches. Beautiful little park tree, can also be planted as an avenue tree on wide green verges because of its low and spreading crown shape.

## x mutabilis 'Penduliflora'



Späth'sche Baumschulen, Berlin, Germany, 1902. Relatively narrow tree, usually grafted as a half-standard. Rather dense crown. Often also a large shrub. Leaves are quinary, oblong/ lancet-shaped. Flowers at the end of May - early June with loose and somewhat suspending panicles and small tubular flowers, with red calyx petals and yellow crown petals. Beautiful in public and private gardens, requires fertile soil.

## neglecta 'Erythroblastos'



Reinhold Behnsch Baumschulen, Breslau, Germany, 1913. Small tree or large shrub, depending on how it is cultivated. Distinct park tree with rather thin, grey twigs and pointy, non-sticky buds. When budding, the leaf emerges with a lively pink to soft cream-pink nuanced colour. The petioles often are bright carmine then. Later, the quinary leaf - of which the petiole is rather fine and short - turns bright green. Flowers in May-June with yellow flowers with red stripes. Beautiful, small specimen tree for parks and gardens. In England, the tree is usually planted in locations that are not susceptible to night frost.

**pavia** Red buckeye



Origin: Southeast and southern North America. The name of this species refers to Petrus Pavius (1564-1617), physician and botanist at Leiden University in the Netherlands during the 16th century. In our country, it is usually a small tree with a height of 6-8 m. Has a narrow crown and small, non-sticky buds. Quinary leaf with reversed egg-shaped, pointed leaflets with a short petiole, smooth and shiny dark green on top. Attractive autumn colour. Flowers bright red, in 10-15 cm high bunches, early June. Nice park tree.



Aesculus x mutabilis 'Induta'



Aesculus x mutabilis 'Induta'



Aesculus x mutabilis 'Penduliflora'

# Aesculus

fam. Sapindaceae



Aesculus pavia 'Atrosanguinea'

## pavia 'Atrosanguinea'



France, 1834. Strong-growing, medium-high cultivar of Aesculus pavia. Height up to 15 m with a wide, closed crown. The leaf emerges reddish, later turns light green. Flowers in dark red bunches 10-15 cm high. Attractive autumn colour. Very beautiful park tree.

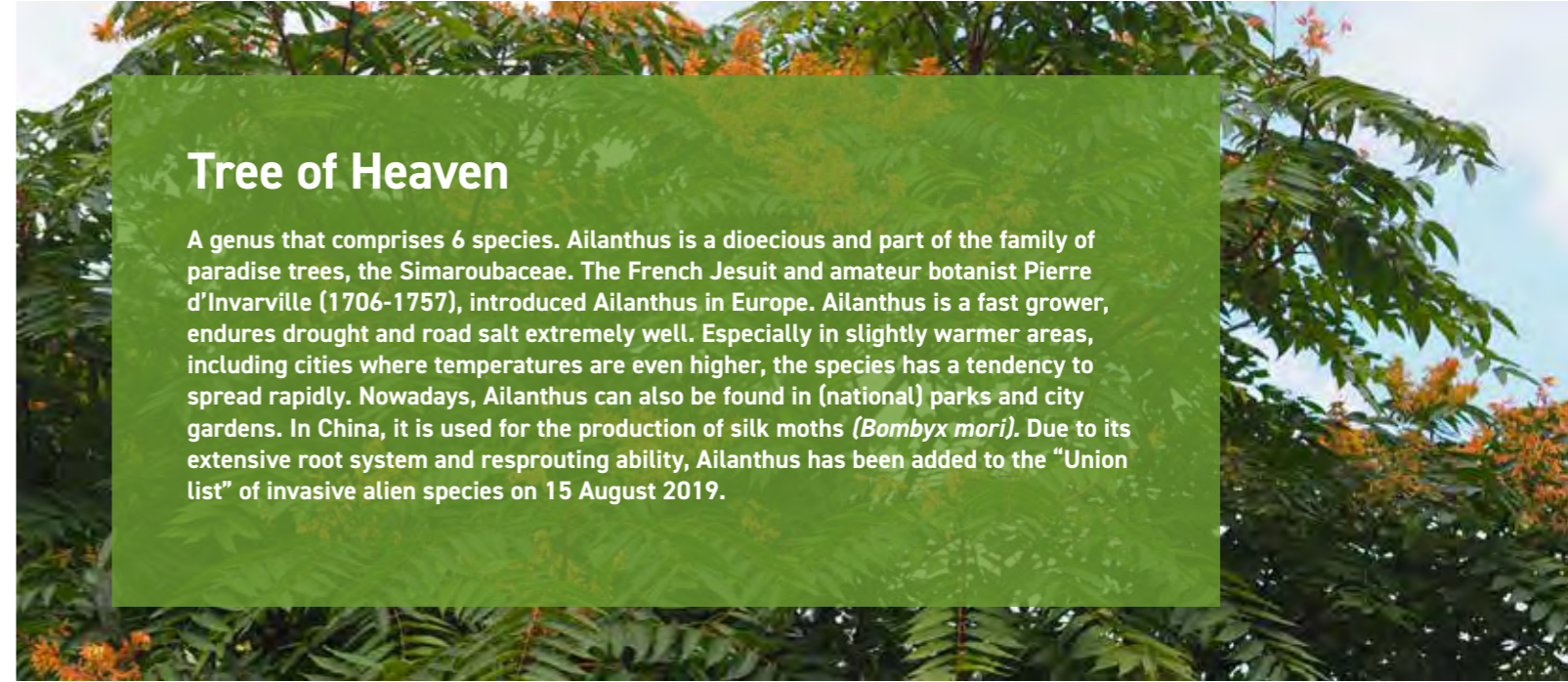
## pavia var. discolour



Grafted variety. Small, spherical tree that can reach 8 to 10 m in height. 5-leaflets, beautiful healthy leaf. Upright, salmon-coloured to yellow-red flowers in panicles. Few soil requirements, but sensitive to road salt. Requires a sheltered location.

# Ailanthus

fam. Simaroubaceae



## Tree of Heaven

A genus that comprises 6 species. Ailanthus is a dioecious and part of the family of paradise trees, the Simaroubaceae. The French Jesuit and amateur botanist Pierre d'Invarville (1706-1757), introduced Ailanthus in Europe. Ailanthus is a fast grower, endures drought and road salt extremely well. Especially in slightly warmer areas, including cities where temperatures are even higher, the species has a tendency to spread rapidly. Nowadays, Ailanthus can also be found in (national) parks and city gardens. In China, it is used for the production of silk moths (*Bombyx mori*). Due to its extensive root system and resprouting ability, Ailanthus has been added to the "Union list" of invasive alien species on 15 August 2019.

## altissima Tree of Heaven (syn. Ailanthus glandulosa)



Origin: China. Dome-shaped crown, 15 m wide and approx. 20 m high. Once established, it has irregular branches in the crown. Smooth, grey trunk with light, lengthwise stripes. Leaves emerge late: mid- to end May. Compound leaves 30-60 cm in length, 5 to 22 pairs of leaflets. Each leaflet is small, ovate and pointed. Leaves emerge deep red and later turn green on top and somewhat pale on the underside. An unpleasant odour disperses when the leaves are bruised. The fruits are approx. 4 cm long, hang in a large cluster of 30x30 cm and ripen from yellow-green to clear orange-red. Prefers warmth, light and especially space and has no problem with exhaust fumes. Endures air pollution and is relatively wind resistant. Park and avenue tree that tolerates paved surfaces.

## altissima 'Purple Dragon'

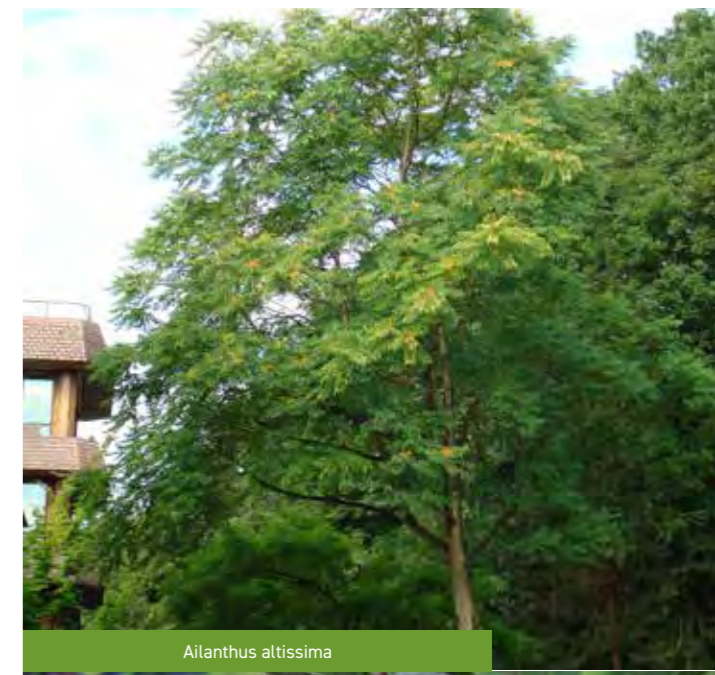


Tree up to 20 m high, with thick, auburn twigs. The fruits appear in August and are shiny red. Leaf species-specific, 40-60 cm long. Park and avenue tree that is wind resistant and endures air pollution. Hardly cultivated.

## altissima 'Sangiovese'



Height up to 20 m, with thick, red-brown twigs. Leaf species-specific, 40-60 cm long, glossy, deep dark red around spring and turning later in summer, dark purplish-green to dark green. Park and avenue tree drought resistant and tolerate air pollution.



Ailanthus altissima



Ailanthus altissima 'Sangiovese'

# Albizia

fam. Leguminosae

## Silk tree, Mimosa

A genus that comprises 150 species. Named after the Italian nobleman Filippo degli Albizzi, who introduced the genus in Europe in the 18th century. Albizia occurs in tropical and sub-tropical regions and can be found in tree and shrub form and even as a climbing plant. Currently, only the species julibrissin can be cultivated in our climate. The epithet julibrissin is derived from the Persian word: *gul-ebruschin*, meaning soft silken treads, in reference to the flowers' silky stamen.



Albizia julibrissin 'Summer Chocolate'

### julibrissin



A wide tree with almost horizontally growing branches. Height approx. 8-10 m. The decorative leaves are alternate pinnately compound and have a fern-like appearance. When the evening falls, they fold into a 'sleeping position'. In July-August, fragrant, light pink flowers together in dense fluffy heads that are attractive to bees. Requires protection in severe winters.

### julibrissin 'Boubri'

(syn. Albizia julibrissin 'Ombrella')



Pépinières Bourquin Soules, Tarbes, France, 1990. Small, wide tree with spreading branches. Leaves species-specific. In July-August, pure, pinkish-red flowers with long stamen in dense fluffy heads and large umbels. Requires protection in severe winters.

### julibrissin 'Ernest Wilson'



Ernest Henry Wilson (1876-1930) introduced this Korean selection in 1900 in Europe. This tree can reach a height up to 8 m. Has the same horizontal growing branches as the species. Good winter-hardiness. The flowers are red and resistant to rain.

### julibrissin 'Summer Chocolate'



Masato Yokoi, Kawaguchi City, Japan, 1996. Relatively new selection which buds green, after which the leaves turn chocolate-brown. A tree up to a height of 8 m. The first pink flowers appear in early July and can continue to bloom until the end of November. Buds reasonably late. Is moderately hardy.

# Albizia

fam. Leguminosae

### julibrissin 'Tropical Dream'®



Johan Possemiers, Kalmthout, Belgium, 1984. Selection from a group of seedlings from the higher-lying areas around Seoul, Korea. Grows to a height of 4-6 m with a wide flattened crown. Delicate, fern-like leaves, which close in the evening. Flowers from July to mid-September. Each day new pink flowers in upright panicles open up. During warm summer nights the flowers spread a pleasant sweet scent. Young plants normally start to flower after the 2nd year. Very hardy and suitable for climates with cold periods in winter. Prefers well-drained soils.



Albizia julibrissin



Albizia julibrissin 'Tropical Dream'



Albizia julibrissin 'Tropical Dream'



# Alnus

fam. Betulaceae

## Alder

A genus that comprises 35 species. Alder trees are indigenous to almost the entire northern hemisphere, partly as fast-growing trees, partly as shrubs. They like airy and moist soils. The species that are indigenous to the Netherlands, *Alnus glutinosa* and *Alnus incana*, are usually used for landscaping, primarily as brushwood, windbreakers and coppice wood or in undergrowth and wooded banks. However, cultivated varieties of these indigenous alders and some non-indigenous species are also used as park trees, avenue trees and sometimes as street trees. Because of their early flowering with catkins and their fruits, the well-known alder cones, alders usually also have great ornamental value.

### **cordata** Italian alder



Indigenous to Italy. Fast-growing tree, height 10-15 m. Relatively wide, egg-shaped crown. Leathery, shiny green leaf with heart-shaped leaf base. Rather large alder cones, 2-3 cm. Wind resistant tree that also grows in lighter soils. Relatively resistant to onshore winds. Park, avenue and street tree that also tolerates pavement. A

### **glutinosa** Common alder

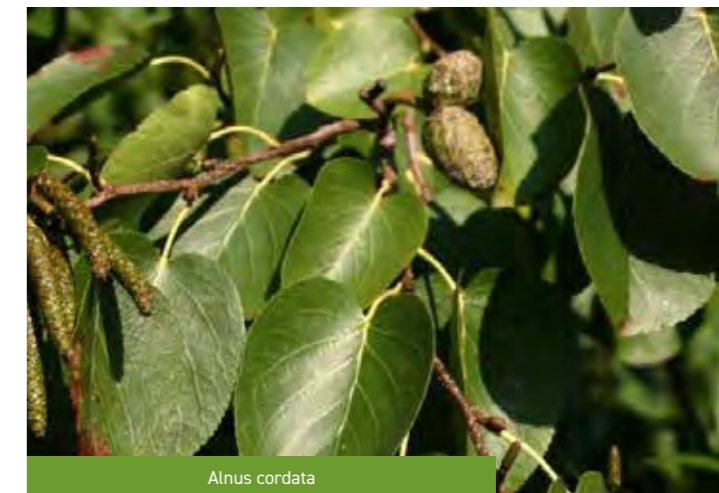


Origin: Europe. Indigenous Common alder, which is used primarily for landscaping purposes as brushwood, coppice wood, windbreaker and in wooded banks and verges. Height up to 20 m with an oblong, egg-round crown. Alder cones 1-2 cm. Sticky petiole. In the IJsselmeer Polder in the Netherlands, it is used locally as the main wood variety. This species is a pioneer plant. Endures damp soils and temporary flooding with muddy waters (alder marsh). Wind resistant, great recuperative power when cut back.

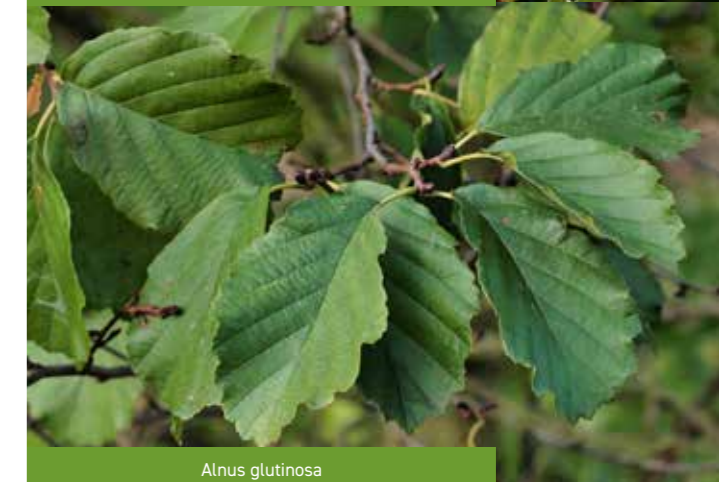
### **glutinosa 'Aurea'**



Domien Vervaene, Gent, Belgium, 1860. Small tree with a wide, small crown and yellow-green branches and twigs. Height up to 12 m. Initially, leaves are bright yellow and by mid-summer they turn yellow-green. Yellow, male catkins. Little ornamental value, normally as a shrub. As a tree, *Alnus incana* 'Aurea' is better in quality and a better alternative.



*Alnus cordata*



*Alnus glutinosa*

*Alnus x spaethii* 'Spaeth'

# Alnus

fam. Betulaceae



Alnus glutinosa 'Imperialis'



Alnus glutinosa 'Imperialis'



Alnus glutinosa 'Laciniata'

## glutinosa var. barbata



Origin: Caucasus. Re-introduced in cultivation in 1870. Very attractive tree with a height of 12-16 m. Flowers profusely, male catkins up to 15 cm, which give the tree a striking appearance in late winter and early spring. Can also be used as a street tree in moist soils.

## glutinosa 'Imperialis'



Brossart, Alençon, France, 1859. Elegant tree with a pyramidal crown, up to 8 m high. Rather small, deeply indented leaf with linear lobes. Elegantly hanging twigs. Because of its slow growth, not suitable for street plantings, but considered an attractive tree for parks and public gardens (preferably in small groups) and for larger gardens.

## glutinosa 'Laciniata'



Saint-Germain Gardens, Paris, France, 1755. Fast-growing, strongly rising tree, 15-20 m high, with slightly hanging branches. Leaves less deeply indented than 'Imperialis'. Because of its overhanging branches, it is unsuitable as a street tree, but perfect as a park tree and as an avenue tree on wider green verges. Prefers moist soil.

## glutinosa 'Pyramidalis'

(syn. Alnus glutinosa 'Fastigiata')



Späth'sche Baumschulen, Berlin, Germany, 1887. A rather big tree with straight, upward growing branches, making the crown considerably narrower and more regular than the species. Park tree, as well as avenue tree in suburbs on moist soils with an open structure.

## glutinosa 'Rubrinervia'



UK, 1870. Large tree with a strong and sturdy growth and a more or less conical crown. Has dark green leaves with a bright red to dark red petiole and veins. Young buds are sticky and auburn at first. Beautiful park tree.

## incana Grey alder



Origin: Europe, Western Asia, North America. Height up to 20 m with a loose, irregular, ovate crown. The Grey alder is a valuable tree in woods and landscapes. Normally a shrub or multi-stem tree, not easily cultivated as a tree. Like Alnus glutinosa, this species is a pioneer plant. Grey, capricious trunk. Susceptible to onshore wind. Can be planted on light and poor soils, then it can serve as a soil improver too. Also prefers calcareous soil.

# Alnus

fam. Betulaceae

## incana 'Aurea' Golden alder



Späth'sche Baumschulen, Berlin, Germany, 1892. Small tree, up to 6 m high with protruding central leader. Twigs orange-yellow and give this variety a beautiful winter silhouette. Bark lighter yellowish-brown than the species. Orange-yellow catkins and yellow leaves. Attractive park tree, also suitable for larger gardens. Very beautiful as a small street tree on open green verges and in gardens.

## incana 'Laciniata'

(syn. Alnus incana 'Acutiloba', Alnus incana 'Pinnatifida')



Sweden, 1836. Small tree with straight protruding leader. The soft-green leaves are relatively deeply indented, with narrow, serrated lobes. Park tree with a height of 10-12 m, may also be used as a moderately tall avenue tree on open green verges. Does not thrive as well on damp soils as Alnus glutinosa 'Laciniata'.

## incana 'Pendula'



Späth'sche Baumschulen, Berlin, Germany, 1892. Picturesque, weeping variety of the species, with wide overhanging branches. Height 6-8 m. Attractive park tree. Not widely cultivated.

## rubra Red alder

(syn. Alnus oregona)



Origin: Western North America, introduced in Europe in 1880. Robust tree with a height of 10-15 m, with an open, pyramidal crown, rather straight trunk and well-protruding leader. Grey bark. Leaf larger than the leaf of Alnus incana, 7-12 cm, greyish-green to bluish on the underside. The leaf margin is slightly curved inwards. Flowers early around January-February, with up to 10-15 cm long red, male catkins. Fast grower. No specific soil requirements. Therefore, not just an attractive park tree, but also a very good street and avenue tree, however, best planted on open green verges.

## 'Sipkes'

(syn. Alnus x cordinca 'Sipkes')



The Netherlands, 1965. Was considered for a long time to be a spontaneous hybrid of Alnus cordata x Alnus incana. Found by the landscape architect, C. Sipkes in the Russenduin near Bergen aan Zee, the Netherlands and originally called Alnus x cordinca 'Sipkes' for that reason. However, its hybrid origin proved doubtful, so its name should simply be Alnus 'Sipkes'. A tree with a height of 20 m and a wide egg-shaped, regularly branched crown and vertically protruding trunk and central leader (similar to Alnus cordata). Matte-shiny, dark green leaf, its shape resembling Alnus cordata leaf. Very beautiful avenue and street tree in wide street profiles that tolerates pavement. Soil requirements similar to Alnus cordata and Alnus incana.



Alnus incana 'Aurea'



Alnus incana 'Laciniata'

# Alnus

fam. Betulaceae



Alnus x spaethii 'Spaeth'



Alnus x spaethii 'Spaeth'

## x spaethii 'Spaeth'

(*Alnus japonica* x *Alnus subcordata*)



Späth'sche Baumschulen, Berlin, Germany, 1894. Introduced in 1908. Big, fast-growing hybrid with a height of 15-20 m and a pointy, pyramidal crown. Oblong, dark green leaf. Buds early and retains its leaf for a longer period. Purple-ash when emerging, dark green in summer and purple coloured in autumn. Flowers profusely with large catkins. Attractive park tree and also a very good street and avenue tree. Endures drier soils. Wind resistant and not susceptible to onshore winds.

## subcordata 'Oberon' Caucasian alder

(syn. *Alnus rubra* 'Oberon')



Simon Godfried Albert Doorenbos (1891-1980), The Hague, the Netherlands, 1955. A fast-growing variety of *Alnus rubra* which was selected by Naktuinbouw. Height 15-20 m. As an avenue tree, it rivals the well-known *Alnus x spaethii* 'Spaeth' in terms of quality and growth strength. 'Oberon' is a high-quality tree in every respect.

# Alnus



Alnus cordata



Alnus glutinosa var. barbata



Alnus x spaethii 'Spaeth'



Alnus glutinosa



Alnus glutinosa 'Laciniata'



Alnus incana



Alnus incana 'Aurea'



Alnus incana 'Laciniata'



Alnus 'Sipkes'



Alnus subcordata 'Oberon'

# Amelanchier

# A

fam. Rosaceae

## Juneberry, Shadbush, Serviceberry

A genus that comprises 25 species. Although most Amelanchier species develop into medium-high or high shrubs, some species are also cultivated into good standard trees. Amelanchier thrives on (slightly) humus-rich, moderately dry, sandy soils. In the past, many cultivars were grafted on Crataegus and Sorbus rootstock but because of fire blight susceptibility, this no longer is the standard. Amelanchier arborea, A. canadensis, A. laevis and A. lamarckii possibly all belong to one and the same species. Although they differ from each other in the amount of hairiness, they cannot be distinguished from each other genetically.

### alnifolia 'Obelisk'



Arboretum Kalmthout, Belgium, 1994. Selection from seedlings. Very slow-growing, narrow upright tree. White flowers in upright clusters, abundant flowering late April. Green, oval leaves. Has a beautiful, striking yellow-red autumn colouring. For small gardens and open green verges.

### arborea 'Robin Hill'



Robin Hill Arboretum, Lyndonville, New York, USA, 1970. Well-growing selection with a narrow, upward crown. Height 5-10 m, grey bark. Flowers white and very profusely. Spectacular autumn colouring, yellow-orange to red. Attractive little tree for gardens and open green verges in garden streets, etc.

### canadensis 'Rainbow Pillar'®

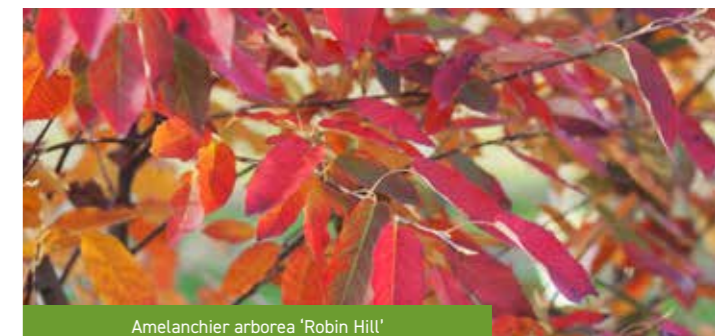
(syn. Amelanchier canadensis 'Glennform')



Herman Losely & Son, Inc., Perry, Ohio, USA. Selection from seedlings. Narrow, vase-shaped upward growth. Height up to 6 m and width 2-2.5 m. Green leaves species-specific, orange-red autumn colouring. White flowers in clusters in April. Edible blue berries follow in June. No specific soil requirements. Does not tolerate pavement. Mildew and rust free.



Amelanchier arborea 'Robin Hill'



Amelanchier arborea 'Robin Hill'



Amelanchier arborea 'Robin Hill'

# Amelanchier

fam. Rosaceae



Amelanchier laevis 'Snowflakes'



Amelanchier lamarckii 'Fastigiata'



Amelanchier lamarckii 'Fastigiata'

## laevis 'Ballerina'



Naktuinbouw, Boskoop, the Netherlands, 1980. High, rising shrub or small tree with spreading branches. Height 4-6 m. Foliage matte-shiny, dark green, dark purple-brown. Blooms profusely late April-early May with large, white flowers (Ø 25-30 mm) in long and more or less suspending bunches. In early June, plentiful, juicy and sweet, bright red, quite large fruits (Ø 10-12 mm) appear. Application and location factors identical to those of 'Cumulus'.

## laevis 'Cumulus'™



Princeton Nurseries, Kingston, New Jersey, USA, 1972. Usually as a shrub. When cultivated on a standard, also a small tree with a height of 7.5-10 m, with a relatively narrow rising crown of 3.5-5 m wide max. Strong grower. The beautiful mid-green leaf has bright orange-red to scarlet autumn hues. Flowers profusely with white flower bunches in early spring, simultaneously with the emerging leaf. Red-purple fruits in June. For private and public gardens, to be planted in sunny, sheltered locations. Can also be used as an avenue tree or on green verges. Requires fertile, humus-rich and moist soils, that are not too wet.

## laevis 'Snowflakes'



Proefstation Boomkwekerij, Boskoop, the Netherlands, 1991. Selection that flowers a bit earlier than lamarckii. Blooms abundantly with white flower clusters in early spring. The flowers are larger than the species. Forms rather large, blue fruits that are appealing to birds and edible. The leaf emerges pale pink. Yellow-red autumn colouring. Application and location factors identical to those of 'Cumulus'.

## lamarckii

(syn. Amelanchier canadensis)



Origin: Northeastern part of North America. Elegant tree or shrub with fine twigs, height up to 10 m and a dense crown. The oval leaf emerges brown, pilose on both sides. Flowers richly with white flower bunches. Beautiful autumn colour with spectacular yellow and red hues. Park tree and sometimes an avenue tree for open green areas.

## lamarckii 'Fastigiata'



Jardin des Plantes, Paris, France, 1900. Selection from seedlings. Lovely upright and clean-cut shape. The same characteristics as the species.

## 'Snowcloud'

(syn. Amelanchier 'Majestic')



Princeton Nurseries, Kingston, New Jersey, USA, 1990. Strongly upward-growing shrub or small tree, wider than 'Cumulus'. Height 5-6 m. Leaf yellowish to mostly dark purplish-brown in autumn. Small, standard tree for parks, graveyards, (public) gardens and free of diseases.



Amelanchier lamarckii

# Aralia

fam. Araliaceae

## Devil's walkingstick, Hercules club, Angelica tree

A genus that comprises 69 species, predominantly distributed throughout the Northern Hemisphere. Several species grow in Malaysia and New Guinea, and a few in Mexico and Central America. Often small trees or shrubs; some species have climbing characteristics. Aralia is closely related to Panax. Both species are especially known by the sharp spines which are spread over the entire plant.



Aralia elata



Aralia elata

### elata



The most common species in our climate, usually a capricious, little tree up to 6 m high. The large, alternate, pinnately compound leaves can grow to 120 cm. Young twigs are eaten as a delicacy in Japan. The cream-white flower panicles appear in July and remain until late September. Attracts many bees. The fruits are small and black. Hardy. Produces underground rhizomes. No specific soil requirements.

# Arbutus

fam. Ericaceae

## Strawberry tree

A genus that comprises 14 species that occur in North America. In Europe, 2 species occur in the Mediterranean area to Western France and Southwest Ireland. The fruits of Arbutus are often used for jams and spirits.

### unedo



The epithet unedo is derived from the Latin: unum edo, I eat only one. Evergreen shrub or small tree. Height 5-10 m, growing wider than high. Dark green, shiny leaves that are sharply serrated, 5-10 cm long and 2-3 cm wide. The white to pale pink flowers appear in terminal bunches from October to December. The round, orange, strawberry-like fruits have a rough surface and continue to ripen on the tree until the next flowering. To be used as a specimen tree on calcareous soils.

### unedo 'Rubra'



Red flowering cultivar, discovered by W. Aiton, Ireland, 1785. Characteristics same as the species.



Arbutus unedo

# Argyrocytisus

fam. Fabaceae

## Moroccan broom, Pineapple broom

A monotypic genus. Native to the central part of the Atlas Mountains. The genus was first described by Jules Aimé Battandier (1848-1922), a French professor, specialising in Algerian flora at the medical faculty in Algiers. The name *Argyrocytisus* is derived from the ancient Greek words: *argyro*, silver and *cytissus*, resembling a broom. All parts of this plant are toxic.



*Argyrocytisus battandieri*



*Argyrocytisus battandieri*

### **battandieri**

(syn. *Cytisus battandieri*)



Deciduous shrub or small tree, 4-6 m high. Silver-coloured, silky smooth, trifoliate leaves (3 leaflets) with 1 petiole. Yellow autumn colouring. Flowers from May to August with golden-yellow bunches, strongly resembling *Cytisus*. Very fragrant, spreading a pineapple aroma, hence its common name Pineapple broom. Requires a sunny location. Very drought and heat resistant. Does not tolerate heavy clay soils and prefers nutritious, well-drained soils. Use in gardens and on lawns.

### **battandieri 'Yellow Tail'**



Hillier Nurseries, Ampfield, Romsey, UK. This cultivar has a more compact growth than the species. Height 3-4 m. Its flowers are slightly bigger, up to 15 cm in size. Other characteristics species-specific.

# Asimina

fam. Annonaceae

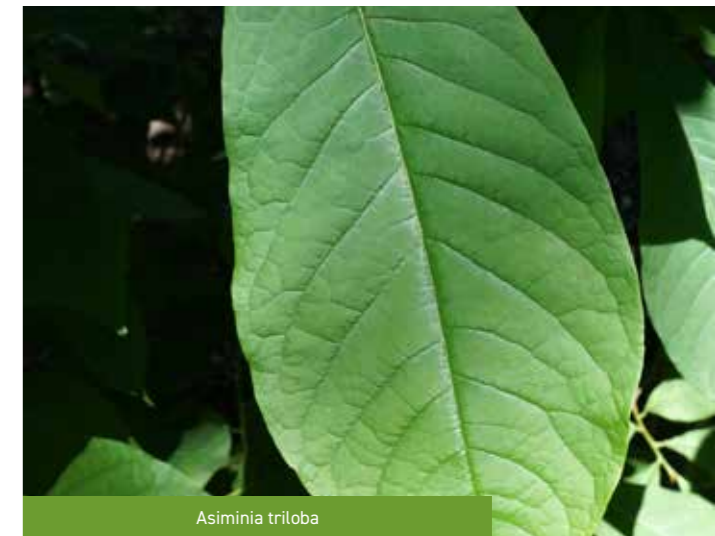
## Pawpaw

A genus that comprises 8 both deciduous and evergreen species. The name *Asimina* is adapted from the native North American language Miami-Illinois and was first described in 1598. The only hardy species is *Asimina triloba*. Fruits of the pawpaw taste after custard and are somewhat similar in taste to banana, mango and pineapple. Normally not eaten raw, but used to produce gelatine / pastes. Many cultivars, primarily for their larger fruits, are marketed.

### **triloba**



Origin: Eastern USA and Canada. Imported in Europe in 1736. Narrow, rising tree, 10-12 m high. Large, simple, alternate, oval leaves, 15-30 cm in size. Single, purple to brown, campanulate, 4-5 cm flowers in clusters on older branches. Big, green, fleshy fruits up to 16 cm that turn brown-yellow during ripening. Requires a sunny location and nutritious and well-drained soils. Garden and park tree.



*Asimina triloba*



*Asimina triloba*

# Betula

fam. Betulaceae

## Birch

A genus that comprises over 100 species. Birch are mostly trees with airy foliage through which the light easily passes. F.J. Fontaine published a book called *Het geslacht Betula* [The Betula genus], which we consider to be the most comprehensive publication on this subject. However, we will limit ourselves to the range that we carry in our nurseries. Birches are trees that do not like pavement. Because of their shape and height, these trees can be used on green banks, in verges and of course, as park trees.

**albosinensis** Chinese red birch  
(syn. *Betula albosinensis* var. *septentrionalis*)



Origin: China. Introduced in Europe in 1901 by Ernest Henry Wilson (1876-1930). Height in Western Europe 15-20 m. Wide crown with slack, auburn, scaffold branches and twigs. Bark is orange to orangey-brown with flaky bark strips. Partly because of this feature, this birch is an exceptionally beautiful ornamental park tree.

**albosinensis 'Fascination'**



C. Esveld, Boskoop, the Netherlands, 1986. The Chinese red birch variety, *Betula albosinensis* 'Fascination', has a beautiful salmon-coloured bark with peeling bark strips that are darker in colour. The contrast between the white-red bark and the hanging brown twigs is fascinating. Still a relatively young selection that does not grow much higher than 10 m. Pyramidal crown with narrower and more elongated foliage than the species. The leaf is a lovely dark green and turns golden-yellow in the autumn. Retains its leaves longer than other birches and has little or no trouble with outreaching branches. Hardly any soil requirements, although this birch does not like pavement. A real park tree, but can also be planted in narrow streets, green areas and avenues.

**albosinensis 'Pink Champagne'**



Stone Lane Gardens, Devon, UK. Selected from seeds originating in Kaolan, near Lanchow, Gansu, China. Ovate, rising habitus, 15 m high and 8 m wide. Soft pink to light orange peeling bark, because of the continuously production of white betulin. Pointy, oblong, ovate, shiny green leaves, 7 cm in size. Yellow autumn colouring. Yellow-brown, male 6 cm long catkins when the leaves emerge. Grows on all soils. Very hardy. For open profiles in streets and lanes and as a park tree.

Betula nigra

Betula albosinensis 'Fascination'

Betula albosinensis 'Fascination'





Betula costata



Betula ermanii 'Holland'

## albosinensis 'Red Panda'



Wakehurst Nursery, West Sussex, UK, 1980. Named by Jim Gardiner, RHS Wisley, UK, 2008. Selection from seeds. Pyramidal upright growth, 10-15 m high, 8-10 m wide. Dark green leaves, 7 cm, which turn golden-yellow in autumn. Decorative male catkins when the leaves emerge. Very attractive peeling bark, copper pink with hues of caramel and honey. Grows on all soils.

## alleghaniensis Yellow birch

(syn. *Betula lutea*)



Origin: Eastern North America. Imported in Europe in 1800. Beautiful park tree that can grow up to heights of 20 m in Western Europe. Initially the crown is narrow, growing wider later. The showy bark peels off with thin, curly flakes and has a yellowish silver-grey colour. The bark of older trees is reddish-brown. Oval, dull yellow-green foliage. Requires relatively moist soil.

## costata



Origin: Northeast Asia (Manchuria and Korea). Big tree with a height of 10-15 m, with an elegant, loose and, by nature, low-branched crown with relatively heavy spreading scaffold branches. Short, robust trunk, and for that reason only used as a park tree. Very beautiful, cream-white bark on the trunk and main branches that peels off in large pieces. Young branches are brown but their bark soon peels off in thin strips too. Firm leaf, oval to roundish-oval, leathery and deep green on top. Like *Betula ermanii*, it flowers with rather thick, 2 cm long, upright catkins. Golden-yellow autumn colour. Requires moist, rich soil. Highly attractive park tree, can also be used on wide green banks. Pruning the low-branched crown would spoil its attractive shape. One of the most beautiful birches. Hardly cultivated.

## delavayi subsp. potaninii

(syn. *Betula potaninii* 'Batal')



Indigenous to China. Named after Pierre Jean Marie Delavay (1834-1895), the subspecies *potaninii* was found by Grigory Potanin (1835-1920). A wide, low shrub that grows on rocky, steep slopes in the high mountains of China. This plant is characterised by its very narrow, long leaves that have many veins (sometimes over 40). Definitely not a tree. In recent years, this white-trunked birch is being cultivated in several nurseries, including Boomkwekerij Udenhout. According to taxonomist-dendrologist Dr. P.C. de Jong, this tree was incorrectly distributed as the *Betula potaninii*. It is however an unidentifiable hybrid (from Arboretum Kalmthout in Belgium), probably from *Betula papyrifera* x *Betula utilis*. Nevertheless, we cultivate this attractive, hybrid birch as a park tree. For want of a better official name, the basically incorrect name of *Betula delavayi* subsp. *potaninii* is still used. Hardly cultivated.

## x 'Edinburgh'

(*Betula albosinensis* x *Betula utilis*)



Botanical Garden Edinburgh, UK, 1970. Narrow, upright columnar tree. White twigs and trunk and white scaffold branches with orange spots. Green leaf that turns yellow in autumn. Grows on all soil types. Can be planted in small street profiles.

## ermanii 'Blush'

(syn. *Betula ermanii* 'Grayswood Hill, *Betula ermanii* 'Edenburg')



Piet de Jong, the Netherlands, 1985. Originates from Northeast Asia. A tree with a height of 10-15 m and a wide, round and rather open crown. Short, sturdy trunk, low-branched crown with heavy scaffold branches. Habit best resembles *Betula costata*. Firm leaves with regular doubly serrated margin, larger and coarser than the leaves of *Betula ermanii* 'Holland'. Yellow autumn colour. The bark is light brown to cream-white with an auburn bloom, but not as smooth, clear and bright cream-white as the bark of *Betula costata*. Park tree. Because of its wide crown and low branches, it is not suitable as an avenue tree. *Betula ermanii* 'Holland' is better suited to that purpose.

## ermanii 'Holland'

*Betula papyrifera* x *Betula ermanii*

(syn. *Betula ulmifolia*)



The Netherlands. High-rising tree with straight upright trunk, up to 15-20 m high. Crown wide ovate, in its juvenile stage rather narrow. Yellowish-white to greyish bark, often colouring brown-red. Triangular leaf, fresh, dark green. Striking yellow autumn colouring. Upright, relatively long and thick fruit catkins. Beautiful tree for parks and wide green verges in avenues.

## lenta Sweet birch

syn. *Betula carpinifolia*



Origin: North America. Imported in Europe in 1759. Initially a rather narrow rising and later wider, uniform crown. Height approx. 20 m. Brown, smooth bark that does not peel in the juvenile stage. Mature bark is thick, scaly and has deep grooves. Leaf is oblong egg-shaped, dull green with a lime-coloured underside. Beautiful yellow autumn colouring. Attractive park tree.

## lenta subsp. uber

(syn. *Betula uber*)

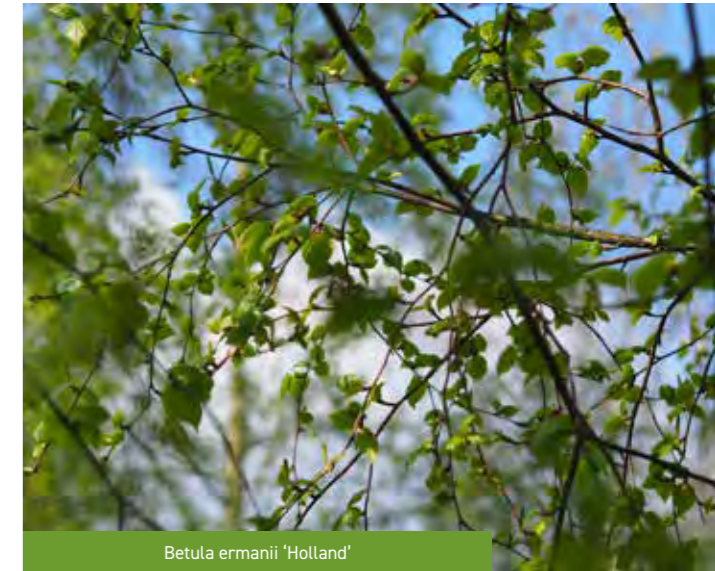


Relatively unknown mountain tree from Eastern North America. A small tree, with heights of 6-8 m, with a dark bark and circular leaves. The leaf margin is usually serrated, the petiole is slender, but strong and rather long, woolly pilose and bare twigs. Hardly cultivated.

## maximowicziana Big leaf birch



Originates from Japan. Imported in Europe in 1888. Fast-growing, tall tree, 15-25 m high. Very characteristic, large and sharply serrated leaf. Leaf resembles Linden leaf. Striking yellow autumn colouring. The trunk is greyish-white with large lenticels. To be used as a park tree.



Betula ermanii 'Holland'



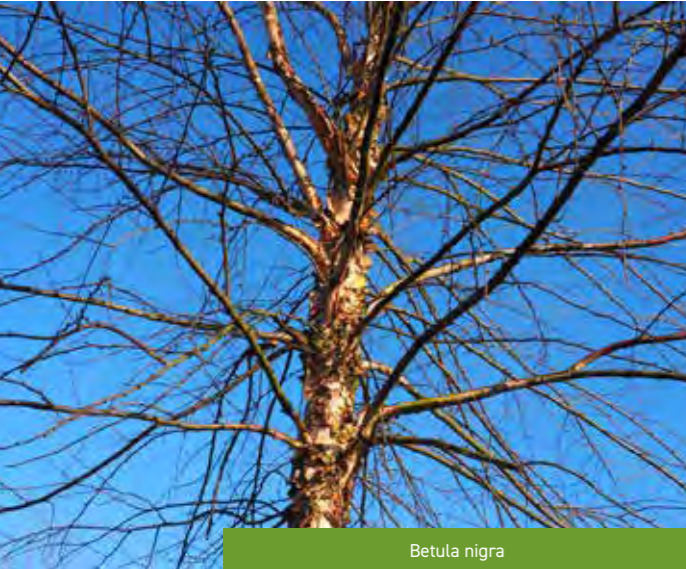
Betula ermanii 'Holland'



Betula maximowicziana

# Betula

fam. Betulaceae



Betula nigra



Betula nigra 'Dura Heat'



Betula nigra 'Dura Heat'

**nigra** Red birch, River birch  
(syn. *Betula rubra*)



Origin: Eastern part of the USA. Imported in Europe in 1736. Height 10-15 m, capricious crown with spreading to overhanging branches and soft twigs. The trunk forks at crown height. The bark of young trees is silver-white to grey, strongly peeling in curly, paper-thin strips that stay on the tree for a long time. Trunk and older branches blackish-brown. Leaf almost rhombic, shiny dark green. Striking yellow autumn colouring. Beautiful park tree, grows on all soils and endures both moistness and drought. Ornamental specimen tree, or in groups on wide green banks.

**nigra 'Dura Heat'**<sup>®</sup>  
(syn. *Betula nigra* 'BNMTF')



Moon Nursery, Loganville, Georgia, USA, 1992. Height 10-15 m, width up to 7 m. Beautiful yellow autumn colouring. Holds its yellow leaf one month longer than *Betula nigra* 'Heritage'. Small narrow and thick, dark green leaf. Cream-coloured peeling bark. No specific soil requirements. Endures extreme drought perfectly.

**nigra 'Heritage'**<sup>®</sup>  
(syn. *Betula nigra* 'Cully')



Earl Cully, St. Louis, Missouri, USA, 1979. Fast grower with pyramidal to wide ovate crown. Height 10-15 m. Shiny green leaf. No specific soil requirements and endures both moistness and drought. Cream-white bark, strongly peeling. Yellow autumn colour. Attractive park tree.

**nigra 'Summer Cascade'**



Shiloh Nursery, Harmony, North Carolina, USA, 1996. This cultivar has dark green, pointy leaves that turn yellow in autumn. In spring, it has very small catkins. Hanging branches. Resistant to drought and road salt. Specimen tree.

**papyrifera** Paper birch, American white birch, Canoe birch



Origin: North America, Canada. One of the most beautiful park trees among the birches, with a height up to 20-25 m. Variable growth with a loose, widening and relatively open crown, in which the thinner branches and twigs more or less overhang. Clear white bark, peeling in paper-thin strips, revealing the auburn trunk underneath. The leaf is oval, dull green. Requires moist but well-drained, sandy soils. In addition, a beautiful avenue tree when planted in separately planted groups on very wide green banks and verges.

**papyrifera 'Renaissance Reflection'**<sup>®</sup>  
(syn. *Betula papyrifera* 'Renci')



Fairview Evergreen Nursery Co., Sturgeon Bay, Wisconsin, USA. Hybrid with a rising, pyramidal growth. Dark green, pointy leaves. Clear white bark, non-peeling. Beautiful yellow autumn colouring. Very hardy and wood borer resistant.

# Betula

fam. Betulaceae

**pendula** Silver birch, European white birch  
(syn. *Betula alba*, *Betula verrucosa*)



Indigenous to Europe, Asia Minor. The best-known, indigenous birch in the Netherlands, rising up to 20 m, often multi-stemmed. Loose, irregular crown with strongly hanging twigs. White, strongly peeling bark. Later thick, greyish-green to black bark with coarse cracks. Leaf triangular to rhombic, shiny fresh green. Twigs covered with coarse wart-like lenticels. Primarily used for landscaping in shelter belts, wind- and firebreakers, forests, and as a specimen tree in parks and gardens. Low soil requirements. Like most birches, *Betula pendula* is very much 'pioneer wood' and, as such, it needs light. Not very susceptible to wind, but dislikes onshore wind. Birches are susceptible to changes in the growing conditions. Soil alterations such as compaction, raising of the soil and changes to the ground water level can be disastrous.

**pendula 'Crispa'** Swedish birch  
(syn. *Betula pendula* 'Dalecarlica')



Province of Dalecarlia, Sweden, 1887. Imported in 1932 in the Netherlands. Slender tree with overhanging twigs and deeply indented leaves. Moderately tall. Yellowish-brown autumn colouring. With its overhanging twigs it is an elegant, small avenue tree, but it can only be planted on wider green verges. Park tree, also beautiful in larger gardens.

**pendula 'Fastigiata'**  
(syn. *Betula pendula* 'Pyramidalis')



Simon-Louis Frères, Metz, France, 1870. High rising, columnar birch with upright, slightly bendy branches. Yellowish-brown autumn colouring. Beautiful winter habitus. Attractive as a specimen park tree.

**pendula 'Fastigiata Joes'**<sup>®</sup>  
(syn. *Betula pendula* 'Jolep1')



Boomkwekerij John De Lepper, Hulsel, the Netherlands. This selection has stronger branches and is more stable than 'Fastigiata', which sometimes blows open. Very tight-growing up to 7-8 m high and 1.5-2 m wide. Narrow, dark green leaves, yellow-orange autumn colouring. Good rust resistance. White trunk. Quite hardy. No specific soil requirements.

**pendula 'Laciniata'** Cutleaf weeping birch  
(syn. *Betula verrucosa* 'Laciniata', *Betula pendula* 'Gracilis')



Moscow, Russia, 1888. Introduced by Späth'sche Baumschulen, Berlin, Germany, 1930. Elegantly rising tree with upright, inclining branches, the ends of which hang down. Height 10-15 m. Deeply indented leaves. Yellowish-brown autumn colouring. For parks and gardens.



Betula pendula



Betula pendula 'Obelisk'

# Betula

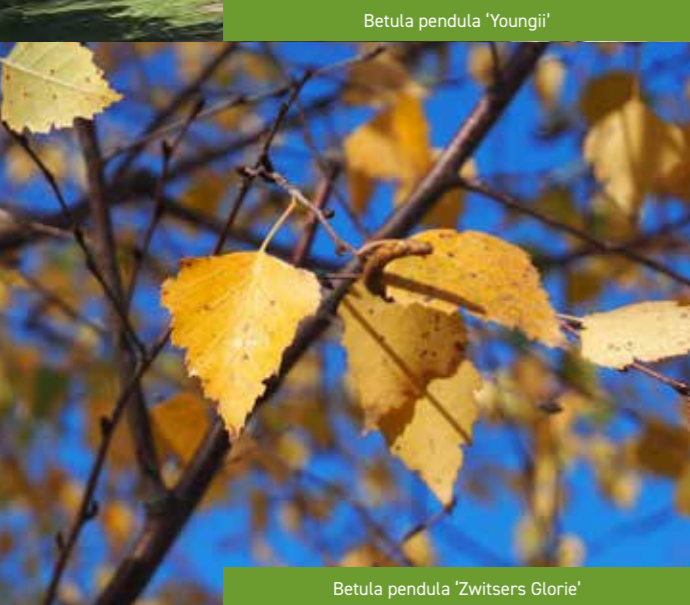
fam. Betulaceae



Betula pendula 'Royal Frost'



Betula pendula 'Youngii'



Betula pendula 'Zwitsers Glorie'

## pendula 'Obelisk'



Koninklijke Boomkwekerijen Alphons van der Bom BV, Oudenbosch, the Netherlands, 1956. Very similar to *Betula pendula* 'Fastigiata', but slightly more open in structure. Height up to 20 m and a beautiful white trunk. Triangular, dark green, doubly serrated leaf. Late yellow-brown autumn colouring.

## pendula 'Purpurea'



Späth'sche Baumschulen, Berlin, Germany, 1870. Rather small tree with irregular, ovate crown. Height 10 m. Purple to auburn foliage that keeps its colour all through summer. Colours to bronze-green in autumn. Requires better soil quality than the species to hold its colour. For parks and gardens. Hardly cultivated.

## pendula 'Royal Frost'®

(*Betula populifolia* 'Whitespire' x *Betula* 'Crimson Frost')  
(syn. *Betula pendula* 'Penci-2')



Evergreen Nursery Company Inc., Sturgeon Bay, Wisconsin, USA, 2006. Medium-sized tree that grows 16 m high and has an oval-shaped crown. Cultivar with purplish-red leaves which contrast beautifully with the white bark. Endures both full sun and partial shade. The leaves turn from red to yellow and orange in the autumn. Grows on all soils.

## pendula 'Tristis' Weeping birch



The Netherlands, 1865. The well-known Weeping birch with straight leader(s). Weeping branches and twigs. Height up to 20 m. Narrow, ovate crown with a loose and open structure. Bright white trunk and leaves that vary in shape and have a double-toothed margin. One of the most beautiful birches for parks and gardens, with an attractive winter silhouette. Also suitable as an avenue tree to be planted in the middle of wider green banks and verges.

## pendula 'Youngii' Young's weeping birch



UK, 1870. Another very well-known ornamental birch. Height up to 6 m. A weeping form with a top that does not grow upright and has an irregular flat screen-like crown with acutely weeping branches from which the side branches and twigs cascade towards the ground. Use as an attractive specimen tree on lawns.

# Betula

fam. Betulaceae

## pendula 'Zwitsers Glorie'



Sjef van Roessel, Boomkwekerij J. van Roessel, Moergestel, the Netherlands, 1994. A fast-growing birch with a vertical trunk. Narrow pyramidal habit. No heavy side branches. Branch position 45° and highly wind resistant. Height 10-15 m. White to grey-white bark, somewhat peeling. Triangular to rhombic leaf, shiny fresh green and later in autumn beautiful golden yellow. In spring, gracefully hanging fruit catkins 2-4 cm in size. This Silver birch makes few demands on the environment and consequently can survive in difficult circumstances. Quite suitable as an avenue and park tree. Lovely when planted as a double avenue. In gardens, birches are often planted in groups to enhance the effect of the white bark. A birch that shows its beauty in all seasons.

## platyphylla 'Dakota Pinnacle'®

(syn. *Betula platyphylla* 'Fargo')



State University, North Dakota, USA, 1986. Height up to 10-12 m and 3-4 m wide. As the name suggests, cone-shaped. White, smooth bark and a very beautiful upright form with a delicate and dense branch structure. In summertime, dark green foliage, in autumn turning into a bright yellow-orange colour. It does not bloom, but bears female and male catkins. An average to fast grower, not susceptible to diseases and can endure all kinds of weather conditions. Thrives in sun and partial shade, prefers neutral, dry or moist soil types. Because of its high tolerance, 'Dakota Pinnacle' is very suitable for urban planting. Whether planted in streets, on squares or in parks, the characteristic white bark and dark green or yellow-orange coloured crown will certainly draw attention to itself.

## populifolia 'Whitespire'



Edward H. Hasselkus, Madison Arboretum, Wisconsin, USA, 1983. Selected from seedlings of *Betula populifolia*. Snow-white trunk and beautiful autumn colouring. Grows pyramid-shaped to a height of 15 m. Resistant to air pollution.

## pubescens Common white birch

(syn. *Betula alba*)



Origin: Northern and Central Europe to Asia. Indigenous to the Netherlands like *Betula pendula*, but only on damp, acidic and marshy soils. Height up to 20 m. White bark, peeling in narrow strips. At the base of old trees, the bark is greyish green, soft and has deep grooves. Rhombic foliage. Leaf and twigs have soft hairs. Rising habit with few weeping branches. Buds later than *Betula pendula* and keeps its leaf longer. Primarily used in landscaping (similar to Silver birch) on humid marshy soils. In such locations also used as an avenue and park tree.



Betula pendula 'Zwitsers Glorie'



Betula pubescens

# Betula

fam. Betulaceae



Betula utilis 'Doorenbos'



Betula utilis 'Doorenbos'



Betula utilis 'Doorenbos'

**utilis 'Doorenbos'** Himalayan birch  
(syn. *Betula jacquemontii*)



Simon Godfried Albert Doorenbos (1891-1980), The Hague, the Netherlands 1933. Rising tree with diagonally spreading branches, with a height of 15 to 20 m. A narrow shape in its juvenile stage, later growing wider with a relatively uniform crown. Cream-white bark already at an early age, which peels in wide strips revealing the dark brown bark underneath. Leaf wide ovate, shiny dark green with bigger serration than *Betula utilis*. Very striking tree that blooms profusely. Very beautiful winter silhouette. Beautiful park and avenue tree on open green verges.

**utilis 'Grayswood Ghost'**



Tony Schilling, Grayswood Hill Estate near Haslemere, Surrey, UK, 1975. Cultivar obtained just before the parent tree died, hence the name *ghost*. Selection with a beautiful, white bark and very big, shiny green leaves. Beautiful park tree. Highly susceptible to frost. Hardly cultivated.

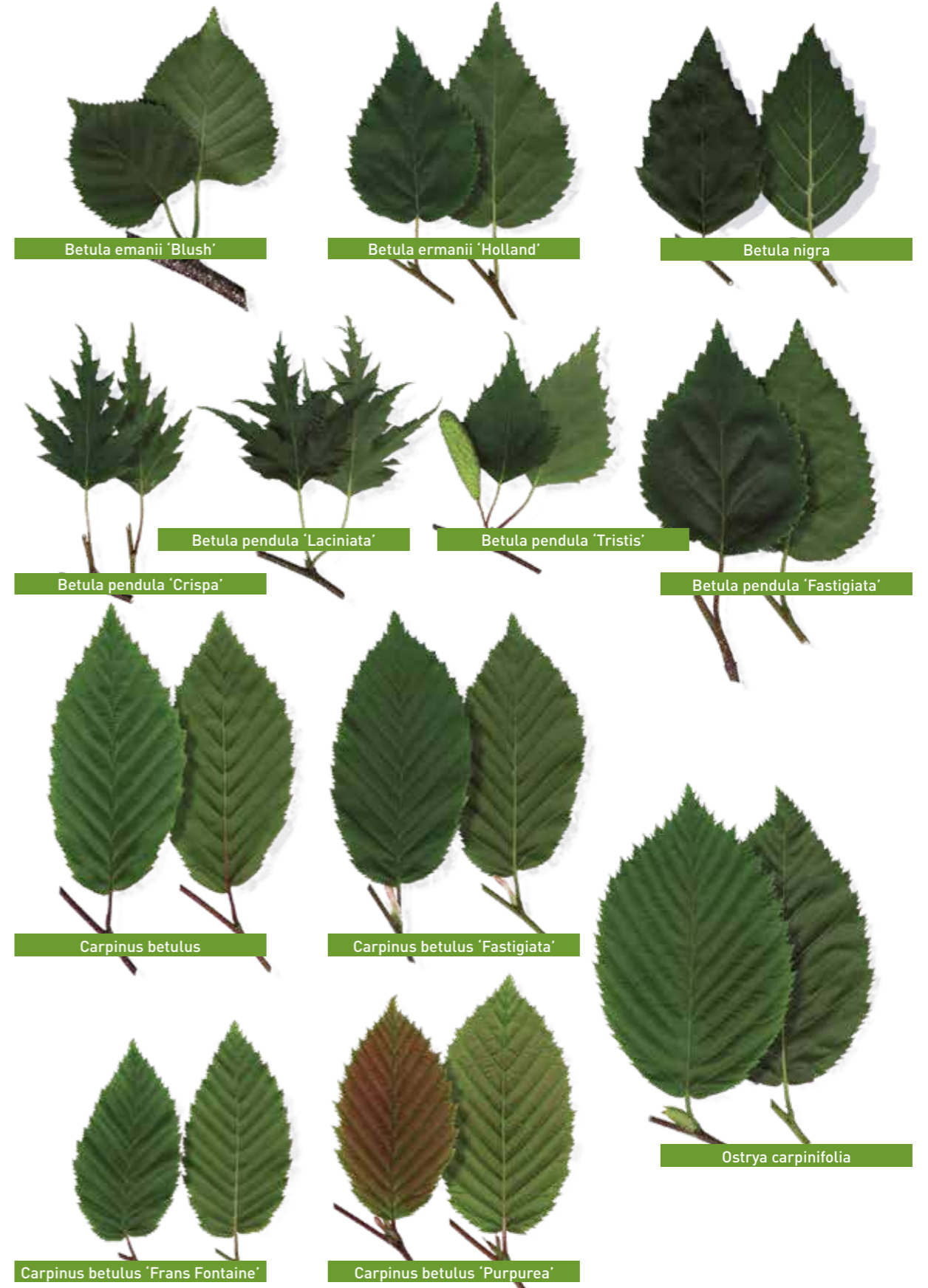
**utilis 'Nepalese Orange'**

(syn. *Betula utilis* 'Himalayan Pink')



Kenneth Ashburner, Stone Lane Gardens, Devon, UK. Selected from seeds originating in Topke Gola, Nepal, 1971. Wide rising crown, 15 m high, 10 m wide. Highly decorative, orange trunk with horizontal bands of lenticels and soft betulin. Pointy, ovate, shiny green leaves, 7 cm in size. Yellow autumn colouring. Male and female catkins just before, or simultaneously with the emerging leaf. Requires a sheltered planting location. Grows on all well-drained soils. Garden and park tree.

## Betula/Carpinus/Ostrya



# Broussonetia

fam. Moraceae

## Broussonetia

A genus that comprises 7 species, originating in East Asia. Named after Pierre Broussonet (1761-1807), a Professor of Botany in Montpellier, France. The bark contains many fibres, which have been used to make high-quality paper in the East since ancient times. The oldest manuscripts discovered, are made from the paper mulberry.



Broussonetia papyrifera

**papyrifera** Paper mulberry  
(syn. Morus papyrifera)



Indigenous to China and Japan. Imported in Europe in 1751. Is mostly cultivated as a large multi-stem shrub that grows to heights of 3 to 5 m in the Netherlands. A nice ornamental element on lawns when cultivated as a small park tree on a short, strong trunk. In that case, it grows to heights up to 6 m. More or less rounded crown with greyish-brown hairy twigs. Attractive, greyish-green, very densely haired leaf with a great variety of shapes. From pointy egg-shaped to irregular, deeply lobed, often with holes in the leaf blade. Ball-shaped, orange-red fruits, 2 cm in size. Edible, but faintly sweet, not tasty. Requires a sheltered, sunny location on fertile calcareous soil.

# Carpinus

fam. Betulaceae

## Hornbeam

A genus that comprises around 41 species across Europe, Asia Minor and East Asia as well as North and Central America. Partly as a forest tree, but primarily as natural undergrowth, a soil improver and accompanying wood in several kinds of deciduous forests. Usually a medium-sized tree, with a generally short trunk. The Common or European hornbeam, *Carpinus betulus*, is also used for avenue planting on open grounds, in forests, woody parks and such. However, some cultivated varieties of *Carpinus betulus* are more often used for avenue and street planting in urban areas. Hornbeams require fertile, airy and well-drained, loamy soils. Its soil requirements resemble those of the Birch. Easily endures a lot of shade.

**betulus** Common hornbeam, European hornbeam



Origin: Europe, Asia Minor. A forest tree by nature. Cultivated as a park and avenue tree since ancient times, height 15 to 20 m. Dense and wide crown of which the lower branches are slightly hanging. Short, robust, greyish-green smooth trunk, which later develops deep, smooth, grooves similar to muscles, hence its common English name Muscledwoods. Beautiful, elegant, loose fruit catkins. Golden yellow autumn colouring. Requires fertile, loamy soil that is not too dry. Primarily used as a park tree in groups, in woody parks and sometimes as an avenue tree on open verges in a natural environment. Also ideal for pleaching.

**betulus 'Beckman'**



Boomkwekerij Beckman, Wetteren, Belgium, 1985. A beautiful upright tree. The branches have a typical curvy implantation on the trunk. Has a doubly serrated leaf and grows on all soils. Leaves are slightly larger than the species. Can be propagated only by grafting. Yellow autumn colouring.

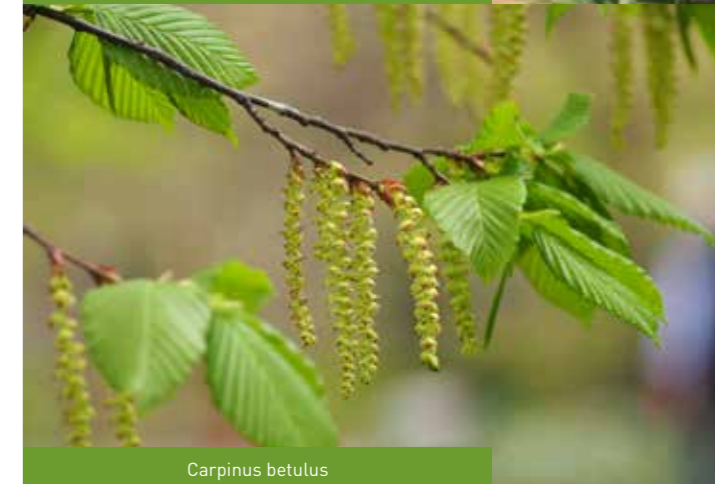
**betulus 'Columnaris'**



Späth'sche Baumschulen, Berlin, Germany, 1885. Street and avenue tree with heights up to 10 m max., usually top grafted. Golden-yellow autumn colouring. Grows extremely slow and develops a densely branched and compact, conical to narrow egg-shaped crown. As a specimen tree, also available bottom worked.



Carpinus betulus



Carpinus betulus

# Carpinus

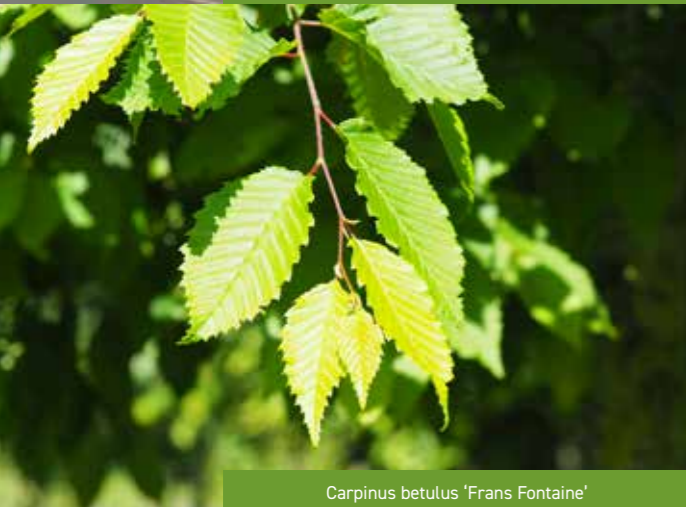
fam. Betulaceae



Carpinus betulus



Carpinus betulus 'Fastigiata'



Carpinus betulus 'Frans Fontaine'

## betulus 'Fastigiata'

(syn. Carpinus betulus 'Pyramidalis')



Germany, 1876. Well-known, wide pyramidal growing tree, with a height up to 16-18 m. Rising and very narrow pyramidal in its juvenile stage, later widening up to 13-15 m. Golden-yellow autumn colouring. Dark, very compact and dull green crown. Most suited as a park tree for specimen planting. As a street and avenue tree it can only be used in wide street profiles, far enough distanced from houses. Very beautiful and characteristic as a park tree with lateral branches from the ground up (i.e. feathered).

## betulus 'Frans Fontaine'



The mother tree was planted in 1962. Similar in shape to 'Columnaris', but only half as wide once established. Height 10 m and only 3 m wide. Leaves have a fresh green colour. Golden-yellow autumn colouring. Valuable street and avenue tree because of its slender pointy growth and the permanently narrow habit. Highly wind resistant.

## betulus 'Lucas'



Houtmeyers bvba, Laakdal, Belgium, 1990. Height 8-10 m and 2.5-3 m wide. Narrow-growing tree with a somewhat larger leaf than the species. Young shoots are red. Flowers with green catkins. The fruits are enclosed in a 3-lobed bract. The withered leaf is retained on the tree for a very long time in winter, the same as with Fagus. Tolerates paved surfaces.

## betulus 'Orange Retz'®



A selection from Jean Blondeau, propagated by Pépinière Minier, Beaufort-en-Anjou, France. Conical to pyramidal growth, 8-10 m high and 5-6 m wide. Buds bronze after which the lime- coloured leaves emerge. In autumn, the foliage turns into a very beautiful orange-red colour. Leaves are retained on the tree for a long time. Sun and partial shade. Grows on all well-drained soils. Hardy.

## betulus 'Pendula'



Massé, France, 1850. A slow-growing weeping variety. Height approx. 5 m. Twigs at first hanging straight down, later slightly spreading, growing in overhanging arches. Beautiful specimen tree.

## betulus 'Purpurea'



Germany, 1864. Species-specific in appearance, but with a slower growth. Height up to 15 m. Buds crimson, later the leaves turn deep green. The leaf is slightly larger than the species. Can be used as a street and avenue tree under perfect conditions in appropriate soils. Beautiful orange autumn colouring.

# Carpinus

fam. Betulaceae

## betulus 'Quercifolia' Oak leaf hornbeam



Christian Friedrich Ludwig (1757-1823), Leipzig, Germany, 1783. Growth and habit species-specific, but rarely grows higher than 10-12 m. A very dense crown. The narrower leaves are more or less deeply indented. The irregular lobes are more rounded, often indented down to the vein. Leaf often returns to its original shape. Beautiful park tree. Can also be planted as an avenue tree on wider green verges. Grows rather wide so it requires sufficient space.

## betulus 'Rockhampton Red'



Mount Pleasant Tree Nursery, Rockhampton, Gloucestershire, UK, 1995. Habitus and use as the species. This tree has a spectacular autumn colour with shades of bright red combined with orange, that lasts from end September until early October. Its leaves turn brown and are retained on the tree in a dried state for a long time. Very healthy and grows on all soil types.

## betulus 'Streetwise'



Hillier Nurseries, Ampfield, Romsey, UK, 1980; introduced in 1998. Resembles Carpinus betulus 'Frans Fontaine' in growth habit. Shoots yellowish-green, after which the foliage turns bronze and then green. Orange-yellow autumn colouring. Leaves have a strong venation and an undulate leaf margin with a wavy edge. Application similar to 'Frans Fontaine'.

## caroliniana 'Dries Sentinel'



Dirk Benoit, Boomkwekerij Pavia, Deerlijk, Belgium, 2007. Ovate, rising and dense crown, 6-8 m high. Green leaves with a doubly serrated leaf margin, emerging red. Spectacular orange and red autumn colouring. In April, green flowers followed by brown fruits. that change colour in autumn. Grows on all soils. Good wind resistance. Moderately tolerant to road salt. For parks and gardens and street and avenue planting.

## caroliniana 'Red Fall'



Shrub or tree. Forms a small, narrow, pyramidal crown. Height 6-8 m, width 5-6 m. Alternate, simple, green leaves with a doubly serrated leaf margin. Colours from orange to a purplish-red in autumn. Hardy. Prefers nutritious, humus-rich, well-drained soil. Very suitable for small gardens and as a street and avenue tree.

## japonica Japanese hornbeam



Origin: Japan. Imported in Europe in 1879. Park tree with a height up to 15 m, shape slightly resembles Carpinus betulus. However, this variety has a light greyish-brown bark that peels off. Leaves long and narrow, reddish when emerging. Golden-yellow autumn colouring. Short and sturdy fruit bunches (5-6 cm), slightly similar to large hops. Attractive and very hardy park tree.



Carpinus betulus 'Quercifolia'



Carpinus betulus 'Rockhampton Red'

# Carpinus

fam. Betulaceae



Carpinus japonica



Carpinus japonica

## japonica 'Chinese Lantern'



Alphons van der Bom, Oudenbosch, the Netherlands, 2005. Wide, ovoid crown, height 6-8 m. Green, narrow, lancet-shaped leaves with a toothed leaf margin. Golden-yellow autumn colour. Already in the juvenile stage, large yellow-green ornamental fruits resembling paper lanterns. Grows on all well-drained soils, but does not tolerate pavement. Sun and partial shade. Good wind resistance.

## orientalis Oriental hornbeam



Origin: Balkan to Caucasus. Imported in Europe in 1739. Height approximately 5 m, slender and elegantly branched. This Oriental hornbeam is slightly thickset. Usually a shrub. Distinguishable from Carpinus betulus by its 3-5 cm long leaves. Hardly cultivated.

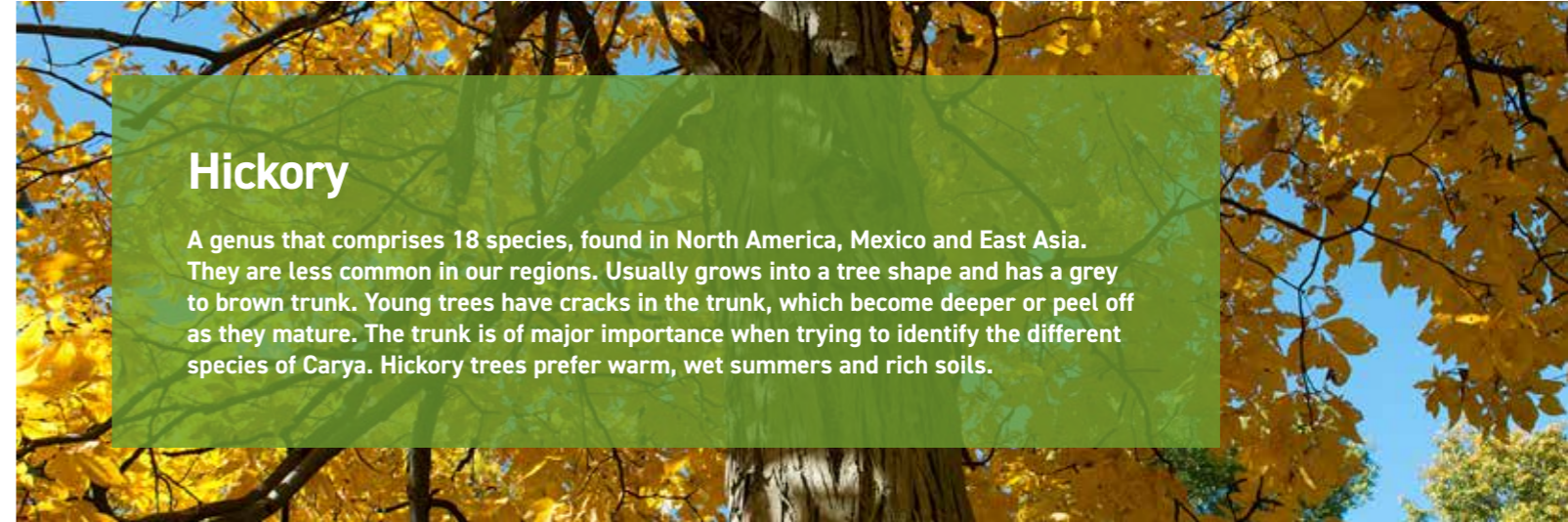
## turczaninowii Korean hornbeam



Originates from Korea, Japan and Northern China. Sometimes confused with the Korean hornbeam, Carpinus coreana. It owes its name to the Russian botanist Nicolai Turczaninow (1796-1863) who discovered this species. Grows to a height of 15 m and is very strong. Small, narrow, doubly serrated leaf. Normal amount of catkins that appear together with the emerging leaf. Dark grey trunk. Hardly affected by leaf or fruit fall. Yellow-brown autumn colouring. Often used as a bonsai form. Has very hard wood that is often used in tools and furniture.

# Carya

fam. Juglandaceae



## Hickory

A genus that comprises 18 species, found in North America, Mexico and East Asia. They are less common in our regions. Usually grows into a tree shape and has a grey to brown trunk. Young trees have cracks in the trunk, which become deeper or peel off as they mature. The trunk is of major importance when trying to identify the different species of Carya. Hickory trees prefer warm, wet summers and rich soils.

## cordiformis Bitternut, Bitternut hickory, Swamp hickory



Naturally occurring in the southwest USA. Imported in Europe in 1787. Tall tree up to 35 m, with an irregular, open crown. 20-30 cm large compound leaves. Yellow autumn colour. Flowers with inconspicuous catkins. The bitter nuts are 2-3 cm in size, enveloped by a green-brown husk and have a heart shape (in Latin: cordiformis). The bark is grey and deeply grooved once established. Grows naturally in valleys and on river banks, but can grow on dry soils as well. Sun and partial shade. The wood is suitable for furniture, lumber and ladders. Often also for smoking meat. Native Americans primarily used the wood to make bows.



Carya cordiformis

## illinoensis Hickory pecan



Very tall tree, can reach heights of more than 50 m in America. In our region 20-25 m. Wide ovate growth. Light grey or white trunk. Small flowers. Yellowish-green leaf, yellowish-brown in autumn. The Hickory pecan is used for nut production in America.

## ovata White shagbark hickory



USA, imported in Europe in 1629. The White shagbark hickory develops a wide pyramidal crown with slightly hanging side branches. Height 20-25 m. Has sweet tasting fruits that were part of the basic food of the Native Americans. Nowadays, the nuts are used to flavour bread and cakes. Once established, the greyish-green bark peels off in thin vertical flakes. Primarily used as an attractive and striking park tree. Hardly cultivated.



Carya ovata

# Castanea

fam. Fagaceae

## Chestnut

A genus that comprises 8 species. Originating from North America, East and Central Europe and East Asia. Castanea is derived from the Greek word: *Kastanéia*, a city in Pontus, a region on the coast of the Black Sea where this genus was widely cultivated. The chestnut was naturalised in large parts of Europe, first by the Celts and then by the Romans who planted them en masse to feed their legions. At that time, they were planted in the south of France as a monoculture mainly to make chestnut puree and chestnut bread. As a result, some cultivars have come on the market, such as Ville de Lyon. Because the wood has a high tannic acid content, it is often used to make fences.



Castanea sativa



Castanea sativa 'Albomarginata'

**sativa** Sweet chestnut, Spanish chestnut



Origin: Southeast Europe. Rising tree with a very wide crown, with a height up to 30 m. Short, heavy trunk that often swirls around its own axis as a result of which the bark grooves also revolve around the trunk. Shiny bright green, long leaf, 10-20 cm. Flowers in June with large bunches of upright cream-white catkins. Fruits are edible. Prickly husk with 2-3 sweet chestnuts. Requires open, airy, fertile soil that is not too moist, but still has good permeability. Endures shade but flowers better in sunny warm locations. Beautiful park tree.

**sativa 'Albomarginata'**

(syn. *Castanea sativa* 'Argenteovariegata')



France, 1755. Ornamental park tree with regular silver-white, sometimes entirely white leaf edge that is clearly serrated. Height 20 m. The spines of the fruit husk are also often white. Growth species-specific. Attractive specimen tree for parks on a sunny location.

**sativa 'Anny's Summer Red'**



A.F. van Nijnatten & Zn, Zundert, the Netherlands. Round, half-open crown, height 7-8 m. Serrated leaves, 15-25 cm, emerge purplish-red and then turn dark green. Inconspicuous flowers. Prickly husk with 2-3 edible chestnuts. Humus-rich, well-drained, loose soils. Does not tolerate wet soils or pavement. Garden and park tree.

# Castanea

fam. Fagaceae

**sativa 'Aspleniifolia'**



France, 1814. Leaf shape highly variable, from regular to deeply indented and sometimes even linear. Height 15-20 m. Often changes back / adapts the species' characteristics. Beautiful park tree for specimen use. Hardly cultivated.

**sativa 'Glabra'**



UK, 1836. An old cultivar of the species with larger stiffer leaves, very shiny dark green. Flowers already in its juvenile stage. Height up to 30 m. Park tree.

**sativa 'Pyramidalis'**



Rising tree with conical crown, 20-30 m high, that remains narrower than the species. Flowers in May with greenish cream-coloured catkins. Fruits 5-6 cm wide, holding 2 to 3 chestnuts. Beautiful park tree.

**sativa 'Variegata'**



France, 1755. Ornamental park tree with yellow multi-coloured leaves. Species-specific growth. Height 20 m.



Castanea sativa



Castanea sativa



# Catalpa

fam. Bignoniaceae

## Indian bean tree

A genus that comprises 11 species. The botanical name *Catalpa* is derived from the (Indian) Muscogee name *Kutuhlpa* (winged head). The English botanist Mark Catesby (1683-1749) discovered the tree in the USA and mentioned *Catalpa* for the first time. Carl Linnaeus (1707-1778) determined the name *Bignonia catalpa* in 1753. *Catalpa* was imported in the UK in 1726 and afterwards distributed by Royal families and rich merchants throughout Europe. The 11 *Catalpa* species are classified within 2 well-defined sections: *Catalpa* and *Macrocatappa*. The section *Catalpa* contains 6 species of deciduous trees with a disjunctive distribution between East Asia (4 species), and eastern North America (2 species). The 2 North American species, *Catalpa bignonioides* and *Catalpa speciosa* are frequently cultivated and widely naturalized in urban areas of eastern USA and Europe. The 4 species occurring in eastern Asia have currently been recognized. They are: *Catalpa bungei*, *Catalpa fargesii*, *Catalpa ovata* and *Catalpa tibetica*, the latter is not being cultivated. The North American species are well known, the Asian species and West Indian species from the section *Macrocatappa*, are not. *Catalpa* is closely related to *Chilopsis* and buds very late in spring.



*Catalpa bignonioides*



*Catalpa bignonioides*

### *bignonioides*



Origin: South-Eastern part of North America. Imported in Europe in 1726. Medium-sized tree, 10-15 m high, with short trunk that forks towards the top. Wide spreading, dome-like crown. Very large leaf, 15-20 cm long, sometimes with a few angular lobes. In June-July, orchid-like trumpet flowers in 15-20 cm high flower bunches, white with purple spots and yellow ochre stripes in the floral tube. Long, big, hanging husked fruits of 30-35 cm, that look like pods, purplish-brown when mature. Park tree for fertile soil that is not too wet and in a warm location. As a rule, paved locations are endured only with difficulty. The large leaves and rather brittle branches are susceptible to summer storms.

### *bignonioides* 'Aurea'



USA, 1877. Smaller variety of the species, 6-8 m high. Buds golden yellow, later yellowish-green. Very large leaf, 15-20 cm long, sometimes with a few angular lobes. In June-July, orchid-like trumpet flowers in 15-20 cm high flower bunches, white with purple dots and yellow-ochre stripes in the floral tube. Long, big, hanging husked fruits of 30-35 cm that look like pods, purplish-brown when mature. Park tree.

# Catalpa

fam. Bignoniaceae

### *bignonioides* 'Nana'

(syn. *Catalpa bungei*)



Pépinière Masson, France, 1850. The tree cultivated in the Netherlands as *Catalpa bungei* is in fact *Catalpa bignonioides* 'Nana'. The real *Catalpa bungei* from Northern China is not cultivated. Usually a densely branched, rather round shrub, 3 m high. When top grafted, this variety develops into a small-crowned tree shape, approx. 5 m high, with a round, dense crown with smaller, dark green and slightly shiny leaves. Rarely flowers, if ever. Park tree, but also for avenues on green verges.

### x *erubescens*

(*Catalpa bignonioides* x *Catalpa ovata*)



Abel Carrière (1816-1896), Jardin des Plantes, Paris, France, 1866. Grows into a high shrub shape with a heavy trunk. Usually cultivated as a big tree on a short robust trunk with an open crown and heavy upward spreading, main branches. Height 10-15 m. Firm olive-green twigs. Large leaves, slightly 3-lobed to unlobed. Flowers in July-August, with 20-30 cm long, upright panicles. Flowers are yellowish-white with a light yellow inside with many auburn spots and stripes.

### x *erubescens* 'Purpurea'

(*Catalpa bignonioides* x *Catalpa ovata*)



Meehan Nurseries, Philadelphia, USA, 1886. Habit species-specific. Height 10-15 m. Leaf emerges very dark purple to almost blackish-purple and gradually turns green. Beautiful park tree.

### *ovata*



Origin: China. Imported in Europe in 1849. Small tree with a height up to 10 m with a spreading crown. Very big, heart-shaped to egg-shaped leaf, 10-25 cm long. Pointy ends, usually 3-5-lobed. The top of the leaf is deep green, the underside is brighter green and has hairy veins. Orchid-like trumpet flowers in 10-25 cm long candles. Flowers white on the outside, with a cream-coloured inside with yellow and purple spots and stripes. 20-30 cm long fruits.

### *ovata* 'Slender Silhouette'



Piet de Jong, Botanic Garden Mainz, Germany. Small tree with a height up to 10 m with a narrow pyramidal crown and straight trunk. Inflorescence and foliage are species-specific. Hardly cultivated.

### *speciosa*



Origin: Central and North America. Imported in Europe in 1800. The crown is more upright than *Catalpa bignonioides*, height up to 15 m. Crown loosely pyramidal. Pointier leaf without lobes, heart-shaped. Flowers like *Catalpa bignonioides*, slightly earlier, but only with light yellow spots and stripes in the floral tube. Attractive park tree, also a beautiful tree on squares if the pavement is not too dense. Can also be planted as an avenue tree in sheltered, sunny locations on wider green verges and banks.



*Catalpa bignonioides* 'Aurea'



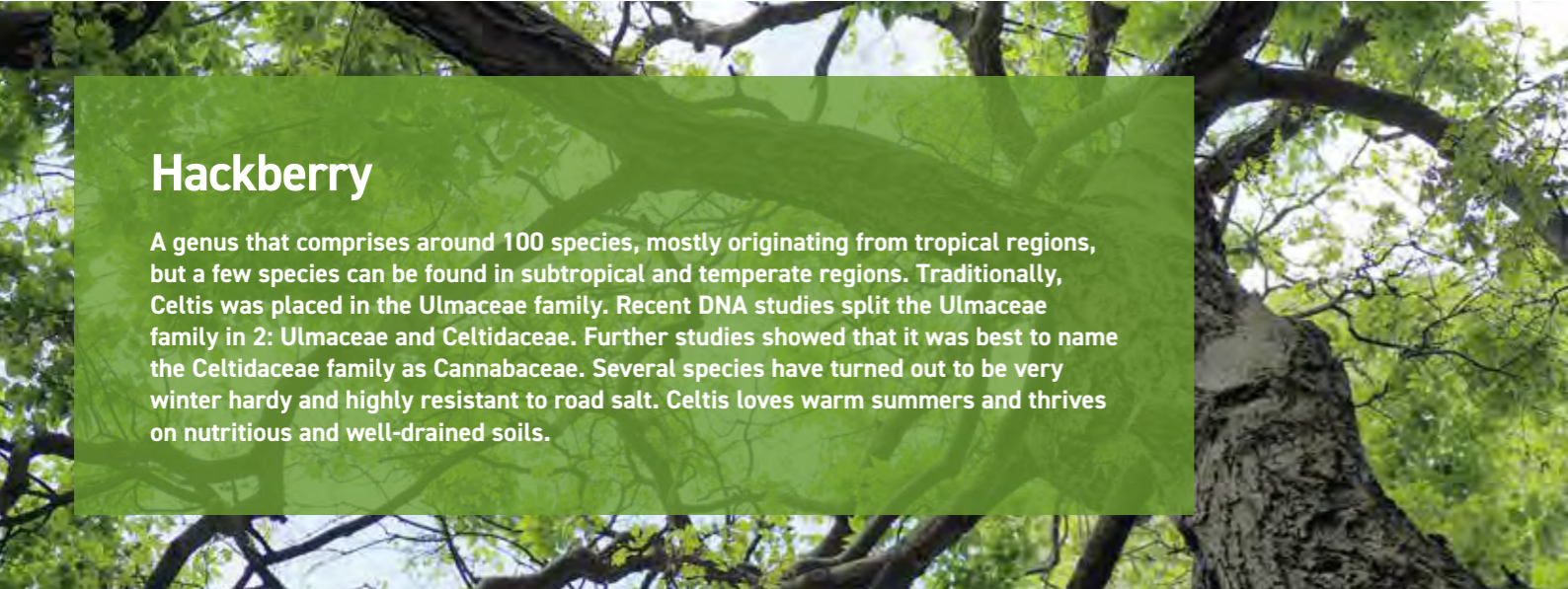
*Catalpa* x *erubescens* 'Purpurea'



*Catalpa speciosa*

## Hackberry

A genus that comprises around 100 species, mostly originating from tropical regions, but a few species can be found in subtropical and temperate regions. Traditionally, Celtis was placed in the Ulmaceae family. Recent DNA studies split the Ulmaceae family in 2: Ulmaceae and Celtidaceae. Further studies showed that it was best to name the Celtidaceae family as Cannabaceae. Several species have turned out to be very winter hardy and highly resistant to road salt. Celtis loves warm summers and thrives on nutritious and well-drained soils.



Celtis australis



Celtis julianae

**australis** Eastern hackberry, European hackberry



Indigenous to Southern Europe and North Africa. Imported in Europe in 1596. A 10-15 m high tree with a smooth trunk and wide crown. Young twigs are hairy. Leaves oblong egg-round to elliptical, 5-15 cm long, with a rather long leaf top. Strongly serrated leaf margin, coarse on top, soft hairs on the underside. Dark red almost black-red, round fruits. Attractive park and avenue tree on airy, fertile and heavy sandy soils. Endures drought relatively well and is not very susceptible to urban air pollution.

**julianae** Julian hackberry



Originating from central China and forms a vase-shaped, semi-open crown up to 25-30 m high, fast-growing. Reversed, ovoid leaves 8-13 cm long and 8 cm wide with a pointed top. Dark green on top, yellow-green on the underside, with a very rough surface. Turns yellow in autumn. Inconspicuous green flowers in April-May. Orange to purplish-red drupes 1-1.5 cm with a sweet skin. Grows on all soils. Drought and heat resistant. Prefers a warm planting location.

**laevigata** Sugarberry, Sugar hackberry, Southern hackberry



Naturally occurring in the southwest USA. Forming a wide, open crown with somewhat hanging branches up to a height of 30 m. Dark green foliage with few or no serrations, oval-elliptical at one point, not opposite, 5-10 cm long, dull yellow-green on the underside, and very thin. Pure yellow autumn colouring. Flowers yellow-green in clusters in April-May. Orange-brown fruits ripen to black, 8 mm with a grooved seed inside. The young trunk is smooth and uneven and when maturing wart-like nodules start to form. Grows on all soils. Highly drought and heat resistant.

**occidentalis** Western hackberry, Common hackberry



Origin: Central and Eastern North America. Imported in Europe in 1656. Tree with a wide, irregular crown, 10-15 m high. The bark on older trees is greyish-brown, with characteristic lengthwise winding corky fissures and wart-like protrusions. Long, thin twigs, initially hairy. Thin, egg-round leaf, of which only the upper half is serrated, the lower half has a straight margin. Green, unisexual flowers in May. Pea-green, round fruits, later turning brown. Park tree, but certainly also an attractive avenue and street tree in wider street and avenue profiles. The low crown does require space, as well as timely pruning to ensure a higher stem height. In Central and Southern European cities, often a valuable avenue tree.

**x occidentalis 'Magnifica'**

(Celtis occidentalis x Celtis laevigata)



An American hybrid. Grows faster than its parents and is more resistant to insect damage. Has larger, shiny dark green leaves. Is also resistant to drought, endures road salt well and can be planted in urban surroundings. The habitus of established trees somewhat resembles the habitus of elm trees. Park, avenue and street tree.

**sinensis** Chinese hackberry



Originally from East Asia. Height up to 15 m. Wide, spreading, open crown, branches slightly sagging towards the ends. The leaves are distinctively larger than other species. Wide oval, to almost egg-round foliage, dark green on top and paler on the underside. Yellow autumn colouring. Green-yellow flowers in clusters. Dark yellow fruits, black when ripe, with a grooved stone fruit inside. Grows on all soils. Drought and heat resistant.



Celtis occidentalis



Celtis occidentalis



Celtis sinensis

# Cercidiphyllum

fam. Cercidiphyllaceae

## Katsura tree

A genus that comprises only 2 species: *Cercidiphyllum japonicum* and *Cercidiphyllum magnificum*. The generic name is derived from the Greek word: *phylon*, the leaf and the Latin word *Cercis*, Judas tree, referring to the close resemblance in leaves. They are however distinguishable: *Cercidiphyllum* has opposite leaves, instead of alternate leaves like *Cercis*. Katsura is the name for a region and a river in Japan. Philipp Franz von Siebold (1796-1866) introduced the species *Cercidiphyllum japonicum* in Leiden, the Netherlands, in 1859. Often a multi-stem or specimen tree. Its wood is very wanted in Japan for the manufacturing of furniture and panelling. *Cercidiphyllum* has a nice leaf shape and highly attractive autumn colouring. It prefers a sunny location on moist but well-drained, humus-rich soils.

### **japonicum** Katsura tree



Origin: Japan. In Asia, the Katsura tree grows up to 30 m high. In Europe, this species is usually cultivated as a multi-stem shrub up to 10 m, but increasingly as a standard clear stem tree. As an avenue tree, it will reach a maximum height of 10-12 m. Round to oval crown with many obliquely growing main branches with arching, slightly hanging side branches and bare red-brown twigs. Its habitus can vary due to the genetic variation that always exists in seedlings. The leaves emerge bronze-red and later turn dull green with a blue-green underside. The coral-red petioles are very striking. Emerging leaves are sensitive to late night frost but recover well. A special feature of the *Cercidiphyllum japonicum* is that it gives off a subtle sweet (baking) scent when the leaves emerge and when the leaves fall. In autumn, the foliage turns yellow to orange-red and contrasts beautifully with the pointy, crimson buds. Small and inconspicuous flowers. This species is quite wind resistant and not susceptible to most significant pests and diseases. The root system consists of a taproot with a large number of flat, fine roots. Perfect as an avenue and park tree and requires a nutrient-rich and not too dry, humus (sandy) soil. The autumn colour, the heart-shaped leaves and the grooved bark form the most important ornamental value of the Katsura tree.

### **japonicum 'Pendulum'**



Origin: Japan. Imported in Europe in 1970. A top grafted weeping variety with long, gracefully cascading branches. Its leaves are not smooth, but somewhat rougher. Orange-yellow autumn colours. Same soil requirements as the species. Beautiful park tree.

Cercidiphyllum japonicum

# Cercidiphyllum

fam. Cercidiphyllaceae

### **japonicum 'Rotfuchs'**

(syn. *Cercidiphyllum japonicum* 'Red Fox')



Karl Fuchs, Neunkirchen, Germany, 1977. This variety did not become available on the market until 1990. Tree with a height of 8-10 m with a steeply rising, columnar growth. Leaves are smaller than the species and the crowns is less dense. In summer, the green chlorophyll pigment increases, and the foliage turns more bronze in colour.

### **magnificum** Magnificent katsura tree

(syn. *Cercidiphyllum japonicum* var. *magnificum*)



France, 1900. Small tree, with a height of 10-12 m, with the same habitus as *Cercidiphyllum japonicum*. Only the leaf is slightly different, it is a bit bigger (round to heart-shaped) and tougher.

Cercidiphyllum japonicum

Cercidiphyllum japonicum

Cercidiphyllum japonicum

# Cercis

fam. Fabaceae

## Redbud, Judas tree

A relatively small genus that comprises 10 species, spread over the Northern Hemisphere. Together with Gleditsia and Gymnocladus, Cercis is part of the subfamily Caesalpinoideae because of their different flower structure (they do not grow root nodules). The name Cercis is derived from the Greek word: *kerkis*, a weaving shuttle loom, which according to Theophrastus (371-287 BC), resembles the legumes of Cercis. Redbuds have simple leaves that are heart- or kidney-shaped. Cercis flowers on older branches and the flowers appear on bare branches before the leaves emerge. Dried legumes may be retained on the tree for months. Cercis requires nutritious, loose, calcareous soil. It develops very long taproots and is more difficult to transplant. Resembles Cercidiphyllum, but has alternate leaves, instead of opposite leaves.



Cercis canadensis

### canadensis Eastern redbud



Origin: Eastern part of North America. Imported in Europe in 1641. Often a large multi-stem shrub. Can also develop into a small tree shape with a short trunk, 8-10 m high, with a very wide, almost round crown. Leaves similar to Cercis siliquastrum, shiny dark green. Flowers in May-June with light pink, butterfly-shaped flowers in bunches. Brown legumes, 6-8 cm long. Beautiful park tree for sunny and sheltered locations.

### canadensis 'Appalachian Red'



Max Byrkit, Maryland, USA, 1990. Discovered by coincidence on an abandoned roadside along a highway in Maryland. The leaves are heart-shaped and dark blue-green in colour, yellow colouring in autumn. Growth and requirements same as the species.

### canadensis 'Forest Pansy'



National Arboretum Washington, USA, 1965. The first cultivated variety of the canadensis species. Shrub or small tree, with large, heart-shaped, deep purple-red, shiny leaves. Height 7-9 m. Requires well-drained, moist soil. Habit species-specific.

# Cercis

fam. Fabaceae

### canadensis 'Hearts of Gold'



Jon Roethling, Hidden Hollow Nursery, Belvedere, Tennessee, USA, 2007. Small shrub or tree, widely spreading. Blooms with pea-shaped, lavender-purple coloured flowers in clusters. Unlike most other cultivars that flower on older branches, this variety flowers on one-year-old branches. Emerges orange-red, then turns pure yellow. When planted in full sun, the foliage turns greener. Not susceptible to leaf scorch. Apple- to heart-shaped leaf. When planted in a dark / shady location, this cultivar 'lights up' its surroundings.

### canadensis 'Red Force'®



Selection from Pépinière Minier, Beaufort-en-Anjou, France, 2017. Rising shrub or small tree, 3-4 m high and 2-3 m wide. Pink flowers in clusters in April-May before the leaves emerge. Beautiful violet-red, heart-shaped foliage. Prefers a sunny planting location. Grows on all well-drained soils and is very hardy.

### canadensis 'Tennessee Pink'



Hidden Hollow Nursery, Tennessee, USA, 2002. Typically matures as a single trunk tree. Bright pink flowers in clusters in April-May, blooms 2-3 weeks, before the leaf emerges. Fruits mature early in autumn. Wide, ovate-cordate, dark green leaves that turn yellow in fall. Bark peels off when aging. Growth and soil requirements as the species. Beautiful tree for smaller gardens.

### chinensis 'Avondale'



Duncan & Davis, Auckland, New Zealand, 1975. Small shrub or tree, 5-6 m. Green, heart-shaped leaves with a transparent leaf edge. Buds reddish, later lighter with a shiny top. Red petiole. In April, pink flowers appear simultaneously with the foliage. Grows on all soil types. Good resistance to drought. Use in (public) gardens and parks.

### siliquastrum Judas tree



Origin: Western Asia, Southern Europe. Although it is mostly cultivated as a small shrub here, it is sometimes also cultivated as a tree on a short standard. Height 6-10 m. Capricious crown with wide spreading branches, highly branched with bare, auburn twigs. Rather large, heart-shaped leaves, slightly wider (7-12 cm) than they are long. The top is shiny dark green, the underside light-blue green. Flowers at the end of April on bare, older branches with dark pink to violet-pink flowers. Later brown pods, 5-10 cm long. According to tradition, the Judas tree owes its name to the idea that Judas Iscariot hanged himself from this tree. Attractive park tree in sheltered, sunny locations. Can also be planted in larger gardens.



Cercis canadensis 'Hearts of Gold'



Cercis siliquastrum



Cercis siliquastrum

# x Chitalpa

fam. Bignoniaceae

## Chitalpa

An intergeneric hybrid genus. Originating from crossings of *Chilopsis linearis* and *Catalpa bignonioides*. The first crossings were developed by Nikolai Fyodorovich Rusanov (1895-1979) in the Botanical Garden of Tashkent in Uzbekistan in 1964. Hence the epithet *tashkentensis*. Recent research has shown that the female *Chilopsis linearis* (desert willow), crossed with the male *Catalpa bignonioides*, is responsible for this hybrid. There are already a few cultivars on the market.



Chitalpa tashkentensis



Chitalpa tashkentensis

### tashkentensis



Oval-shaped growth with an open structure and a height up to 10 m. Long, green, lancet-shaped leaves. The large flowers attract many bees and butterflies. Blooms abundantly from May-June with orchid-like pale pink flowers in large umbels until the first frost. Requires a sunny location.

### tashkentensis 'Pink Dawn'

(*Chilopsis linearis* x *Catalpa* x *galleana*)



Small shrub or tree. Light pink flowers, throat pale yellow streaked with deep magenta. Bigger flowers than the species. When top grafted, suitable as a street tree.

# Cladrastis

fam. Fabaceae

## Yellowwood

A genus that comprises only 7 species. 6 of them are originally found in East Asia, the 7th species is native to the southeast of North America. *Cladrastis* is closely related to *Maackia* and *Styphnolobium*. The name *Cladrastis* is derived from the Greek words: *klados*, branch and *thraustos*, fragile, in reference to the fragile branches.

### kentukea Kentucky yellowwood (syn. *Cladrastis lutea*)

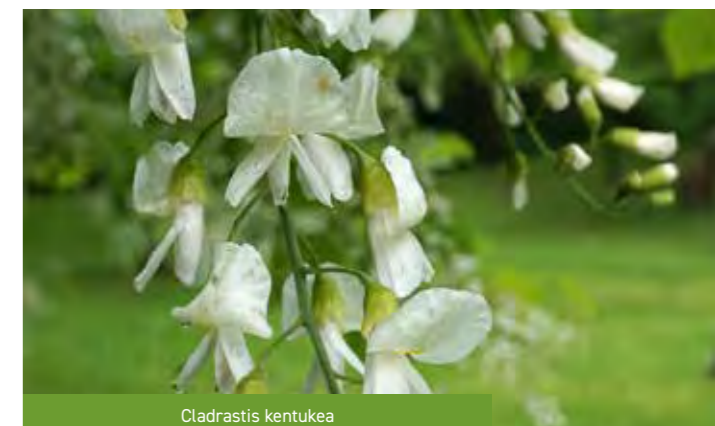


Indigenous to the eastern part of North America. Imported in Europe in 1812. A big tree on a short robust trunk, with smooth greenish-grey bark. Height up to 8-10 m with a wide, almost round crown. Rather large, pinnate leaves, deep green with bright yellow autumn colours. Blooms in May-June with white, papilionaceous flowers in long (20-30 cm), terminal, delicate and suspending, panicles (resembling those of *Robinia*). Fragrant flowers. Pods up to 8 cm long. Beautiful park tree in sunny and sheltered locations.

### kentukea 'Perkins Pink'



Perkins Institute for the Blind, Watertown, Massachusetts, USA, 1930. Cultivar with yellow-green emerging leaves that later turn bright green. Blooms with pink flowers in long panicles. Yellow autumn colouring. Deeply rooting. Seedlings are true-to-type with pink flowers. Growth is species-specific.



Cladrastis kentukea



Cladrastis kentukea

# Clerodendrum

fam. Verbenaceae

## Glorybower, Bagflower, Bleeding-heart

A genus that comprises around 150 species and was named by Linnaeus in 1753. The generic name is derived from the Greek words: *kleros*, happiness/destiny and *dendron*, tree, and refers to the varying success with regard to the medicinal use of Clerodendrum. Occurring in tree or shrub shape. Clerodendrum has several special characteristics: ornamental buds, foliage smelling of peanut, decorative flowers that attract many bees and purplish-blue berries. Requires a spot in sun or partial shade on well-drained, humus-rich soils.



Clerodendrum trichotomum



Clerodendrum trichotomum 'Purple Blaze'

**trichotomum** Peanut butter tree, Harlequin glorybower



Origin: East-China, Japan. Imported in Europe in 1843. Small tree with a height of up to 8 m, in the Netherlands usually developing shrub-like, rather dense and rising up to 4 m. Large, egg-shaped leaf. Blooms in August-September with small, white flowers with a striking red-coloured calyx in terminal inflorescences with widths up to 20 cm. The pea-sized, round, deep blue fruits in the red calyx are also beautiful. Park tree and garden tree. Twig tops susceptible to frost, but they regenerate when the young shoots bud from underneath the frozen parts.

**trichotomum 'Purple Blaze'**



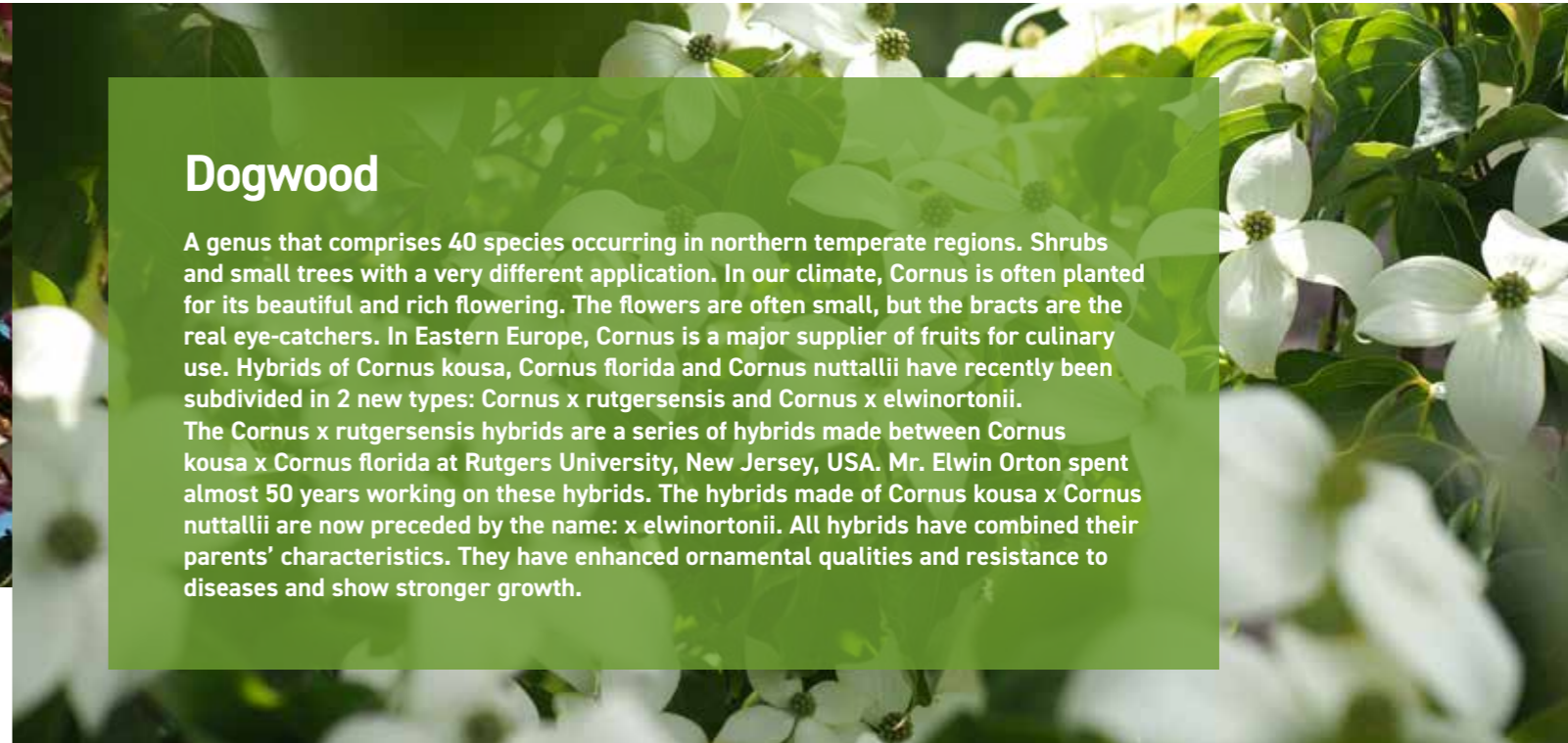
Growth is species-specific. This cultivar buds red and flowers very late, i.e. August to early September. Also displays better hardiness than the species. Very good host plant for bees and butterflies.

# Cornus

fam. Cornaceae

## Dogwood

A genus that comprises 40 species occurring in northern temperate regions. Shrubs and small trees with a very different application. In our climate, Cornus is often planted for its beautiful and rich flowering. The flowers are often small, but the bracts are the real eye-catchers. In Eastern Europe, Cornus is a major supplier of fruits for culinary use. Hybrids of *Cornus kousa*, *Cornus florida* and *Cornus nuttallii* have recently been subdivided in 2 new types: *Cornus x rutgersensis* and *Cornus x elwinortonii*. The *Cornus x rutgersensis* hybrids are a series of hybrids made between *Cornus kousa* x *Cornus florida* at Rutgers University, New Jersey, USA. Mr. Elwin Orton spent almost 50 years working on these hybrids. The hybrids made of *Cornus kousa* x *Cornus nuttallii* are now preceded by the name: *x elwinortonii*. All hybrids have combined their parents' characteristics. They have enhanced ornamental qualities and resistance to diseases and show stronger growth.



**alternifolia**



Origin: Eastern part of North America. Usually a high, wide and upward growing shrub, but is often cultivated as a short-trunk tree. In that case, it can get 6-8 m high with a wide, somewhat capricious crown with spreading branches and a habit that resembles *Cornus controversa*. Twigs shiny red-brown. Rather long-stalked, egg-shaped leaf, 5-10 cm long, often amassed at the twig ends. Shiny, dark green foliage with blue-green underside. Blooms in May-June, with upright flat bunches, 5-7 cm wide, with numerous small, yellowish-white flowers. Egg-round, bluish black fruits, 6-8 mm with auburn fruit stems. Like *Cornus controversa*, it is a beautiful park shrub or tree, particularly in amply planted specimen groups in sunny locations. Soil requirements similar to those of *Cornus controversa*.

**controversa** Wedding cake tree



Originally from Japan and Korea. Imported in Europe in 1880. High, upright short-trunk shrub or wide spreading tree with a height of 9-15 m. Horizontally spreading, later in the top of the crown slightly overhanging branches and greyish-brown and shiny twigs. Large leaf, 8-16 cm, shiny dark green on top, attractive blue-green on the underside. Blooms at the end of June with numerous, white to cream-white, flat flower umbels of up to 10 cm. Round, bluish-black fruits, 6 mm. Very ornamental specimen tree or shrub for parks and public gardens on fertile (sandy) soil in warm and sunny locations. Requires a lot of space.



Cornus controversa

# Cornus

fam. Cornaceae



Cornus florida 'Cherokee Chief'



Cornus kousa

## controversa 'Pagoda'



Koninklijke Boomkwekerijen Alphons van der Bom BV, Oudenbosch, the Netherlands, 1980. Has a striking, horizontal layered branched crown and the same characteristics as the species.

## x elwinortonii 'Venus'®



Elwin Orton, Rutgers University, New Brunswick, New Jersey, USA, 1983. 'Venus' has something extra-terrestrial: it has the largest bracts of the entire Cornus genus. Blooms very long with pure, white flowers. Strong grower, turns into a large shrub reasonably fast. Height up to 8-9 m. Very healthy. Green foliage that colours into a mix of red, orange and yellow in autumn. Good resistance to heat, cold and drought. Plant in full sun, not on calcareous soils.

## florida Flowering dogwood



American species that grows into a wide shrub shape with a height up to 5 m. The branches may sag as they mature. Flower umbels appear in May with 4 large, white or light pink bracts that are pointed. Dark green, oval to egg-shaped leaves with a light grey underside. Turns scarlet-red in autumn. Suitable for partial shade. Grows on dry and normal soils. Wind sensitive.

## florida 'Cherokee Chief'

(syn. *Cornus florida* 'Super Red')



Isaac Joseph Hawkersmith (1887-1963), Winchester, Tennessee, USA, 1958. Initially, growing fairly upright, later more wide and open. Height 5-6 m. Blooms more intensely as it matures. Profuse flowering in April-May with small yellow-green fertile flowers enveloped by large, pink-red bracts. Slightly fragrant. Later, 2-4 cm large, raspberry-like fruits appear which turn from green to dark pink. The fruits have a thick skin. Inside is edible flesh with a few seeds. Shiny purplish-green oval-shaped leaves with a slightly lighter underside. Dark red to purple-red autumn colouring. Partial and full shade. Does not tolerate calcareous soils well, can then be anthracnose-sensitive. Good wind and frost resistance.

## kousa



Origin: Japan, Korea. Imported in Europe in 1860. High (6-8 m) and wide, upright shrub or small tree. Strongly rising in the juvenile stage, with a vase-shaped crown. Later often very wide with overhanging branches. The leaf is dark green. Beautiful autumn colouring turning to crimson. The flowers have 4 white bracts. Flowering in June, 2-3 weeks after *Cornus florida*. Red illusory fruits that resemble a strawberry.

## kousa 'China Girl'



Proefstation Boomkwekerij, Boskoop, the Netherlands, 1978. A selection from *Cornus kousa* var. *chinensis* but with large, cream-white bracts. Small tree or large shrub. Habit species-specific. Blooms very profusely and produces much bigger fruits with a diameter of approximately 3 cm.

# Cornus

fam. Cornaceae

## kousa 'Milky Way'



Wayside Gardens, Ohio, USA, 1961. Beautiful American cultivar. Small tree or large shrub. Very richly flowering selection. Cream-white bracts. Habit species-specific.

## kousa 'National'

(syn. *Cornus chinensis* 'National')



US National Arboretum, Washington D.C., USA. Height up to 7 m. Small tree or large shrub. Has large white, star-shaped flowers. A fast grower. Vase-shaped habit with dark green leaf. The white flowers in June contrast beautifully with the dark green leaf. Big red fruits.

## kousa 'Satomi'



Akira Shibamichi, Kawagushi City, Japan, 1979. Slower growth than the species and a more wide and rounded habit. This cultivar is different from the species in that the rather small bracts are pink to reddish in colour. Leaves are dark green, wide egg-round. Beautiful autumn colouring. Fruits are rather smooth.

## kousa var. chinensis



Origin: China. Introduced in Europe by Ernest Wilson (1876-1930) in 1907. High (6-10 m) and wide, upright shrub or small tree. Grows stronger and higher than the species. Although the species is from Japan, this variety naturally occurs in China. The flowers are surrounded by 4 white bracts (protective leaves). The reddish-pink fruits are bigger than those of the species.

## mas Yellow dogwood, Cornelian cherry



Indigenous to Europe. When top grafted, it grows into a small tree shape with a height of 3-6 m. As a shrub, it is bushy from the ground up and dome-shaped. Greenish twigs first hairy, later bare. Develops a dense crown. In winter, numerous round, striking greyish-green flower buds appear. Blooms in early spring before the leaves emerge with small, golden-yellow flowers in dense, spherical umbels of 10-12 mm. Long, egg-shaped fruits in summer, 15 mm, shiny, lacquered red, edible but rather sour. Very ornamental park shrub or tree, also for large gardens and public gardens.

## mas 'Aurea'



Germany, 1903. Yellow leafed cultivar of the *Cornus mas*. Small tree or tall shrub. Height 5-6 m. Hanging red fruits that contrast beautifully with the yellow leaf.



Cornus kousa 'Milky Way'



Cornus kousa 'Satomi'

# Cornus

fam. Cornaceae



Cornus mas

## mas 'Golden Glory'



Ralph Synnesvedt Nursery Company, Round Lake, Illinois, USA, 1970. Upright variety that develops into an upright shrub or small tree shape. Height 6-7 m, width 3 m. Very abundant flowering selection, golden-yellow flowers in February-March before the leaves emerge. Dark green, oval-shaped leaf. Beautiful grey trunk, which peels off as the tree ages. Deep purple autumn colouring. Edible, red, drop-shaped fruits. Plant in full sun or partial shade.

## mas 'Variegata'



UK, 1838. A multi-coloured selection with cream-white leaf edges. Small tree or tall shrub. Height 5-6 m.

## nuttallii Pacific dogwood



Origin: western part of North America. Introduced in Europe in 1837. Usually a big, upright shrub. Often also a beautiful, short-trunked tree with a height of 8-10 m. In the Netherlands, it remains substantially smaller. Leaves ovate to reversed egg-round, 7 t-12 cm. The actual flower is a small, round flower head of 9-10 mm, green to purple in colour. The striking beauty of its florescence is due to the large bracts that surround the flower head in a garland of 4 to 8 small leaves, hence it is an 'illusory flower'. The bracts are roundish ovate with a short, pointy end, 4-7 cm long and 2.5-5 cm wide, initially cream-white and as they get older turning to white with a pinkish hue. Splendid tree for large gardens and parks. However, it requires a lot of heat, sun and sheltering against the wind, especially sharp frosty winds. Fertile soil, moist but not too wet or cold.

## nuttallii 'Eddie's White Wonder'

(*Cornus nuttallii* x *Cornus florida* 'Rubra')



Henry Matheson Eddie (1881-1953), Vancouver, British Columbia, Canada, 1945, introduced in 1955 and patented in 1964. Grows rather straight and upright (similar to 'Monarch') and for that reason suitable for smaller gardens. Height 6-8 m. The flower shape is between that of both parents. Blooms shortly after *Cornus nuttallii*, white with 4 bracts. Beautiful, red autumn colour of the leaf. Soil and location factors similar to those of *Cornus nuttallii*.

## nuttallii 'Monarch'



Koninklijke Boomkwekerijen Alphons van der Bom BV, Oudenbosch, the Netherlands, 1970. Strongly upright growing variety. As a rule, it has 6, sometimes 5 cream-white bracts. Flower shape and colour for the rest more or less species-specific. Displays better hardiness than the species. Winter buds have 6 visible bracts. Because of its narrower upright habit, also very suitable for smaller gardens. Soil requirements species-specific.



Cornus nuttallii



Cornus nuttallii 'Eddie's White Wonder'

# Cornus

fam. Cornaceae

## offcinalis Japanese cornel dogwood



Origin: Japan. Imported in Europe in 1860. Shrub or small tree, 6-7 m high, resembling *Cornus mas*. Develops a beautiful, dominating central leader, which makes this species easy to cultivate as a tree. Blooms yellow in March-April similar to *Cornus mas*, but with slightly bigger roundish flower heads. Fruits up to 15 mm long, shiny scarlet-red. Lively auburn autumn colour. Beautiful park and garden tree.

## offcinalis 'Robins Pride'



Introduced by Boomkwekerij Udenhout, the Netherlands. A selection found by Tinus van der Bruggen (1948-2018) and named after his grandchild Robin. Wide pyramidal, upright growth, strong central leader and a height up to 6-7 m. The bark has a colour ranging from grey to orange and brown and peels off more strongly than *Cornus mas*. Oval and slightly curled leaves that turn beautiful orange to red-brown in autumn. 15 mm long and shiny scarlet-red fruits. They are edible, although slightly acidic, and often used to make jam. Widely cultivated for medicinal use. The early flowering, berries, autumn colouring and once established the whimsical and peeling bark, give this tree ornamental value in every season. Very suitable for narrow and small streets, green verges and fragmented areas of green. No specific soil requirements.

## x rutgersensis 'Ascona'

(syn. *Cornus nuttallii* 'Ascona')



Elwin Orton, Rutgers University, New Brunswick, New Jersey, USA, 1983. Wide shrub. Height up to 6 m. Overhanging branches. The flowers usually have 4 large, round bracts. Bright white inflorescence, the 4 bracts are clearly present on the buds in the winter as well. Use as a specimen shrub.

## x rutgersensis 'Aurora'®

(syn. *Cornus* x *rutgersensis* 'Rutban')



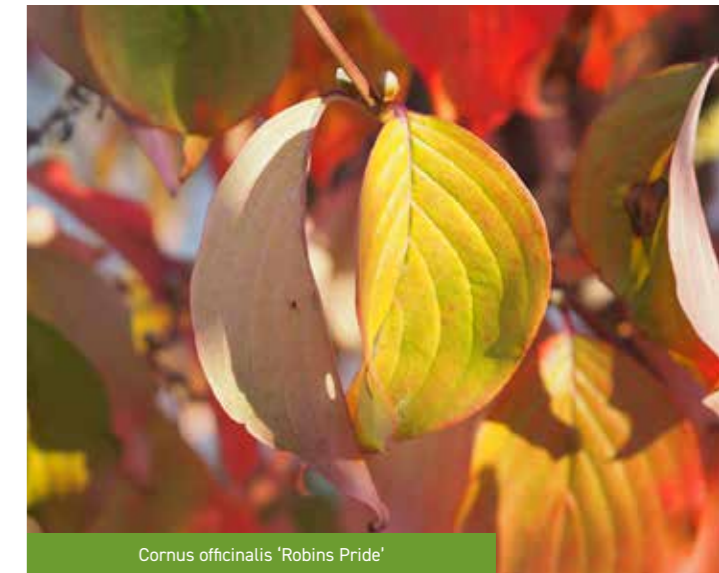
Elwin Orton, Rutgers University, New Brunswick, New Jersey, USA, 1990. This large-flowered hybrid develops into a broad shrub shape up to a height of 6 m. Blooms profusely with pure white flowers in late spring. Has better disease resistance.

## x rutgersensis 'Celestial'

(syn. *Cornus* 'Celestial Dogwood', *Cornus* x *rutgersensis* 'Rutdan')



Elwin Orton, Rutgers University, New Brunswick, New Jersey, USA, 1990. Small tree. Height up to 6 m. Straight, upright growth. Later slightly more rounded. Fresh green leaf. Beautiful yellow autumn colouring. Large, greenish-white flowers with 4 large bracts. Blooms after *Cornus florida* and before *Cornus kousa*. A narrow, small tree, previously traded under the name *Cornus* 'Galaxy'.



Cornus officinalis 'Robins Pride'



Cornus officinalis 'Robins Pride'



Cornus officinalis 'Robins Pride'



# Cornus

fam. Cornaceae



Cornus x rutgersensis 'Constellation'



Cornus x rutgersensis 'Stellar Pink'

## x rutgersensis 'Constellation'®

(syn. Cornus x rutgersensis 'Rutcan')



Elwin Orton, Rutgers University, New Brunswick, New Jersey, USA, 1990. Small tree. Height up to 6 m. Straight, upright growth. Large, white non-overlapping bracts (resembling Magnolia stellata). A narrow, small tree that blooms after Cornus florida and before Cornus kousa.

## x rutgersensis 'Ruth Ellen'®

(Cornus kousa x Cornus florida 'Hillenmeyer')

(syn. Cornus x rutgersensis 'Rutlan')



Elwin Orton, Rutgers University, New Brunswick, New Jersey, USA, 1991. The last crossing of the Stellar hybrids. Resembles Cornus florida more than Cornus kousa. Height 4-5 m, width 5-6 m. In its juvenile stage, already wide spreading with almost horizontal branches. The first one to flower in the Stellar group. Pure white flowers, when the wind blows it almost looks like there is a flock of butterflies, then colours light pink. Flowers are retained up to 3 weeks. The somewhat smaller, green foliage colours form dark purple to light red in autumn. Requires fertile, slightly moist soil. Hardy. Use as garden and park tree.

## x rutgersensis 'Stellar Pink'®

(Cornus kousa x Cornus florida 'Sweetwater Red')

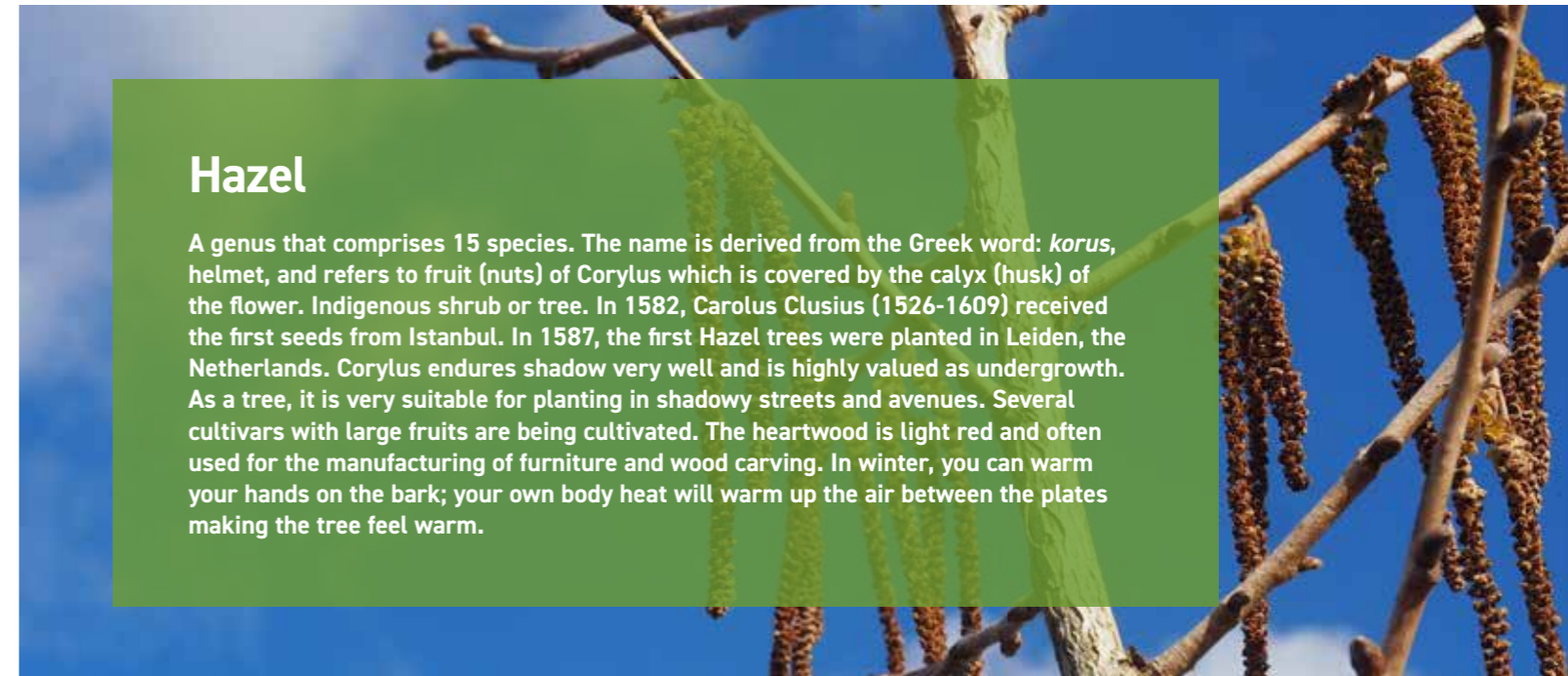
(syn. Cornus x rutgersensis 'Rutgan')



Elwin Orton, Rutgers University, New Brunswick, New Jersey, USA, 1990. A narrow, small tree with a height up to 9 m. Flowering starts when Cornus florida is past flowering and Cornus kousa has not yet reached its colour. Blooms in April-May with light pink bracts. Beautiful crimson autumn colouring. Red fruits, non-edible.

# Corylus

fam. Betulaceae



## Hazel

A genus that comprises 15 species. The name is derived from the Greek word: *korus*, helmet, and refers to fruit (nuts) of Corylus which is covered by the calyx (husk) of the flower. Indigenous shrub or tree. In 1582, Carolus Clusius (1526-1609) received the first seeds from Istanbul. In 1587, the first Hazel trees were planted in Leiden, the Netherlands. Corylus endures shadow very well and is highly valued as undergrowth. As a tree, it is very suitable for planting in shadowy streets and avenues. Several cultivars with large fruits are being cultivated. The heartwood is light red and often used for the manufacturing of furniture and wood carving. In winter, you can warm your hands on the bark; your own body heat will warm up the air between the plates making the tree feel warm.

## columna Turkish hazel



Origin: Southeast Europe, West Asia. Imported in 1582 in The Netherlands. Columna means horned / spiny, and refers to the clusters of the flowers which are covered by spiny involucre husks. Tree with a height of 15-20 m. Regular, wide egg-round to wide pyramidal crown with straight trunk. Greyish-brown, coarse trunk, covered with corky fissures that peel off in small plates. Two-year-old twigs already develop a soft, corky bark. Large and wide leaf with soft hairs. Flowers in February-March with thick yellowish-brown, long catkins. The nuts are enveloped in a thick, fleshy and later more woody glandular husk with long serrated hairs. For parks, but also for squares, avenues and wide streets. Endures paved surfaces. Strong, wind resistant tree.

## columna 'Kloon 21'



A clone found in Hungary by Tinus Van der Bruggen (1948-2018), purchasing specialist at Boomkwekerij Udenhout for more than 50 years. Purplish-red leaves. Growth is species-specific.



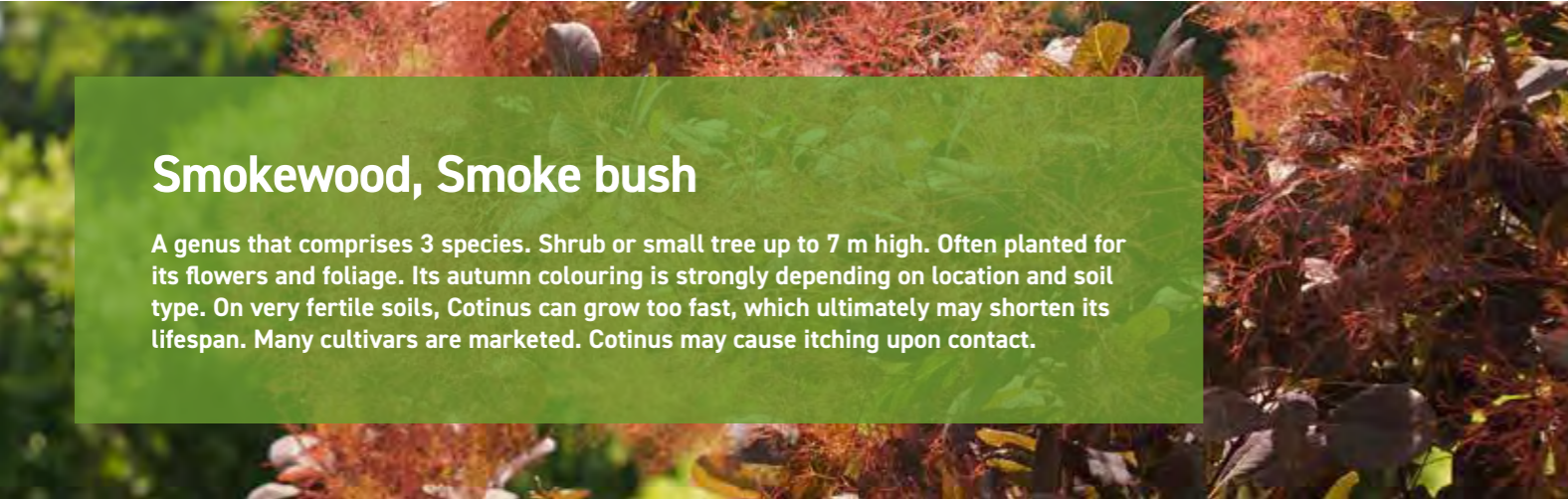
Corylus columna

# Cotinus

fam. Anacardiaceae

## Smokewood, Smoke bush

A genus that comprises 3 species. Shrub or small tree up to 7 m high. Often planted for its flowers and foliage. Its autumn colouring is strongly depending on location and soil type. On very fertile soils, Cotinus can grow too fast, which ultimately may shorten its lifespan. Many cultivars are marketed. Cotinus may cause itching upon contact.



Cotinus coggygria



Cotinus coggygria 'Royal Purple'

### coggygria

(syn. Rhus cotinus)



Naturally widespread, from Southern-Europe up to Central-China. Imported in Europe in 1594. Capricious growing shrub or small tree, 4-6 m high. Smooth, oval-shaped, green leaves. In May, yellow-green, pilose, flower panicles. Grows on all soils, but best not to plant on soils that are too fertile. Valuable for bees and butterflies. Hardy and resistant to air pollution. Specimen shrub for (public) gardens.

### coggygria 'Royal Purple'



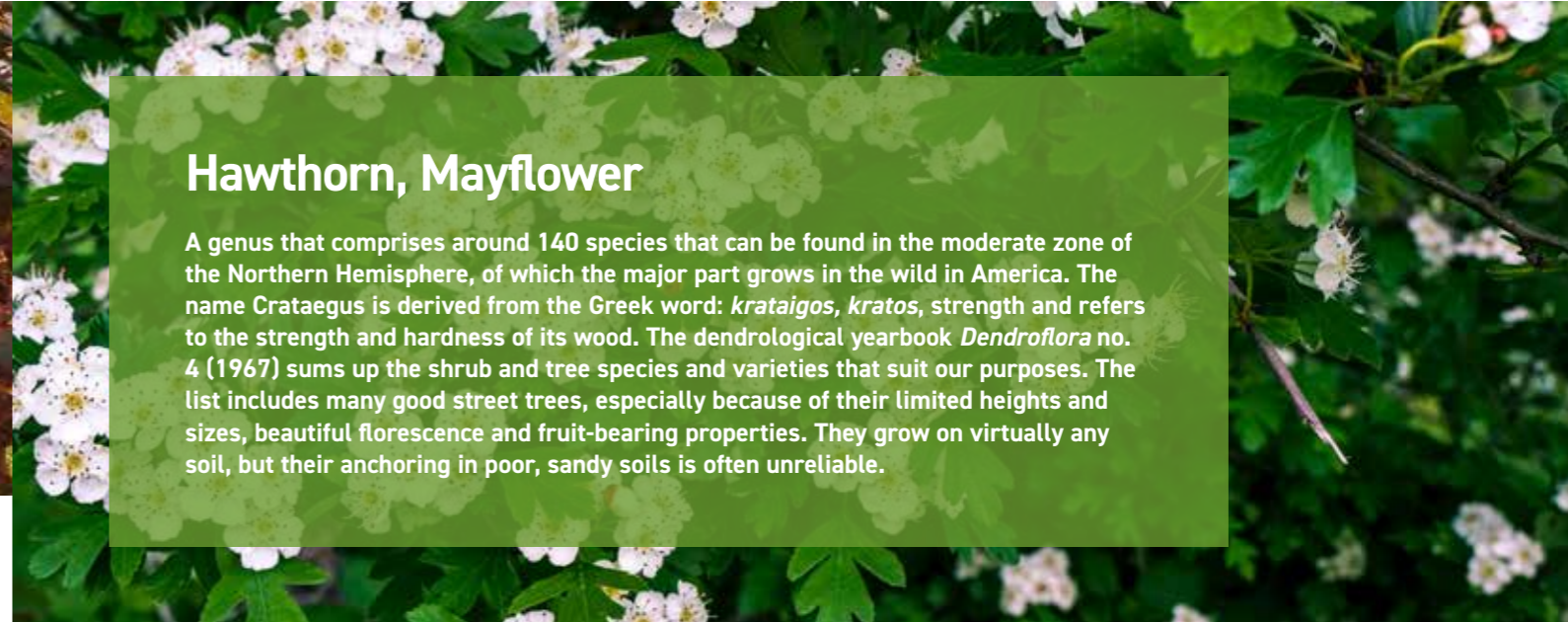
Kolster BV, Boskoop, the Netherlands, 1998. Shrub or small tree, 4-6 m high. Smooth, oval-shaped, green leaves that turn from maroon red in spring to dark purple-red in summer. Yellow autumn colouring. In May, smoky pink, pilose panicles. Grows on all soils, but best not to plant on soils that are too fertile. Valuable for bees and butterflies. Hardy and resistant to air pollution. Specimen shrub for (public) gardens.

# Crataegus

fam. Rosaceae

## Hawthorn, Mayflower

A genus that comprises around 140 species that can be found in the moderate zone of the Northern Hemisphere, of which the major part grows in the wild in America. The name Crataegus is derived from the Greek word: *krataigos*, *kratos*, strength and refers to the strength and hardness of its wood. The dendrological yearbook *Dendroflora* no. 4 (1967) sums up the shrub and tree species and varieties that suit our purposes. The list includes many good street trees, especially because of their limited heights and sizes, beautiful florescence and fruit-bearing properties. They grow on virtually any soil, but their anchoring in poor, sandy soils is often unreliable.



### chlorosarca



Origin: Manchuria. 7 m high tree with a closed, rather conical and relatively narrow crown with a central leader. Shiny, auburn twigs with few thorns. Ovate, dark green leaf that emerges very early. Blooms in early May, with single cream-white flowers that have red, hairy calyx. Sparsely fruit-bearing, black fruits, 8-10 mm. Good tree for narrower streets. Not cultivated.

### crus-galli 'Inermis'

(syn. Crataegus crus-galli 'Thornless', Crataegus crus-galli 'Cruzam', Crataegus crus-galli 'Crusador')



Lake County Nursery, Perry, Ohio, USA, 1980. A rather small variety that can be used for several purposes. Round, spreading crown with a height of approximately 7.5 m and an almost identical width. Lacks the big and sharp species-specific thorns. Leathery leaf, species-specific, very beautiful, shiny deep green, with orange to rust-coloured autumn hues. White and small flowers in 5 cm wide umbels. Dark red, long lasting fruits. Beautiful, moderately tall ornamental tree for parks and public gardens. As a street tree, only on wide green banks because of its low and wide crown.

### crus-galli 'Salicifolia' Cockspur hawthorn



UK, 1782. Grows more or less similarly to Crataegus x persimilis with a height of 10-12 m and a wide crown with horizontal scaffold branches. Leaf narrow lancet-shaped and thinner than the species and Crataegus x persimilis. Blooms with white umbels. Red fruits are red, long lasting. Especially suitable as a park tree, but sometimes also as a street tree. However, in the latter case preferably on slightly wider green verges, because of its low and wide crown. No longer cultivated.



Crataegus laevigata 'Crimson Cloud'



Crataegus x lavalleei



Crataegus x media 'Paul's Scarlet'

## x grignonensis

(Crataegus crus-galli x Crataegus pubescens)



Pierre Mouillefert (1846-1903), Arboretum de Grignon, Thiverval-Grignon, France, 1873. Tree with dense, wide crown, with a height of 5-6 m. Greyish brown branches without thorns. Leaf leathery, shiny green, long lasting. Blooms in May-June, with small bunches of white flowers that have stamens with red anthers. Auburn fruits, 15 mm, long lasting (up to the first frost). For parks and wind-sheltered streets. Requires space and firm anchorage.

## laevigata 'Crimson Cloud' English hawthorn



Princeton Nurseries, Kingston, New Jersey, USA, 1966. Selection with a wide egg-shaped, rather delicate crown, with slightly waving, spreading branches. Height approx. 5-8 m and width approx. 3-6 m. Strong grower, usually without thorns. Its size depends largely on the planting location. Dark green, light shiny foliage, no autumn colouring. Blooms with rather large, bright red, shiny fruits that are retained on the tree until winter. Attractive, little street tree on sunny locations, preferably on wider green verges. No specific soil requirements; however, for good growth the soil must not be too poor. Also a beautiful tree in small groups in public gardens.

## laevigata 'Masekii'

(syn. Crataegus oxyacantha 'Masekii')



Späth'sche Baumschulen, Berlin, Germany, 1899. Growth and height similar to 'Paul's Scarlet'. Double, softish pink flowers that hardly fade. Park tree suitable for large gardens or as a street tree when sheltered from wind.

## laevigata 'Plena'

(syn. Crataegus laevigata 'Rosea Flore Pleno')



France, 1696. Double flowering white hawthorn. Height up to 10 m, wide cone-shaped, later oval-shaped, very dense crown. The flowers change from white to light pink. Dark green, 3-5-lobed leaf. Is sterile. For parks, larger gardens, but also as a street tree on good compacted soil (well anchored) in wind-sheltered streets.

## x lavalleei Hybrid cockspurthorn, Laval hawthorn

(syn. Crataegus lavalleei var. carrierei)



Pierre Alphonse Martin Lavallee (1836-1884), Arboretum Segrez, Saint-Sulpice-de-Favières, France, 1867. Small tree, 5-7 m high. Irregular upward, later often round, compact crown. Matt-shiny, deep green leaf, long retained. Red top shoots in spring. In May, white flowers in flat bunches with pink anthers. Fruits rather big, 15-18 mm, in bunches, dull orange and retained on the tree until Christmas. Many thorns. Strong park and street tree. Endures drought and urban air pollution reasonably well.

## x media 'Paul's Scarlet' Midland hawthorn

(syn. Crataegus oxyacantha/laevigata 'Paul's Scarlet', Crataegus oxyacantha 'Paulii')



Found in the private garden of Christopher Boyd, Waltham Cross, Hertfordshire, UK, 1858. Propagated by William Paul (1822-1905) in 1866 under the name 'Paul's New Double Scarlet'. The well-known, double flowering red hawthorn. Height up to 10 m, wide conic, later ovate rounded, very dense crown. Park tree, for larger gardens, also planted as a street tree on compacted soil (well anchored) in wind-sheltered streets.

## x media 'Rubra Plena'

(syn. Crataegus laevigata 'Mutabilis', Crataegus oxyacantha 'Mutabilis')



UK, 1800. Has a slightly looser crown than 'Paul's Scarlet'. Striking, dark green leaf. Double flowers with pink buds that open white. Application similar to 'Paul's Scarlet' and 'Masekii'.

## mexicana 'Stipulacea'

(syn. Crataegus pubescens f. stipulacea)



Tree or large shrub with a wide crown and 8-10 m high. Egg- to lancet-shaped leaves, dark green, with felty underside. Blooms early in early May, with white flowers (Ø 20 mm) in felty bunches. Large, greenish-yellow to somewhat orange-coloured fruits that are retained a long time. Attractive park tree or shrub. For street planting, its crown is too wide and low. Hardly cultivated.

## monogyna 'Stricta' Upright hawthorn



Conrad Loddiges (1738-1826) & Sons, Hackney, UK, 1825. Variety with a height of 7-10 m. Loses height when maturing and the crown gets slightly wider. Single, white flowers, species-specific. Small fruits, dull red, inconspicuous. Specimen tree or in groups, also as a shrub. Suitable for narrow streets, but suffers from leaf scorching in drought and heat.

## x mordenensis 'Snowbird'



Morden Experimental Station, Manitoba, Canada, 1967. Cultivar with an ovate to roundish upward crown, with a height up to 7 m and a width of 5-6 m. Selected as a seedling from Crataegus x mordenensis 'Toba'. Has a shinier and more beautiful, dark green foliage. Small, double, white flowers in umbels. Fruits in bunches, bright carmine-red, shiny. Like 'Toba', suitable for gardens and parks, as an avenue tree it can only be used on wider green verges because of its low crown. No longer cultivated.



Crataegus x media 'Paul's Scarlet'



Crataegus mexicana 'Stipulacea'



Crataegus x mordenensis 'Toba'

# Crataegus

fam. Rosaceae



Crataegus x persimilis 'Splendens'



Crataegus x persimilis 'Splendens'



Crataegus x persimilis 'Splendens'

## x mordenensis 'Toba'

(Crataegus x media 'Paul's Scarlet' x Crataegus succulenta)



Morden Experimental Station, Manitoba, Canada, 1935. Small tree with a wide crown. Large, deeply indented, shiny green leaves. Double, cream-white flowers, flowering to soft pink. Seldom fruit-bearing (red). Excellent, small street tree. Requires space, preferably on green verges because the branches spread horizontally and rather wide.

## x persimilis 'Splendens'

(syn. Crataegus x prunifolia 'Splendens')



Germany, 1783. A very healthy variety with beautiful, dark green shiny leaves, beautiful fruits and a striking yellow-orange-red autumn colouring. An asset to wide streets. It also stands out in parks and green verges. Height up to 6-8 m with a wide, flat screen-shaped crown and thorns. Blooms abundantly with large white, felty umbels and intensely fragrant flowers in June. It is a fine tree for animals, especially for birds that benefit from the abundance of glossy red berries. This tree is on fire in autumn. The relatively large, shiny leaves have beautiful hues of scarlet, deep yellow and purple. A good choice for parks, streets and coastal areas. A tree with only a few soil requirements and low in maintenance.

## phaenopyrum



Origin: Eastern and Central parts of North America. Imported in Europe in 1738. The epithet phaenopyrum is derived from the Greek word: *phaeno*, visible and *Pyrus* (pear); referring to the resemblance to a pear tree. Tall shrub or small tree, 7-10 m high, with an almost round crown. Characteristic because of the 5 cm long auburn thorns on the bare, auburn twigs. Wide, egg-round leaves, shiny green. Blooms white, in bare, multi-flower bunches. Fruits in large bunches, shiny coral-red. Beautiful autumn colour. Hardly cultivated.

## pinnatifida var. major

(syn. Crataegus korolkowii)



Indigenous to North China. Imported in Europe in 1880. Small tree, with a height up to 8 m and a dense, irregular, spherical to oblate crown. Few thorns. Big, leathery green leaf with violet to red autumn colour. Single, white flowers. Big (15-25 mm) dark red fruits, round to pear-shaped, that are retained on the tree a long time. Beautiful specimen tree for parks and public gardens. Valuable, also for narrower streets because of the ornamental value of the foliage and fruits and its autumn colour.

## punctata 'Ohio Pioneer'®



Secret Arboretum, Wooster, Ohio, USA, 1962. Forms a round, slightly flattened crown, height 7-9 m. Almost completely thornless. Wide ovate, dark green foliage with an irregularly toothed leaf margin. Felty and hairy underside. In May-June, white-pink flowers in umbels after which dark red, round fruits appear. Grows on all soils, if not too moist. Garden and park tree.

# Crataegus

fam. Rosaceae

## succulenta 'Jubilee'®



Selection by PPO, Lisse, the Netherlands 2007. Tree with a central leader, wide oval. Height 6-8 m. Dark green, healthy leaves. Very abundant flowering, pure white in May. Red berries in autumn. Fire-blight resistant. Specimen, park and avenue tree.

## viridis 'Winter King'



Simpson Nursery, McMinnville, Tennessee, USA, 1955. Most planted Hawthorn in the USA. Develops into a wide vase-shaped tree shape with a height of 6-8 m and a width of 7 m. Wide crown, because of its spreading branches. Trunk forks halfway the trunk into side branches. The bark of the trunk is strikingly silver-grey. Rather flat crown. Leaves shiny, dark green with yellow to red autumn colours. White flowers in 5 cm wide bunches in abundance. Numerous fruits, bright red, rather small, retained on the tree deep into winter. Because of its typical, strongly and angularly branched crown, the silver-grey bark of the trunk and main branches and its rich fruit-bearing qualities, 'Winter King' is a very ornamental park tree in the winter too. Not a street tree because of its low, wide crown, unless it is planted in very wide green banks, far enough distanced from roads. No longer cultivated.

## wattiana



Origin: Central Asia. Small tree, with a height up to 10 m. Ovate, shiny, bright green leaf. White flowers in rather wide bunches. Fruits orange-red. Because of its florescence, its fruit-bearing qualities and attractive leaf colour, it is a beautiful park tree with a slender crown. No longer cultivated.



Crataegus succulenta 'Jubilee'



Crataegus succulenta 'Jubilee'

# Cydonia

fam. Rosaceae

## Quince

A monotypic genus that is closely related to Chaenomeles. The name Cydonia is derived from the Greek word: *kydonia*, a Greek district in which the quince was indigenous. Cydonia has been grown en masse since ancient times, mainly for domestic use (jams, spirits, and tea). Some cultivars can be eaten raw. The botanist Columella called it the tree with the golden apples.



Cydonia oblonga



Cydonia oblonga 'Leskovacka'



Cydonia oblonga 'Vranja'

### oblonga

(syn. *Cydonia vulgaris*)



A very old fruit tree. Height up to 8 m. Capricious growth. In the juvenile stage, it grows more wide, later it grows more upward. Young twigs with a white, felty and hairy layer. White to soft pink flowers. After flowering, large, yellow, pear-shaped to egg-shaped fruits appear. Several cultivars are marketed: 'Rea's Mammoth', 'Vranja', 'Champion'. Beautiful yellow autumn colouring.

### oblonga 'Leskovacka'

(syn. *Cydonia oblonga* 'Leskovacz')



Grows wide, vase-shaped to a height of 5 m. Green, ovoid leaves with a white, velvety underside. Blooms in May-June, with white-pink, very fragrant flowers. Yields large, apple-shaped, highly aromatic, yellow-green fruits that are covered with a protective waxy layer. Self-pollinating. Sun and partial shade. Grows on all soils. Wind resistant, also suitable for coastal areas.

### oblonga 'Vranja'

(syn. *Cydonia oblonga* 'Vrania')



Vrania, Serbia. Grows wide, vase-shaped to a height of 5 m. Green, ovoid leaves with a white, velvety underside. Blooms in May-June, with white-pink, very fragrant flowers. Yields large, pear-shaped, highly aromatic, yellow-green fruits that are covered with a protective waxy layer. Self-pollinating. Sun and partial shade. Grows on all soils. Wind resistant, also suitable for coastal areas.

# Davidia

fam. Nyssaceae

## Dove tree, Handkerchief tree

A monotypic genus. Together with *Nyssa* part of the Nyssaceae family. The French Lazarist Père Armand David (1826-1900) discovered this tree in China in 1869. The genus *Davidia* is named after him. In 1897, the French Jesuit Père Guillaume Farges (1844-1912) collected seeds and sent them to Paris. The French grower Maurice de Vilmorin sowed the seeds. One specimen germinated and flowered about 6 years later. The *vilmoriniana* variety is named after de Vilmorin. *Involucrata* is derived from the Latin word: *involvere*, to wrap and refers to the 2 bracts that enclose the flower. *Davidia* stays considerably smaller when planted on dry soils.

### involucrata



Origin: West-China. A relatively tall, monoecious tree, height 15 m. The branches are thick, firm and rather bare. Peeling bark (more or less similar to *Platanus*). Trunk is brownish red, greyish-brown or greenish-brown. Leaf is sparse, wide ovate (8-15 cm long and 5-10 cm wide), fresh shiny dark green, slightly hairy on the underside. Flowers in May-June, during budding with a striking inflorescence. Flowers in spherical heads, surrounded by large, uneven cream-white 8-10 cm long bracts, 2 to 3 for every flowerhead. Big, oval, nut-shaped fruits with a length of 3 cm. Beautiful park tree for sheltered, sunny locations on fertile soils.

### involucrata 'Sonoma'



Hidden Forest Nursery, formerly known as Sonoma Horticultural Nursery, Sebastopol, California, USA, 1984. This cultivar stays shorter, up to 6-8 m high. Flowers at an early age, after 5-6 years. Seedlings flower only after 20 years. Numerously more white bracts, up to 30 cm in size, than the species. Very hardy. Suitable for small gardens, flowerbeds and public gardens

### involucrata var. vilmoriniana



Maurice De Vilmorin (1849-1918), Paris, France, 1897. Medium-sized tree, wide, egg-round crown, 10 m high. Thick and bare upward branches with purple winter buds on firm twigs. Large heart-shaped leaf, 8-15 cm, very hairy underside. Flowers in May-June during budding striking inflorescence. Flowers consist of spherical heads, surrounded by two large, uneven cream-white 8-16 cm long bracts. Large, oval 3 cm big-pitted fruits on long petioles. Beautiful park tree for sheltered, sunny locations on fertile soils.



Davidia involucrata



Davidia involucrata var. vilmoriniana

# Diospyros

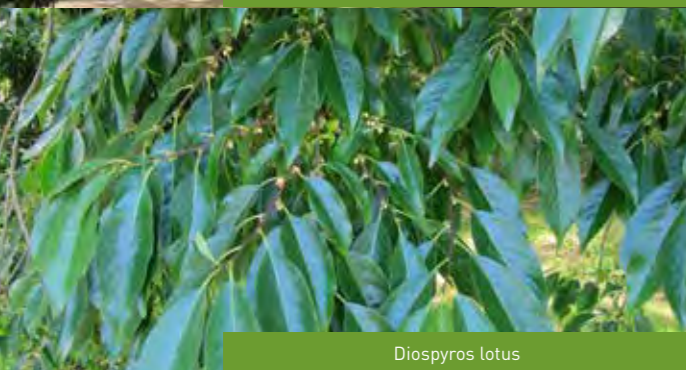
fam. Ebenaceae

## Persimmon

A genus that comprises around 475 species worldwide, most of them occur in tropical regions. Usually they are evergreen shrubs or trees. Diospyros is derived from the Greek words: *dios*, divine and *pyros*, fruit. Persimmon means 'dry fruit' in the language of native North American people. Mostly dioecious, but sometimes monoecious. Many species are used for wood production (ebony).



Diospyros lotus



Diospyros lotus



Diospyros virginiana

**kaki** Japanese persimmon, Oriental persimmon, Kaki



Origin: Japan, Korea, Himalaya, Thailand, Myanmar, Indochina. This species is the most cultivated and one of the oldest cultivated plants. Up to 15 m, deciduous, monoecious or dioecious, with a rounded, open crown. The alternately placed, leathery leaves are oval and up to 25 cm long and 10 cm wide. They are shiny and dark green on top and set with silver-brown hairs on the underside. Colours yellow to red in autumn. The male flowers appear in clusters of 3 in the leaf axils. The female flowers also appear in the leaf axils. Persimmons are parthenocarpic, they form fruits without pollination. The fruits are up to 10 cm in size and orange when ripe. The wood of the kaki tree, like the closely related ebony, is very hard and is used for the manufacturing of furniture. Prefers a warm and nutrient-rich location.

**lotus** Sacred lotus



Origin: Asia. Introduced in Europe in 1588. Hardy, deciduous tree, 20-25 m high, with an ovoid half-open crown. Dark green, oval pointed, smooth-edged leaves, 10-15 cm long and 2.5-6 cm wide. The leaves are light green and hairy on the underside. Yellow autumn colouring. The green flowers appear in June, followed by blue-black, edible, plum-shaped fruits, which can be harvested in October-November. Grey, rectangular-blocked bark once established. Grows on all soils and is drought resistant. Does not tolerate paved surfaces.

**virginiana** American persimmon



A medium-sized tree or large shrub, naturally occurring in eastern USA, up to 20 m high. Dioecious, good grower. Is traditionally cultivated for its fruits, which are oval to round and very tasty (3-6 cm). Light green leaves, with an approximately 2 cm long petiole. Leaf ovate with lengths up to 15 cm and a width of 8 cm. 2 or 3 flowers in the axil of a new leaf. Whitish-green flowers. Bark dark brown, chequered. The fruits mature in autumn over a period of 3 weeks. Beautiful autumn colouring. Hardy. Grows on all well-drained soils.

# Elaeagnus

fam. Elaeagnaceae

## Elaeagnus

A genus that comprises around 45 species. The name Elaeagnus is derived from the Greek words: *elaia*, olive and *agnos*, willow. Often a shrub or small tree. Has many thorns and often planted as hedging to obtain privacy. Some cultivars are marketed and they are mostly top grafted.

**angustifolia** Oleaster, Quicksilver, Russian olive



Mediterranean to central-Asia. Introduced in Europe in 1594. Large shrub or medium-sized tree. Height up to 8 m. The twigs are sometimes thorny, brown with silvery-white scales. Leaf is lancet-shaped with a silvery-grey underside. Small, yellow flowers in May. Deciduous. Olive-shaped, yellow fruits. Elaeagnus is wind resistant and can be planted in coastal areas.

**x ebbingei**

(*Elaeagnus macrophylla* x *Elaeagnus pungens*)

(syn. *Elaeagnus edulis*)



Simon Godfried Albert Doorenbos (1891-1980), The Hague, the Netherlands, 1929. Shrub or small tree, 3-4 m high. Also available top grafted. Evergreen. Shiny, olive-green foliage with a silvery underside. Cream-white, inconspicuous flowers from September until October. The red berries ripen until April and are high in vitamins. When planted in the shadow, berries do not ripen. Best not to prune after September. Grows on all soils. Very hardy and good resistance to drought, heat and salt. Thrives in coastal areas. For small (public) gardens and parks.

**'Quicksilver'**

(*Elaeagnus commuta* x *Elaeagnus angustifolia*)



Roy Lancaster & Hillier Nurseries, Ampfield, Romsey, UK, 1960. Named in 1971. Narrow, rising oval and loose shrub or small tree, 4-5 m high. Evergreen. Has slightly thorny branches. Highly attractive, silver, lancet-shaped leaves. Small, cream-coloured fragrant flowers from May to July. Attracts many bees and other insects. Yellow, sweet tasting berries, edible, but somewhat bland. Especially birds and squirrels are fond of these berries. Grows on all soils. Very hardy and good resistance to drought, heat and salt. Thrives in coastal areas. For small (public) gardens and parks.



Elaeagnus angustifolia



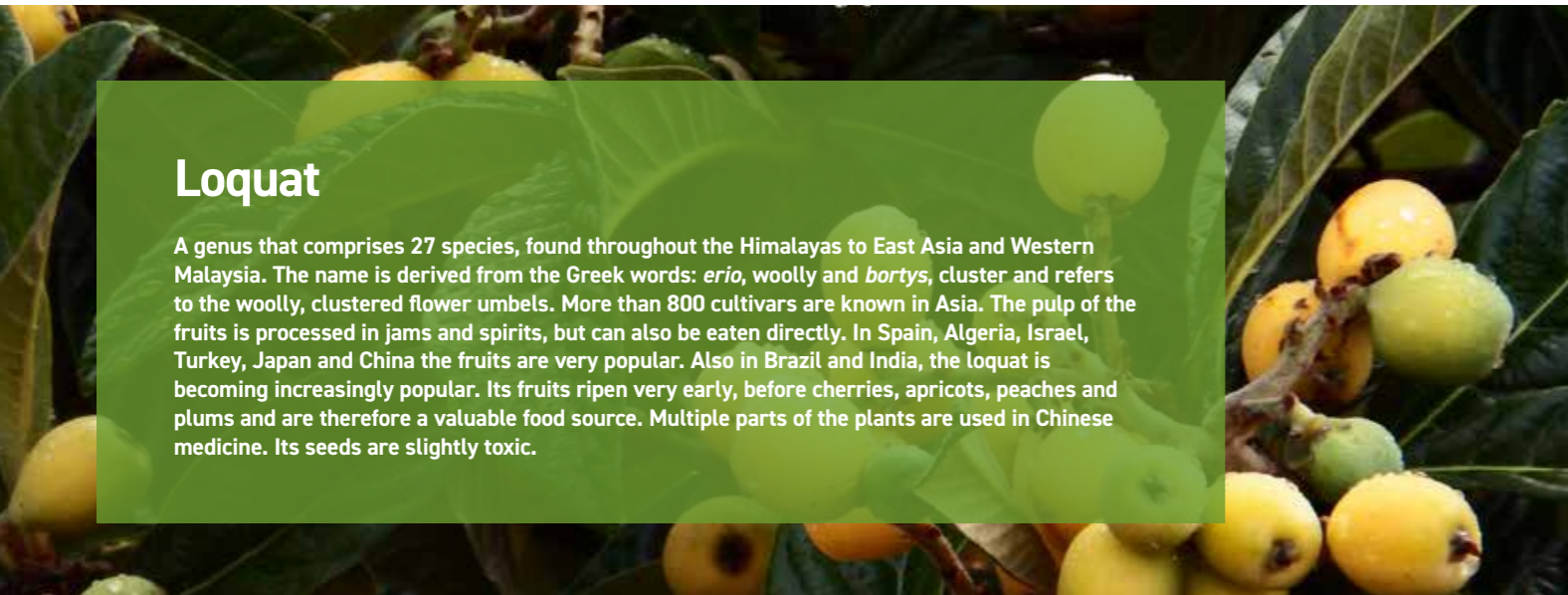
Elaeagnus x ebbingei

# Eriobotrya

fam. Rosaceae

## Loquat

A genus that comprises 27 species, found throughout the Himalayas to East Asia and Western Malaysia. The name is derived from the Greek words: *erio*, woolly and *bortys*, cluster and refers to the woolly, clustered flower umbels. More than 800 cultivars are known in Asia. The pulp of the fruits is processed in jams and spirits, but can also be eaten directly. In Spain, Algeria, Israel, Turkey, Japan and China the fruits are very popular. Also in Brazil and India, the loquat is becoming increasingly popular. Its fruits ripen very early, before cherries, apricots, peaches and plums and are therefore a valuable food source. Multiple parts of the plants are used in Chinese medicine. Its seeds are slightly toxic.



Eriobotrya japonica

**japonica** Japanese medlar  
(syn. Mespilus japonica)



Small, spherical-growing tree originating from China and Japan. Introduced in Europe in 1800. Height 5-7 m. The leaves are 15-25 cm long, glossy, dark green with yellow, velvety hairs on the underside and with a reddish and deep venation in autumn. The fragrant, yellow-white flowers appear in clusters from September to November. Round to pear-shaped fruits with a fresh and sour taste. Very suitable as an ornamental tree for sheltered locations.



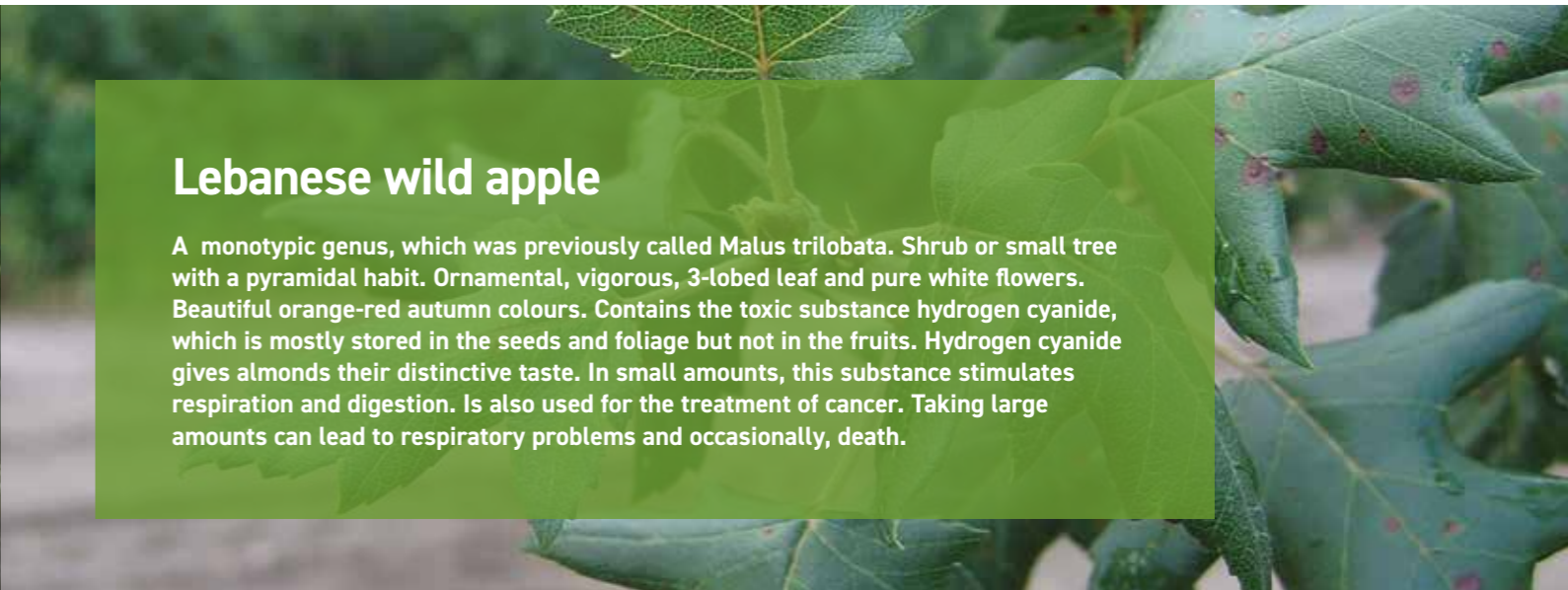
Eriobotrya japonica

# Eriolobus

fam. Rosaceae

## Lebanese wild apple

A monotypic genus, which was previously called *Malus trilobata*. Shrub or small tree with a pyramidal habit. Ornamental, vigorous, 3-lobed leaf and pure white flowers. Beautiful orange-red autumn colours. Contains the toxic substance hydrogen cyanide, which is mostly stored in the seeds and foliage but not in the fruits. Hydrogen cyanide gives almonds their distinctive taste. In small amounts, this substance stimulates respiration and digestion. Is also used for the treatment of cancer. Taking large amounts can lead to respiratory problems and occasionally, death.



**trilobatus**  
(syn. *Malus trilobata*)



Origin: Eastern part of the Balkans, Western Turkey. Pyramidal rising up to 6-8 m. Shiny green, 3-lobed leaf, yellow with red autumn colours. Flowers mid-June with single white 25-35 mm flowers in bunches of 6-8 flowers. Fruits are round to egg-shaped, 12-16 mm, yellow with red. Beautiful, small tree for public green spaces and gardens, ideal because of its small fruits and the beautiful autumn colour. Free of scab.



Eriolobus trilobatus

# Eucommia

fam. Eucommiaceae

## Hardy rubber tree

A monotypic genus. Dioecious. The generic name is derived from the Greek words: *eu*, source and *koggi*, gum and refers to the latex in the bark. *Eucommia* is the only rubber producing plant in the Northern Hemisphere. In China, it is used for the production of rubber. If a leaf is torn across, strands of latex exude from the leaf veins and hold the two parts of the leaf together.



*Eucommia ulmoides*



*Eucommia ulmoides*

### ulmoides



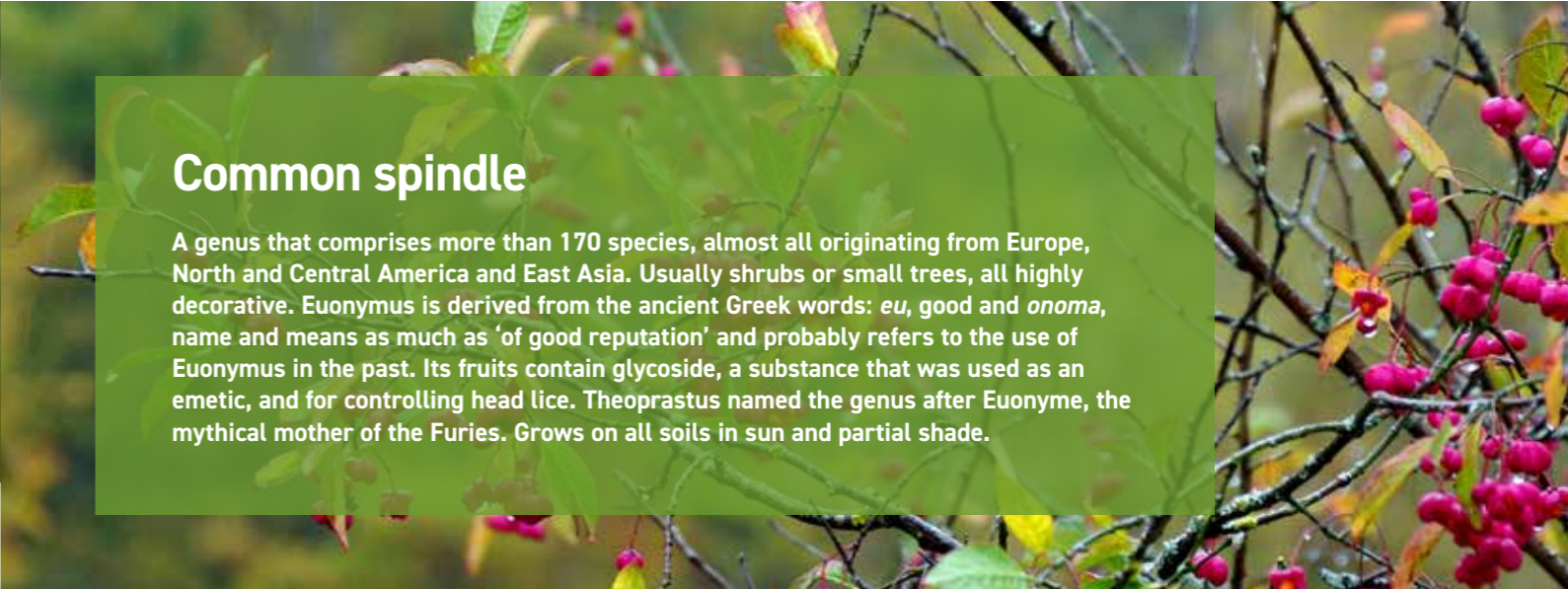
Origin: China, where they are grown in large numbers for medicinal use. Imported in Europe in 1896. A relatively unknown, but very beautiful park tree, height up to 15 m. Resembles the elm in both growth and leaf shape. Open, round crown. Ovate, egg-round leaf, 6-8 cm, bright green. Dioecious green flowers. Yellow autumn colour. Exclusive park tree.

# Euonymus

fam. Celastraceae

## Common spindle

A genus that comprises more than 170 species, almost all originating from Europe, North and Central America and East Asia. Usually shrubs or small trees, all highly decorative. *Euonymus* is derived from the ancient Greek words: *eu*, good and *onoma*, name and means as much as 'of good reputation' and probably refers to the use of *Euonymus* in the past. Its fruits contain glycoside, a substance that was used as an emetic, and for controlling head lice. Theoprastus named the genus after *Euonyme*, the mythical mother of the Furies. Grows on all soils in sun and partial shade.



### alatus Burning bush

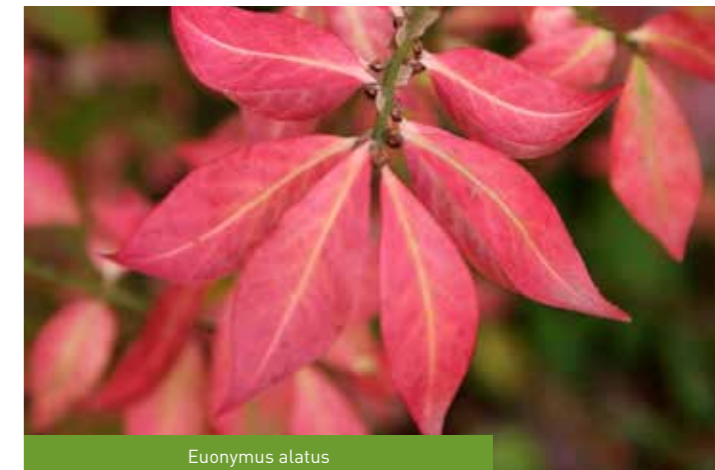


Originally from Siberia, Manchuria, China, Korea and Japan. Imported in Europe in 1856. This rounded shrub with a very dense structure grows 4-5 m high. The branches are square with striking cork-like frames. Oval to elliptical, green leaves with a serrated margin. Beautiful scarlet autumn colouring. Inconspicuous yellow-green flowers in May-June, followed by four-cornered pink-red capsules with an orange seed in the middle. Poisonous plant. Thrives in sun, (partial) shade on all soils.

### europaeus 'Red Cascade' European spindle



George Rowland Jackman (1902-1976), Jackman's Nursery, Woking, Surrey, UK. Large shrub or small tree. Height 3-5 m. Green branches and twigs. Leaves green, ovate. Foliage turns beautiful deep red in autumn. 'Red Cascade' develops a distinct central leader, thus enabling it to grow into a small tree shape very well. Bright pinkish-red, poisonous fruits with orange threads in abundance, which contrast beautifully with the red autumn colouring. Use as a specimen shrub/ tree.



*Euonymus alatus*



*Euonymus europaeus* 'Red Cascade'



# Fagus

fam. Fagaceae

## Beech

A genus that comprises 10 species. The main representation in Europe is *Fagus sylvatica*, which has been historically occurring as a forest and wood tree in the whole of Central and Western Europe. Many cultivars of this species are still being cultivated and planted. All species and varieties of beech put high demands on soil and planting location. They require open, fertile soils in which the root system can develop well. Beech are trees for woods, parks and, when used as an avenue tree, wide open, green verges. Beech do not endure closed pavement.

### *orientalis* 'Iskander'<sup>®</sup> Oriental beech



Iskander is the eastern name of Alexander the Great. Columnar growth, 16-20 m high with a dense crown. Green beech leaf with yellow autumn colouring. Grows on all soils, if not too moist. This selection is very resistant to heat and drought. Moderately wind resistant.

### *sylvatica* Common beech, Green beech



Origin: Central and Western Europe. A wide, tall tree with a height of 25-30 m. The typical, dense and low-branched habit is a majestic sight in summer and winter. The Common beech requires calcareous, preferably damp but still well-drained, rich, loamy soil, in which the root system can develop well. Heavy clay, poor, dry and sandy soils and damp, peaty soils with a high groundwater level are unsuitable for planting beech. Major permanent changes to the groundwater level, or sudden changes to the soil conditions, often cause older beech to die quickly. The capacity to endure shade is strong in the first 30 years of its life. However, once established, beech prefer lots of light. The beech tree itself produces a deep shade. The bark is smooth, greyish and rather thin. Sudden exposure to full sunlight, e.g. as a result of pruning or by the removal of adjacent beech from an avenue planting, may cause sun scorching on the bark. The cracks in the bark are easily susceptible to a Coral spot infection, which may cause sudden death. For that reason, it is recommended to plant young trees in full leaf and close together. Besides being a valuable forest tree and a beautiful park tree – in the latter case preferably in groups – the Common beech is a valuable avenue tree on wide verges and green banks under perfect soil conditions.

### *sylvatica* 'Anniek'<sup>®</sup>



André Van Nijnatten, Zundert, the Netherlands. Selection from seedlings. Very similar to 'Dawyck', but has a more uniform shape. Columnar growth, 16-20 m high with a dense crown. The typical beech leaf turns yellow in autumn. Dried leaves are retained on the tree for a long time. Inconspicuous, yellow-green flowers in May. Grows on all soils, if not too moist. Does not tolerate paving.



*Fagus sylvatica*

*Fagus sylvatica*

# Fagus

fam. Fagaceae



Fagus sylvatica 'Aspleniifolia'



Fagus sylvatica 'Atropunicea'



Fagus sylvatica 'Bornyensis'

## **sylvatica 'Aspleniifolia'** Fern-leaf beech



Simon-Louis Frères, Metz, France, 1811. Initially a slow pyramidal grower; later growing rather tall up to 15-20 m and spreading widely. Has an irregular deeply lobed to deeply indented leaf, sometimes linear and often entirely linear at the top shoots, 5-10 mm wide. With its highly attractive foliage, one of the most beautiful beeches to use as a park tree.

## **sylvatica 'Atropunicea'** Purple beech

(syn. *Fagus sylvatica* 'Purpurea')



Hanleiter Forest, Sonderhausen, Germany, 1680. Height, shape and size similar to the Common beech. Buds shiny auburn to crimson, later just auburn to an often more brownish-green in the shaded heart of the crown. As a rule, it grows true from seed, but variations in the depth of the auburn colour do occur. However, in groups of purple beech this gives an attractive colour variation.

## **sylvatica 'Black Swan'**



Ton van den Oever, Haaren, the Netherlands, 1984. A red-leafed weeping beech. Narrow, upward growing tree with a rising top and vigorously weeping branches. Leaves are regularly shaped, well-sized and very dark red (reddish-black), buds distinctively red.

## **sylvatica 'Bornyensis'**



Simon-Louis Frères, Metz, France 1870. Found near a church in the village Borny. A green-leaf weeping beech, different from *Fagus sylvatica* 'Pendula' because of the asymmetrical habit. Develops a central leader, from which the crown does not continue, but forks into branches that drop limply alongside the trunk. Often almost all hanging branches are on one side of the trunk. Sometimes with slightly lighter weeping branches suspending irregularly at the opposite trunk side. As a result, the tree is more or less columnar. Ornamental park tree with heights from 15 m to 20 m maximum.

## **sylvatica 'Cockleshell'**



Hillier Nurseries, Ampfield, Romsey, UK, 1960. Tight, narrow pyramidal growth, 12-15 m high. Green, wide ovate to round foliage with a smooth leaf margin. Resembles 'Rotundifolia', but stays considerably narrower. Yellow autumn colour. Yellow-green, inconspicuous flowering in May. Grows on all soils, if not too moist. Very hardy. Does not tolerate pavement, but endures shade. Garden and park tree and suitable for streets and lanes.

## **sylvatica 'Dawyck'** Fastigiata beech

(syn. *Fagus sylvatica* 'Fastigiata')



Dawyck Botanical Garden, Dawyck, Scotland, UK, 1860. Introduced in 1913 by Hesse Baumschulen, Weener, Germany. Tall, columnar tree with upright branches and upright twigs along the trunk. Height up to 25 m and then only 3 m wide. Shiny, dark green beech leaf. Beautiful, specimen park tree.

# Fagus

fam. Fagaceae

## **sylvatica 'Dawyck Gold'**

(*Fagus sylvatica* 'Zlatia' x *Fagus sylvatica* 'Dawyck')



James Van Hoey Smith (1921-2010), Trompenburg Arboretum, Rotterdam, the Netherlands 1968. Habit similar to 'Dawyck'. Leaves are species-specific, golden-yellow in spring, turning light green in summer, and turning golden-yellow again in autumn. Beautiful, specimen park tree, especially against dark backgrounds.

## **sylvatica 'Dawyck Purple'**



James Van Hoey Smith (1921-2010), Trompenburg Arboretum, Rotterdam, 1973. Also a columnar habit. Height 20-30 m. A more intense, deep red to blackish-brown variety of 'Atropunicea', with a larger leaf. Reproduction through vegetative propagation and as a result, its colour is more consistent than the colour of *Fagus sylvatica* 'Atropunicea'. Beautiful park tree.

## **sylvatica 'Grandidentata'**



Germany, 1810. Grows into a wide, egg-shaped tree, height 20-25 m. Has large, green, wide, egg-shaped leaf which is roughly serrated. Beautiful park tree.

## **sylvatica 'Latifolia'**



Germany, 1864. Seedling from *Fagus x taurica* (syn. *Fagus moesiaca*). Growth is species-specific. The leaf is oval egg-shaped and approx. 8 cm in size. Yellow-brown to light orange autumn colouring. After the striking flowering, nuts appear in small cupules. Use as a specimen tree.

## **sylvatica 'Pendula'** Green weeping beech



Milton Park, Northamptonshire, UK, 1836. Traded since ca. 1899. Height 20-25 m. The well-known Weeping beech with a very big, dome-shaped crown, growing very wide with overhanging weeping branches around the trunk(s) plunging towards the ground and long, rather limp twigs. Specimen tree for large parks and estates.

## **sylvatica 'Purple Fountain'**



Herman J. Grootendorst (1911-1982), Boskoop, the Netherlands, 1976. Quite different in shape from the Green weeping beech. Narrow rising tree with central leader and limply suspending branches. Does not grow tall and remains narrow. Leaves similar to the species, auburn and less dark than those of *Fagus sylvatica* 'Purpurea Pendula'. Buds strikingly red. Beautiful park tree that remains narrow, so ideal for planting locations with limited space. Can also be planted in larger gardens.



Fagus sylvatica 'Dawyck Purple'



Fagus sylvatica 'Purpurea Tricolor'

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Fagus sylvatica 'Purpurea Tricolor'



Fagus sylvatica 'Quercifolia'



Fagus sylvatica 'Rohanii'

## **sylvatica 'Purpurea Latifolia'**



Germany, 1903. A more intensely deep red to blackish-brown coloured variety of 'Purpurea', with a larger leaf. Height 20-30 m. Reproduction through vegetative propagation and as a result, its colour is more consistent than the colour of Fagus sylvatica 'Atropunicea'. Beautiful park tree.

## **sylvatica 'Purpurea Pendula'** Black weeping beech



Germany, 1865. Small and slow-growing, more or less arbour-shaped weeping tree that does not form a central leader. The strong and rather thick branches are overhanging in short arches. The firm twigs grow perpendicularly down. Has shiny, blackish-brown normal-sized leaves. A strikingly decorative, small ornamental tree for smaller gardens and such. It is recommended that the short trunk of approx. 2 m is wrapped in sackcloth during the first few years from the top down, until the crown provides sufficient shade and bark scorch can be prevented.

## **sylvatica 'Purpurea Tricolor'**

(syn. Fagus sylvatica 'Roseomarginata')



Simon-Louis Frères, Metz, France, 1883. Rather narrow tree with a height of 8-10 m, in rare cases up to 15 m high. Wide branches with thin twig development. The relatively small, purple leaf has a carmine-pink leaf edge of a variable width. The coloured leaf edge is often highlighted with whitish-pink stripes. Ornamental park tree with an attractive colour effect, for sunny, but sheltered planting locations.

## **sylvatica 'Quercifolia'** Oak-leaf beech



Tetschen Estate, Bohemia, Germany, 1792. Cultivated since 1860. Height up to 20 m. Big tree, growth similar to the Common beech. The green leaf is egg-round oblong with short, wide lobes, with a slightly serrated margin. Leaf shape is between that of 'Aspleniifolia' and the species. Beautiful yellowish-brown autumn colouring. Stunning park tree.

## **sylvatica 'Riversii'**

(syn. Fagus sylvatica 'Purpurea Major')



Thomas Rivers (1798-1877), Rivers Nursery, Sawbridgeworth, UK, 1870. This is the most attractive Black-leaf beech, with large, shiny and deep blackish-brown leaves. Large park tree with a wide crown that keeps its colour until deep into autumn.

## **sylvatica 'Rohanii'**



Rohan Family Castle, Sychrov, Bohemia, Czech republic, 1888. In trade since 1908. A very beautiful, but moderately fast-growing park tree with a height of 12-14 m. Thin branches and a relatively compact crown. The leaf is dark auburn and irregularly to deeply indented with rounded lobes. Buds bright red, approximately 8 days before the Common beech.

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## **sylvatica 'Rohan Obelisk'**



Arboretum Trompenburg, Rotterdam, the Netherlands, 1973. A seedling of Fagus sylvatica 'Rohanii', with dark brown-red and irregularly to deeply indented leaves with rounded lobes. 'Rohan Obelisk' grows in a more compact, narrow shape, and is straighter than 'Rohanii'. Beautiful park tree.

## **sylvatica 'Rotundifolia'**



George Jackman (1837-1887), Jackman's Nursery, Woking, UK, 1872. Compared to the Common beech this park tree remains rather low, but does grow wide, height up to approx. 15 m. Initially slender-growing with strongly spreading branches. Leaf shiny dark green, roundish to circular, 15-40 mm long and almost just as wide. Ornamental and striking park tree.

## **sylvatica 'Zlatia'**

(Fagus sylvatica x Fagus orientalis)



Späth'sche Baumschulen, Berlin, Germany, 1891. Found in Vranja, Serbia. Zlata means gold in Serbian. A striking, low and widely branched park tree with a big, wide crown. Buds early with rather large, shiny and bright yellow to golden-yellow leaves that turn yellow-green in summer. Beautiful specimen tree for larger parks, etc.



Fagus sylvatica 'Rohan Obelisk'



Fagus sylvatica 'Rotundifolia'

# Firmiana

fam. Malvaceae

# Fraxinus

fam. Oleaceae

## Chinese parasol tree

A monotypic genus. Carl Linnaeus (1707-1778) named this genus after Karl Joseph von Firmian (1716-1782), an 18th century Imperial Governor of Lombardy and director of the Europe's first botanical garden: Padua Botanical Garden in Italy. Previously, this genus belonged to the Sterculiaceae family, but has now been listed under the Malvaceae family in the APG III system. Naturally occurring in eastern Asia and China. In China, its wood is very much wanted for the manufacturing of musical instruments. One can make tea out of the roasted seeds. In the past, the foliage was dried and used the same way as tobacco. Tree with a lot of potential. Attracts many bees, butterflies and other insects.



Firmiana simplex

### simplex

(syn. Firmiana platanifolia, Sterculia platanifolia, Sterculia firmiana)



Forms a rising, oval-shaped, half-open crown, 12-15 m high and 5-6 m wide. Smooth, greenish stem with striking lenticels. Deciduous. Large 15-30 cm, hand-shaped, green foliage with 3 to 5 lobes that vary in depth. Pure yellow autumn colour. In June-July, white-green to cream-coloured flowers (7-9 cm) appear in panicles of 20-50 cm, which slightly smell after lime and chocolate. The panicles are positioned at the end of one-year-old branches. Then, soft pink to light orange coloured modified bracts surrounding the star-shaped capsules, appear. The capsules become larger and split open when ripe, allowing 2-3 seeds to dangle within the cluster. Grows on almost all soils, if not too heavy. Good wind resistance and very resistant to drought and heat. Requires a warm location. As specimen tree or multi-stem shrub.

## Ash

A genus that comprises around 50 species. Ashes are trees that, generally speaking, endure wind quite well, except for onshore winds. They grow best on fertile, damp soils with sufficient calcium and phosphorus that allow the root system to develop well. If there is enough moisture in the soil, they can also endure heat well. A young ash tree can tolerate quite a lot of shade, but at a later age prefers more light. With the exception of Fraxinus excelsior, ash trees are not very susceptible to urban air pollution. They also tolerate road salt reasonably well. After 30 years, ash trees bear fruit, but these fruits are not attractive in winter. Male clones and varieties of several species have been selected for roadside plantings. Ash trees have a taproot, but it splits up into several deep-growing roots, thus resulting in excellent anchorage. Up to its 40th year, ash trees have a smooth, grey bark, after that age the bark becomes more light grey and splits open into deep lengthwise cracks and shallow crosswise cracks creating a net-shaped pattern.

### americana White ash, American ash



Origin: Eastern part of North America. Introduced in Europe in 1723. In the homeland, a 35-40 m tall tree with a big, round to wide egg-shaped crown. In the Netherlands, 20-25 m high. Leaf odd-pinnate with 7-9 leaflets. Turns violet and yellow in autumn. Park tree.

### americana 'Autumn Applause'



Willett Wandell, Wandell's Nursery Inc., Urbana, Illinois, USA, 1975. Seedless selection that develops a wide egg-shaped, compact crown with upward growing branches. Height 12 m, width 7.5 m. Deep green leaf, smaller than is species-specific. Odd-pinnate, 7-9 leaflets. Deep burgundy to mahogany autumn colours, keeps its colours until frost sets in. Very hardy variety. Beautiful park, avenue and street tree, preferably on open green verges. For well-drained, slightly acidic to neutral, nutritious soil.

### americana 'Autumn Purple'<sup>®</sup> (syn. Fraxinus americana 'Juniger')



McKay Nursery Company, Waterloo, Wisconsin, USA, 1956. Introduced in Europe in 1977 by Boomkwekerij Udenhout. Develops a wide egg-shaped to wide oval rounded crown with more strongly inclining branches. Height 15-18 m, width 12-15 m. Fresh green leaf with strong veins, reddish-purple to chestnut-brown in autumn. Use like 'Autumn Applause' under identical soil and location factors. For wide street profiles.



Fraxinus americana

# Fraxinus

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Fraxinus americana 'Autumn Purple'



Fraxinus americana 'Skyline'



Fraxinus americana 'Skyline'

## americana 'Champaign County'



Willett Wandell, Wandell's Nursery Inc., Urbana, Illinois, USA, 1975. Introduced in Europe by Boomkwekerij Udenhout. A seedless selection, with a wide egg-shaped to wide ovate, rounded crown with inclining branches. Strong grower. Dense, compact crown. When planted in rows, this variety develops a uniform growth pattern. Height 15-18 m, width 15 m max. Leaf shiny, dark green and leathery. Buds bronze-coloured to ruby-red. Late autumn colour yellowish to purple. Not cultivated in Europe.

## americana 'Empire'



A very strong-growing variety with an initially wide and pyramidal crown shape, later a more rounded tree with a height of 14 m and a width of 12 m. Spectacular scarlet-red autumn colour that stays far into autumn. Resistant to cold and frosty winds. Beautiful park, avenue or street tree.

## americana var. microcarpa



Introduced in Europe in 1977 by Boomkwekerij Udenhout. In its juvenile stage, a rising and later a wider spreading tree with a big, closed and wide egg-shaped crown, but smaller than species-specific. Height up to 15 m. Dark green leaf. Leaf odd-pinnate with 5-7 leaflets. Autumn colours species-specific. Avenue and street tree for wider profiles.

## americana 'Royal Purple'



An American, male, seedless selection. Height 10-13 m, narrow rising. Width 6-10 m. Green leaf, turning splendid purple-red in autumn.

## americana 'Skyline'

(syn. Fraxinus americana 'Skycole')



Cole Nursery, Circleville, Ohio, USA, 1981. Selection that develops a rather wide ovate, symmetrical crown with narrow rounded top and upright branches. Straight trunk with central leader. Height 13 m, width 10 m. Develops a uniform crown and hardly requires pruning. Leaf shiny, fresh green, with an orange-red autumn colour. Park tree and particularly a stately avenue tree for wider street profiles. Soil type and planting locations similar to 'Autumn Applause'.

## angustifolia

(syn. Fraxinus oxycarpa)



Origin: Southern Europe, Asia Minor, Iran and Turkestan. Medium-sized tree with a height of 15-20 m, with a straight trunk and a relatively wide, usually round to ovate crown. The buds are small and brown. Shiny, dark green leaves. Park tree.

# Fraxinus

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## angustifolia 'Elegantissima'

(syn. Fraxinus excelsior 'Elegantissima', Fraxinus excelsior 'Angustifolia')



Germany, 1884. Slow-growing tree with a wide branching crown and a height of 8 m. Twigs thinner than species-specific. Fine-leaf ash, ornamental compound leaf with lancet-shaped leaflets, light green. Soft yellow autumn colouring. Park tree, sometimes a street tree on wider green verges. Hardly cultivated.

## angustifolia 'Monophylla'

(syn. Fraxinus oxycarpa 'Monophylla')



Germany, 1889. Wide pyramidal to almost spherical growth. Simple leaf, sometimes with 2 small side leaflets at the base. Relatively small (5-12 cm). The foliage is irregularly sharply serrated, bare and shiny dark green. Use as a park or street tree on wider green verges.

## angustifolia 'Pleinweg'



A selection from Rotterdam, the Netherlands. Develops into a robust tree shape with a straight trunk and inclining branches. Crown wide pyramidal to egg-shaped, half-open. Height 15 m, width 8 m. Leaves bright green with a yellow midrib. Bears no fruit. Avenue and street tree for wide streets in green banks and on paved surfaces. Prefers fertile, sandy soils rather than clay soils. Because of the danger of branches breaking off, do not plant in locations that are constantly exposed to strong winds.

## angustifolia 'Raywood'

(syn. Fraxinus oxycarpa 'Wollastonii', Fraxinus oxycarpa 'Raywood', Fraxinus oxycarpa 'Flame')



John Stanley Gardiner (1872-1946), Adelaide, Australia, 1910. Good-growing ash with a straight trunk and inclining branches. Crown closed, wide and with dense foliage. Compound leaf, light green, later shiny, deep green. Variable autumn colours from violet to flaming carmine red. Endures drier soils than the Common ash. Very good avenue and street tree. Tolerates paved surfaces reasonably well.

## biltmoreana

(syn. Fraxinus americana var. biltmoreana)



Origin: Eastern part of North America. Imported in Europe in 1900. Closely resembles Fraxinus americana. Height 15 m. Twigs more upward growing, resulting in a crown that is not as wide as the American ash. Dark, blackish-brown buds. Twigs and underside of the leaves yellowish-brown pilous. Purple-violet autumn colour. Park and avenue tree for wider profiles.



Fraxinus angustifolia 'Raywood'



Fraxinus angustifolia 'Raywood'

# Fraxinus

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Fraxinus excelsior

## excelsior Common ash



Indigenous to Europe, Asia Minor. Well-known, tall tree, height up to 25 m. Distinguishes itself from Southern European and American ashes by its black winter buds. Wide and open, ovate crown. Because of the variability of its shape, normally only selections are used for road plantings. The Common ash requires fertile, moist soils. Is often used in landscaping for windbreaks, roadside banks, deciduous forests, etc.

## excelsior 'Allgold'



The Netherlands, 1989. Selection from Fraxinus excelsior 'Aurea'. A slow-growing, yellow-leaf ash. Height 10-12 m, rising, half-open crown. Width 6-8 m. Twigs golden-yellow with closely grouped, black buds. Leaf is pinnate with 7-11 elliptical leaflets with a pointed top. The margin is slightly serrated with slightly upward points. Greenish-yellow foliage in summer and distinctively yellow in autumn. Bears no, or only a few fruits. Beautiful specimen tree.

## excelsior 'Altena'



Dutch Forestry Commission, the Netherlands, 1943. Nursery 't Westeinde, 's-Heer Abtskerke, Zeeland, the Netherlands, 1966. Selected from a road planting between the towns of Sleenwijk and Nieuwendijk, nearby the village Altena. Has a straight trunk and an almost straight leader. Moderately wide, pyramidal crown. Relatively fast grower. For road, avenue and street planting.

## excelsior 'Atlas'



Nursery 't Westeinde, 's-Heer Abtskerke, Zeeland, the Netherlands, 1943. Introduced in 1971. Selected from a road planting between the Dutch towns of Schoonewoerd and Zijderveld. Height up to 25 m. Has a straight trunk. Upright, rather slender, pyramidal to conic crown. Buds late. Bears very few fruits. For road, avenue and street planting.

## excelsior 'Diversifolia' One-leaf ash (syn. Fraxinus excelsior 'Monophylla')



UK, 1789. Straight trunk, inclining branches and a pyramidal crown. Height 15 m and up. Simple, bright green leaf. There are several varieties of this cultivar (good ones and bad ones). For that reason the Dutch General Inspection Service, Naktuinbouw, has selected the 'Den Bosch' (1960). This particular cultivar always yields good, uniform clones. Street and avenue tree for cities and villages.

## excelsior 'Eldik'



Selected by the Naktuinbouw in 1948, in culture since 1981. From seedling plantings in the Dutch town of Ochten. Has a completely straight trunk that has an excellent self-pruning capacity. Shape of the crown slightly pointier than 'Westhof's Glorie'. Leaves green, slightly wavy. For landscape planting in rural areas alongside roads and avenues.



Fraxinus excelsior 'Allgold'

# Fraxinus

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## excelsior 'Eureka'



P. van der Have, Zeeland, the Netherlands, 1924. Named in 1949. Rather coarse, fast-growing tree with a straight trunk. Height 20 m. Crown open, wide pyramidal. Leaf slightly shiny green. For planting along rural roads. Excellent avenue tree for larger roads in urban areas.

## excelsior 'Geessink'



Geessink Boomkwekerijen, Aalten, the Netherlands, 1955. Named in 1968. The mother tree is located in Lichtenvoorde, the Netherlands in a roadside planting. Excellent straight trunk, slightly twisting. Rather short, upward bending branches, resulting in a relatively narrow ovate crown. For roadside planting and urban avenues.

## excelsior 'Grift'



Naktuinbouw-selection, the Netherlands, 1983. The mother tree is in Ede, the Netherlands. Has a straight trunk and central leader. Crown shape similar to 'Eureka'. The leaf is lighter green than the leaf of 'Westhof's Glorie'. A healthy cultivar, suitable for road and avenue planting.

## excelsior 'Hessei'



Herman Albrecht Hesse (1852-1937), Weener, Germany, 1937. Height 15 m and a pyramidal crown. Closely resembles 'Diversifolia'. The leaf is wider and darker, dull green. Branches are more horizontal. Street and avenue tree. Highly susceptible to Pseudomonas syringae spp. savastanoi on soils that are too wet and/or poorly drained.

## excelsior 'Jaspidea' Golden ash



France, 1802. Wide pyramidal crown, height 15 m and up. Twigs yellow-striped, golden-yellow with black buds in winter. Buds yellow, later turning yellow-green and in autumn it is multi-coloured yellow to entirely yellow. Beautiful as a specimen in parks. Sometimes used as an avenue tree.

## excelsior 'Nana'

(syn. Fraxinus excelsior 'Globosa')



France, 1805. Short, spherical tree, top grafted. Ornamental, can be planted in narrow streets and on small squares.

## excelsior 'Pendula' Weeping ash



UK, 1725. Weeping variety of which the branches and twigs plunge towards the ground in large arches. Height 8-10 m. Is often cultivated as an arbour-tree. For parks, estates, etc.



Fraxinus excelsior 'Jaspidea'



Fraxinus excelsior 'Westhof's Glorie'

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Fraxinus ornus



Fraxinus ornus



Fraxinus ornus

## excelsior 'Westhof's Glorie'



Nursery Westhof, 's-Heer Abtskerke, the Netherlands, 1949. Robust tree with a height of 20 m and a straight trunk. Crown wide ovate, rather closed. Large, compound leaf, shiny, dark green. For roadside, avenue and street planting in cities and landscaping.

## holotricha 'Moraine'



John Siebenthaler, The Siebenthaler Company, Dayton, Ohio, USA, 1957. The cultivar name 'Moraine' is often used and means as much as: landscape shaped by a glacier or ice cap. 'Moraine' is a rising tree with a height of 10-15 m and a wide pyramidal crown. The Fraxinus holotricha species is native to the drier soils of Southeast Europe, which is a good indication for its soil requirements. Leaves bright green, rather large with a golden-yellow autumn colour. Endures drought and urban air pollution. Street and avenue tree in urban areas.

## mandshurica Manchurian ash



Occurs in Manchuria, mainly in the Amur Flats, Northeast China, Korea and Japan. Forms an oval to round crown, up to a height of 30 m. Odd-pinnate, matte green leaves, consisting of 7-11 sharply serrated leaflets that are 25-40 cm long. Golden-yellow autumn colouring. Blooms with small greenish-yellow flowers before the leaves emerge. It produces winged seeds that ripen from August to October. Very hardy. Sun and partial shade. Very drought resistant, also on heavy soils. In the past, this species was often confused with Fraxinus nigra.

## ornus Manna ash, Flowering ash



Origin: Southern Europe, Western Asia. Slow-growing, small to medium-sized tree, 6-8 m high, with a wide ovate to round crown. This species is very variable in growth and habit; for that reason a few varieties have been selected and issued by the Naktuinbouw for road plantings. After the leaves have emerged, its distinctive flowering starts with terminal and loose bunches, white to cream-white in colour and fragrant. Thrives on drier, calcareous and sandy soils. Often planted as an ornamental park tree.

## ornus 'Anita'

(syn. Fraxinus ornus 'Nijmegen')



Naktuinbouw, the Netherlands, 1981. Selection found in Nijmegen, the Netherlands. Because of its upward growing branches and twigs, this variety has a rather slender, pyramidal habit. Closely resembles Fraxinus ornus 'Arie Peters'. Dark green, shiny leaf. Flowers profusely in large bunches. Excellent street and avenue tree.

# Fraxinus

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## ornus 'Arie Peters'



Naktuinbouw, the Netherlands, 1973. Selection found in Nijmegen, the Netherlands. Rising tree with a straight trunk. Branches and twigs spreading to upright. Rather wide, round to wide ovate crown. Reasonably big, dark green leaf. Flowers very profusely in 10-15 cm wide bunches, evenly placed across the entire crown. May continue to flower during the summer up to September.

## ornus 'Lappen'



Baumschule Lappen, Nettetal, Germany. Variety with a more closed crown and a very nice upright habit. 8-10 m high. Dark green leaves with 5-7 leaflets. White flowers in large panicles. Location species-specific.

## ornus 'Louisa Lady'



Ton van den Oever, Haaren, the Netherlands. Slow growth with a final height up to 8-10 m. The final width is 4 m. Forms a straight, continuous central leader. The compound leaf has 5-7 leaflets, is dark green and turns beautiful yellow in autumn. The open, oval crown filters the sunlight beautifully. Flowers very profusely in May-June with large white cream-coloured lilac-like panicles with a wonderful aromatic fragrance immediately after the emerging leaf. 'Louisa Lady' only has a few soil requirements, but thrives on drier loamy, sandy soils. Good street tree, tolerates closed pavement. (Onshore)wind resistant and tolerates a reasonable amount of road salt.

## ornus 'Mecsek'



Mecsek Mountains, Hungary, 1980. Introduced by Boomkwekerij Udenhout. Our nursery found this variety in Hungary in 1980 and cultivated it here in the Netherlands. Its top grafted on a Fraxinus ornus standard and develops a spherical crown with shiny, dark green leaves. A welcome addition to the current range of small trees with spherical crowns. For small streets and avenues.

## ornus 'Obelisk'

(syn. Fraxinus ornus Paus Johannes-Paulus II')



P.L. van der Bom, Koninklijke Boomkwekerijen Alphons van der Bom, Oudenbosch, the Netherlands. Strongly upward columnar growth, 10-12 m high. Flowers very abundantly and produces winged nuts that stay until deep in the winter. Street and avenue tree for drier soils. Has a deep root system and endures paved surfaces well.

## pennsylvanica 'Aerial'

(syn. Fraxinus pennsylvanica 'Ledman')



Lake County Nursery, Madison, Ohio, USA, 1990. Hardy selection that develops a closed, columnar crown. Height 9-12 m, width approx. 20 % of the height. Splendid, shiny, fresh green foliage with yellow autumn colour. Very beautiful avenue and street tree for narrower profiles, which also endures drier soils, if not too poor.



Fraxinus ornus 'Louisa Lady'



Fraxinus ornus 'Mecsek'

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Fraxinus pennsylvanica 'Cimzam'



Fraxinus pennsylvanica 'Prairie Spire'

## pennsylvanica 'Bergeson'



Bergeson Nursery, Fertile, Minnesota, USA, 1981. Introduced in Europe in 1999 by Boomkwekerij Udenhout. Seedless selection. Develops a rising, rather wide ovate crown with tapered rounded top. Inclining branches. Very strong and fast grower with a straight trunk. Height up to 15 m, width 10 m max. Very hardy. Smaller leaf than the species, shiny green, yellow autumn colour. A recommended avenue and street tree in the USA for street profiles that are not too narrow. Requires well-drained soil. Can endure urban drought, but then prefers open soils.

## pennsylvanica 'Cimzam'

(syn. Fraxinus pennsylvanica 'Cimmaron'®)



Lake County Nursery, Madison, Ohio, USA, 1973. A seedless selection with an overwhelming autumn colouring as ornamental value, first wine-red, later brick-red to flaming orange. A powerful grower that forms a straight trunk. The final height is approximately 18 m with a width of 9-10 m. In its juvenile stage, the crown is narrow, later it becomes more oval. Characteristic for 'Cimzam' is the late-emerging leaf in spring. This ash stands out in wide streets and parks. No specific soil requirements and grows on both moist and wet soils. Highly recommended variety.

## pennsylvanica 'Newport'

(syn. Fraxinus pennsylvanica 'Bailey Select')



Bailey Nurseries, St. Paul, Minnesota, USA, 1980. Introduced in Europe in 1999 by Boomkwekerij Udenhout. A seedless selection. Develops an ovate-round crown. Height up to 15 m, width 13 m max. Very hardy. Light green leaf with yellow autumn colouring.

## pennsylvanica 'Patmore'



R.H. Patmore, Vegreville, Alberta, Canada, 1967. Selected from seedlings growing in the town of Vegreville. Marketed since 1976. Seedless selection with a wide egg-shaped, symmetrical crown, inclining branches and an ovate rounded top. Height 15-18 m, width 10-12 m. Very hardy. Leaves very shiny, dark green that turn yellow far into autumn. Avenue tree for wider street profiles. A uniform avenue tree with a very straight trunk and perfect branch development. Endures negative effects of the urban climate such as drought, heat and air pollution well. Soil requirements identical to those recommended for other pennsylvanica cultivars.

## pennsylvanica 'Prairie Spire'®

(syn. Fraxinus pennsylvanica 'Rugby')



Selection from the University of North Dakota, USA, 1991. Introduced in Europe by Boomkwekerij Udenhout. Fast-growing seedless selection, narrow pyramidal upright in its juvenile stage, becoming more oval as it matures. Dark green, shiny leaves, yellow autumn colouring. Tolerates negative effects of the urban climate such as drought, heat and air pollution well. Soil requirements identical to those recommended for other pennsylvanica cultivars.

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## pennsylvanica 'Summit' Green ash



Summit Nurseries, Stillwater, Minnesota, USA, 1957. A long proven selection. A rising tree with a straight trunk and central leader, height 14-16 m and width 5-7 m. Regular crown, very uniform in a row of avenue trees. Leaves green and shiny. Beautiful yellow autumn colour. Excellent avenue and street tree.

## pennsylvanica 'Urbanite'®



Willett Wandell, Wandell's Nursery Inc., Urbana, Illinois, USA, 1987. Introduced in Europe in 1999 by Boomkwekerij Udenhout. Selection that forms a wide pyramidal, dense crown because of its rather thickly growing inclining branches. The bark is decorative with angular bark ridges even in the juvenile stage. Height 15-18 m, width up to 12 m. Leathery leaf, very shiny, dark green with a greyish-white underside and a deep bronze-red autumn colour. Park and avenue tree for wide street profiles on dry soil that is not too poor.

## pennsylvanica 'Zundert'



Pierre Lombarts, Zundert, the Netherlands, 1957. Fraxinus pennsylvanica is native to the Northeast of the USA. In Amsterdam, dendrologist W.J. Hendriks selected a strongly growing cultivar from this species, which was distributed from Zundert, the Netherlands as the Fraxinus pennsylvanica 'Zundert'. Tall, well-growing, rising tree with a straight trunk, height 15-18 m. Widely spreading branches, a rather narrow crown at first, later a rather wide, thin but always regularly shaped crown. Never has fruit bunches. The large, pinnate leaf is matte-shiny deep green. Beautiful yellow autumn colouring. Excellent avenue and street tree for moist, fertile, open soils.

## xanthoxyloides var. dumosa



Origin: The Himalayas. Imported in Europe in 1865. By nature a 2 m high shrub. However, this variety is usually top grafted on a stem and then develops into a tree shape with a small, round crown with a height of 4-5 m. Thin twigs with brown buds. Relatively small, pinnate leaf with 5-9 leaflets of 5-15 mm. Flowers in bunches. Ornamental tree for use as a specimen. Under optimum conditions, it can also be used as a tree in narrow residential streets and on squares, although this will slow down its growth. Hardly cultivated.



Fraxinus pennsylvanica 'Summit'



Fraxinus pennsylvanica 'Summit'



## Maidenhair tree, Japanese nut tree

A monotypic genus. The German Engelbert Kaempfer (1651-1716) was the first European who saw a Ginkgo in 1693 in Japan. The first Ginkgo's were imported in Europe around 1730. The genus name is regarded a misspelling of the Japanese words *gin* and *kyou*, which mean silver apricot. The Ginkgo is what they call a living fossil. The first traces of Ginkgo were found more than 270 million years ago. Some Japanese nut trees survived the atomic bomb on Hiroshima in Japan. Because this tree after the bombing found the strength to grow, it is considered a symbol of life.

### biloba



Origin: China, but cultivated in Japan. Tree of 20-25 m high, variable crown shape. Usually conical. Fan-shaped leaves of 5-8 cm, as a rule two-lobed due to the incised top. Yellow autumn colour. Ginkgo biloba is dioecious, but usually monoecious at a later age. The fruit is a plum-shaped, nutty seed of 2-3 cm, hanging on a stem. Beautiful park tree, but certainly also a street and avenue tree for wider profiles. Tolerates paved surfaces well and is reasonably resistant to urban air pollution. Very wind resistant due to its deep root system. Does not tolerate soils that are too wet.

### biloba 'Autumn Gold'



Maunsell Van Rensselaer (1897-1972), Saratoga Horticultural Foundation, Saratoga, California, USA, 1956. Seedless selection. Height 10-15 m. Width 10 m. Pyramidal growth, not as narrow as 'Princeton Sentry'. Beautiful golden yellow autumn colouring.

### biloba 'Fastigiata'



Kew Gardens, London, UK, 1876. A narrow columnar Ginkgo. Height up to 15 m. Width up to approximately 7 m. Male selection. Very suitable for somewhat narrower street profiles. Nice, uniform, yellow autumn colouring. Sheds its leaves rather suddenly in autumn leaving behind an attractive yellow carpet underneath the tree.

### biloba 'Fastigiata Blagon'



Pépinières Derly, Blagon, France, 1980. A narrow, slow-growing columnar and very compact selection. Beautiful golden-yellow autumn colouring. Ideal for narrower streets.



Ginkgo biloba

### biloba 'Globus'

(syn. Ginkgo biloba 'Barabits Strzada')



Elmer Barabits, Barabits Nursery, Hungary, 1959. Grafted variety. Forms a very dense shrub, sometimes as a tree, top grafted. Forms a round, robust crown. Dark green leaves, larger than the species. Yellow autumn colouring. Suitable for small gardens.

### biloba 'Horizontalis'



Botanical Garden, Leiden, the Netherlands. Leaf species-specific. Usually cultivated as a top grafted tree. Horizontally hanging branches. Ideal for smaller gardens.

### biloba 'Menhir'



Jan Willem Wezelenburg, Hazerswoude, the Netherlands, 1996. Narrow upright, very slow-growing selection. Has smaller leaves than the species, blue-green in colour. Yellow autumn colouring. Very suitable for narrower street profiles and small gardens.

### biloba 'Obelisk'



A very narrow, columnar shaped Ginkgo. Height up to 10 m, width approx. 2 m. A male selection. Leaf is somewhat smaller than the species. Very suitable for smaller street profiles. Beautiful, uniform yellow autumn colouring. Leaves fall simultaneously, leaving behind an attractive yellow carpet underneath the tree. Grows on all soil types.

### biloba 'Pendula'



Charles van Geert Nursery, Kalmthout, Belgium, 1856. On the market since 1862. The former nursery of van Geert was bought in 1952 by Georges and Robert de Belder who created a private botanical garden on this nursery site, which later became known as Arboretum Kalmthout. Leaf species-specific. Resembles 'Horizontalis' but weeps slightly more at a later age. Male form that is top grafted. Buds late and has a bright yellow autumn colouring.

### biloba 'Princeton Sentry'

(syn. Ginkgo biloba 'PNI2720')



Princeton Nurseries, Kingston, New Jersey, USA, 1967. A narrow-growing, columnar selection. Height 15-20 m. Male selection that bears no fruits. Leaves dark green. Yellow autumn colouring. Ideal for street planting.



Ginkgo biloba



Ginkgo biloba 'Obelisk'

# Ginkgo

fam. Ginkgoaceae



Ginkgo biloba 'Obelisk'



Ginkgo biloba 'Saratoga'



Ginkgo biloba 'Saratoga'

## biloba 'Saratoga'



Maunsell van Rensselaer (1897-1972), Saratoga Horticultural Foundation, Saratoga, California, USA, 1975. Wide pyramidal growth up to 20 m. The fan-shaped leaves are deeply incised, 10 cm in size. Yellow autumn colouring. Inconspicuous, green-yellow sterile flowers in April-May. Tolerates paving. Grows on all soils. Very hardy, resistant to pollution.

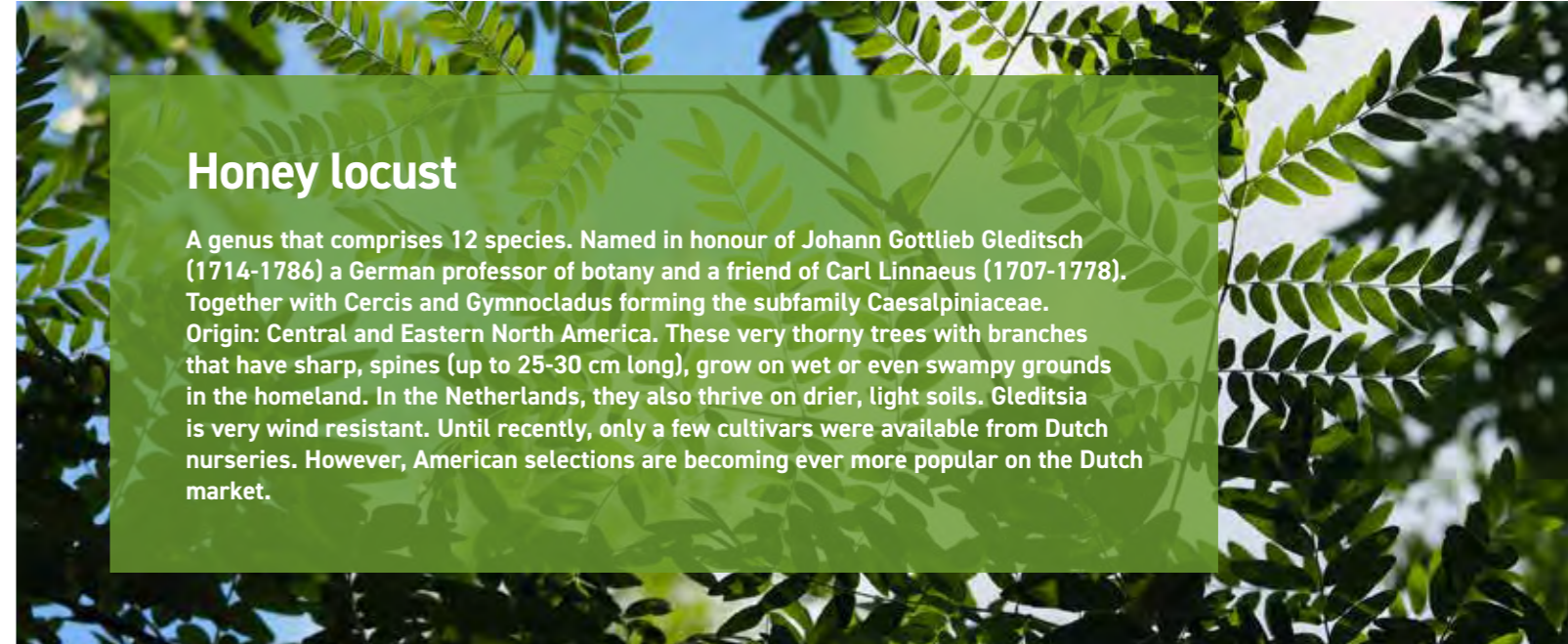
## biloba 'Tremonia' ♂



Johann Gerd Krüssmann (1910-1980), Botanical Garden Rombergpark, Dortmund, Germany, 1930. A narrow growing, upright selection. Height 10-15 m. Remains smaller than 'Princeton Sentry'. Fan-shaped, dark green leaves and dark yellow autumn colouring. Male selection that bears no fruits. Ideal for street planting.

# Gleditsia

fam. Fabaceae



## Honey locust

A genus that comprises 12 species. Named in honour of Johann Gottlieb Gleditsch (1714-1786) a German professor of botany and a friend of Carl Linnaeus (1707-1778). Together with Cercis and Gymnocladus forming the subfamily Caesalpinieae. Origin: Central and Eastern North America. These very thorny trees with branches that have sharp, spines (up to 25-30 cm long), grow on wet or even swampy grounds in the homeland. In the Netherlands, they also thrive on drier, light soils. Gleditsia is very wind resistant. Until recently, only a few cultivars were available from Dutch nurseries. However, American selections are becoming ever more popular on the Dutch market.

## triacanthos



Rather fast-growing tree with a height of 15-20 m, with a wide, loosely branched crown. Very thorny, auburn branches. Leaf fresh green, pinnately or bipinnately compound, up to 20 cm long. Yellow autumn colour. White, butterfly flowers in bunches, May-June. Pods with lengths up to 30 cm, twisted in a crescent shape, yellow-green and auburn to purple-brown when mature. The pods are retained on the tree deep into winter. Requires extra attention during its early growth in order to obtain a central leader. Park, avenue and street tree, also tolerates paved surfaces.

## triacanthos 'Elegantissima'



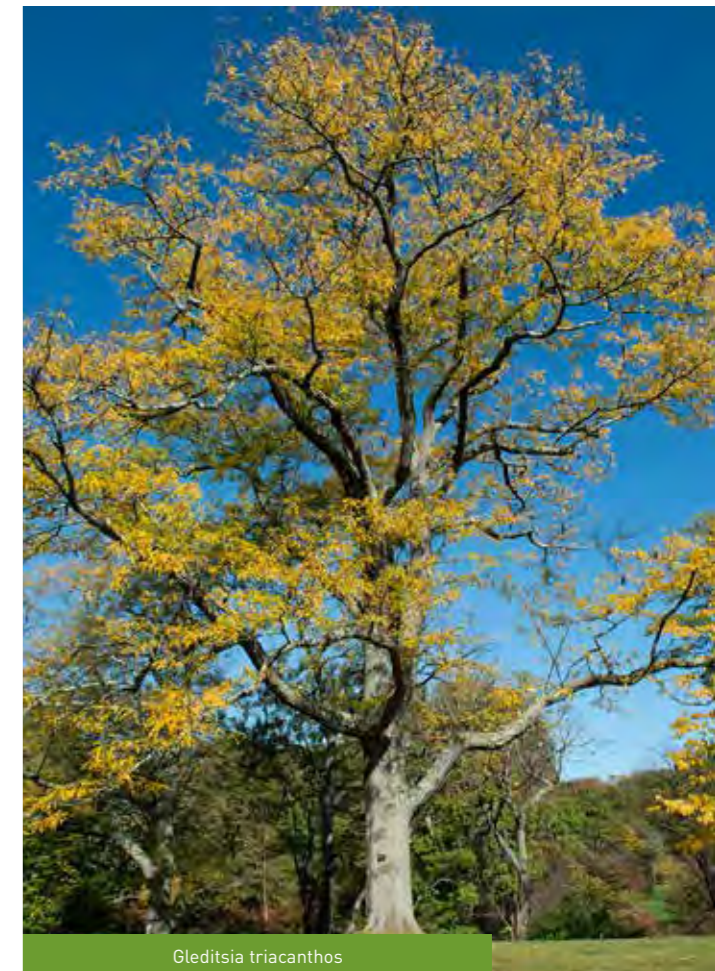
Charles Breton, Orléans, France, 1880. Generally a high and narrow rising, thornless shrub with a height of 4-6 m; rarely cultivated in a tree shape. Smaller leaves than the species, primarily pinnate, slightly darker green. Beautiful specimen shrub on open locations in parks or larger gardens.

## triacanthos 'Imperial'®

(syn. Gleditsia triacanthos 'Impcole')



David Barrett Cole, Cole Nursery, Painesville, Ohio, USA, 1957. Selection with a round to slightly ovate, compact, thornless crown. Height 10-12 m, width 5-6 m. Uniform shape. Very straight trunk. Fruits 30-40 cm. Beautiful street and avenue tree of moderate height and size.



Gleditsia triacanthos



Gleditsia triacanthos



Gleditsia triacanthos 'Rubylace'



Gleditsia triacanthos 'Skyline'

## triacanthos var. inermis



A 'low-thorn' variety, cultivated since 1789. In terms of habit and growth identical to the species. Height 10-12 m. Yellow autumn colouring. Pods with lengths up to 45 cm, twisted in a crescent shape. Mostly used as an avenue and street tree, because the large thorns of the species can be dangerous and a nuisance.

## triacanthos 'Moraine'



The Siebenthaler Company, Dayton, Ohio, USA, 1949. The first American selection of the Honey locust. Has been considered one of the best street trees ever since. Has a wide-ovate, irregular, spreading crown with rounded crown top. Height 12-15 m, width 7-10 m. Is susceptible to storms because of its wide crown, so it should be planted in streets and avenues that are more sheltered from the wind. Dark brown twigs, without thorns. Fine, bright green small leaves, golden-yellow autumn colour. Inconspicuous flowers, generally fruitless. Beautiful park tree, also an avenue tree for wider profiles on wind-sheltered locations, preferably on wide strips of grass. Endures urban air pollution reasonably well. Develops very long shoots in its juvenile stage, so some summer pruning is recommended.

## triacanthos 'Rubylace'



William Flemer, Princeton Nurseries, Kingston, New Jersey, USA, 1961. Small tree with wide upright growth. Young leaves are auburn, later bronze-green. Often top grafted. Height 6-8 m. Cultivar without thorns. Yellow-green pods with lengths up to 20 cm, twisted into a crescent shape, turning auburn when ripe. Park tree.

## triacanthos 'Shademaster'®



Princeton Nurseries, Kingston, New Jersey, USA, 1956. Selection without thorns with a wide rising crown. Height 20-25 m. Symmetrical crown. Dark green leaf. No fruits. Beautiful yellow autumn colouring. Park and street tree.

## triacanthos 'Skyline'®

(syn. Gleditsia triacanthos 'Arrowhead')



Cole Nursery, Painesville, Ohio, USA, 1957. Selection without thorns with a relatively well-protruding central leader and rather pyramidal and compact growth. Leaf dark green. Relatively wind resistant avenue and street tree. Rarely bears fruits. Beautiful yellow autumn colouring.

## triacanthos 'Spectrum'

(syn. Gleditsia triacanthos 'Speczam')



Lake County Nursery, Perry, Ohio, USA. A selection with a more upright habit than 'Sunburst'. Height 6-12 m. Cultivar without thorns. Capricious growth. Has bright golden-yellow leaves all through summer, contrary to 'Sunburst', which colours green after the yellow young shoots have developed. Park and avenue tree.

## triacanthos 'Street Keeper'®

(syn. Gleditsia triacanthos 'Draves')



Brotzman's Nursery, Madison, Ohio, USA, 2009. Selection found by Tom Draves near New York. Tight, light pyramidal upright shape. Height 10-12 m, width 4-5 m. Very dark green, glossy leaves with a fine structure. Forms a continuous central leader. Thornless selection. Yellow autumn colouring. Very suitable for narrow streets.

## triacanthos 'Sunburst'®

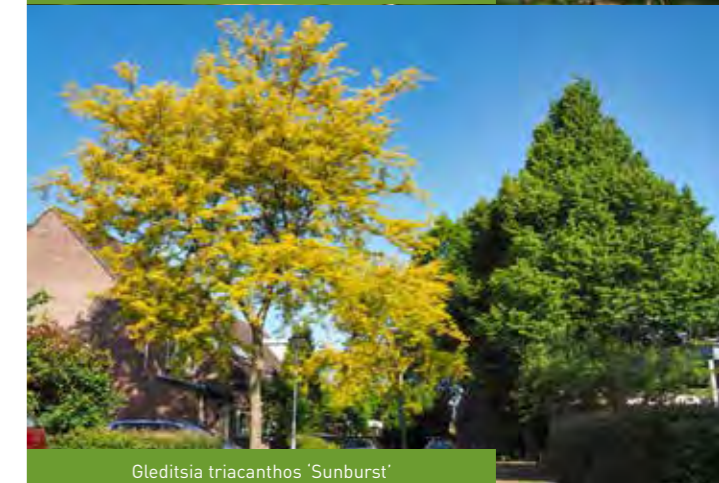
(syn. Gleditsia triacanthos 'Suncole')



Cole Nursery, Painesville, Ohio, USA, 1947. Patented in 1954. Grows less strongly than the species. Moderately tall tree, height 5-10 m. Wide pyramidal, in its juvenile stage a strongly spreading crown. Cultivar without thorns. During its juvenile stage, the development of a protruding leader should be monitored. Small, delicate leaf, golden-yellow at the ends of the shoots. The second flush is again golden-yellow. No characteristic pods. Park tree, partly an avenue tree on green verges and in wind-sheltered locations. Beautiful open habit (transparent).



Gleditsia triacanthos 'Skyline'



Gleditsia triacanthos 'Sunburst'



Gleditsia triacanthos 'Sunburst'

# Gymnocladus

fam. Fabaceae

# Halesia

fam. Styracaceae

## Coffee tree

A genus that comprises 3 species: *Gymnocladus burmanicus*, *chinensis* and *dioica*. The genus is closely related to *Gleditsia* and *Cercis*, together forming the subfamily *Caesalpinioideae*. The genus name is derived from the Greek words: *gymnos*, naked and *klados*, branches. *Gymnocladus* was first introduced in Europe in 1734 by John Bartram (1699-1777), an American botanist. Carl Linnaeus (1707-1778) esteemed Bartram as the greatest "natural botanist" in the world. Slowly growing shrub or tree that forms a loose crown. In the USA, its common name Coffee tree refers to the coffee-like beverage that can be made out of roasted *Gymnocladus* seeds.

**dioica** Kentucky coffee tree



Origin: Central and Eastern USA. The Greek word: *dioica* means dioecious. 15-20 m high tree with a loose, wide and capricious, transparent crown. Slow grower. Thick, irregular branches. Young twigs are grey to greyish blue. Large, paripinnate leaf, 80-100 cm long, dark green. Yellow autumn colouring. Flowers in inconspicuous, greenish, slightly suspending plumes with a length of approx. 25 cm. After flowering, the tree develops beautiful husky pods with lengths of approximately 20-30 cm. Park tree for well-drained soils.



*Gymnocladus dioica*

*Gymnocladus dioica*

## Silverbell, Snowdrop tree

A genus that comprises 3 species originating from China and North America. *Halesia* is named after Stephen Hales (1677-1761) an 18th century English scientist. Occurring as a large shrub or tree. Within the dendrology there are many discussions: do *Halesia carolina* and *Halesia monticola* differ enough from each other in order to consider them as 2 separate species? In 1756, *Halesia carolina* was allegedly imported in Europe, whereas *Halesia monticola* seemed to be imported in 1897. When we look at the literature, one can discover the following visible characteristics between the 2 species: *Halesia monticola* has a peeling bark, *Halesia carolina* does not peel. The latter has hairy foliage, *Halesia monticola* has no hairy leaves. At present, *Halesia monticola* is considered a variety of *Halesia carolina*. *Halesia carolina* grows at 800-900 m above sea level, and above that height, we speak of *Halesia carolina* var. *monticola*. Contrary to most species, this in the mountains growing variety is much bigger than *Halesia carolina*. Some other cultivars are marketed in North America.

**carolina** Carolina silverbell  
(syn. *Halesia tetraptera*)



Origin: Southeastern part of North America. Usually a very large shrub, can also be cultivated as a small tree on a short standard. In that case its height is 6-10 m. Initially, upright growth, later strongly spreading branches that develop a wide, screen-like crown. The bark of the trunk and older branches splits into small, flat flaking scales. Ovate leaves, 5-10 cm long, fresh green. Flowers very profusely in May-June across great lengths of the twigs. Bell-shaped, long-stalked pure white flowers with a length of 10-15 mm, in suspending bunches of 35 flowers. Fruits 25-35 mm long, oval, with 4-sided wings, suspended from thin, green stalks, dull grey to brown when mature. Beautiful park tree for warm locations on moist, fertile soils.

**carolina var. monticola** Mountain silverbell



Height 20-25 m, with a very wide spreading crown. Bark peels off in large plates. Inflorescence similar to *Halesia carolina*, but with pure white bell-shaped flowers that are twice as big. Flower stalk is shorter and barer than *Halesia carolina*. A beautiful tree or shrub for larger parks, striking because of its abundant and attractive inflorescence.

**monticola var. vestita**



Southeastern USA. *Halesia monticola* var. *vestita* stays smaller than the species: 8-10 m high and 5-6 m wide. Blooms with light pink flowers, 3-5 together in May, already at an early age. Very hardy. Beautiful garden and park tree.



*Halesia monticola*

# Heptacodium

fam. Caprifoliaceae

## Seven son flower

A monotypic genus. Heptacodium was discovered in China in 1907 by the English botanist Ernest Henry Wilson (1876-1930). After its re-introduction by the US Arnold Arboretum in 1980, Heptacodium has become increasingly more popular over the past years. Contrarily to what the name suggests, there are only 6 flowers in each separate panicle, and not 7 (hepta). The English name Seven son flower is translated from Standard Chinese: *qi zi hua*.

### **miconioides**

(syn. Heptacodium jasminioides)



Origin: China. Forms a rising shrub or small tree shape up to 8 m high. Has rather fragile, scaling branches and hairy light brown twigs. Elongated, ovate, opposed, bright green leaves, 8-16 cm with 3 clear main veins. Colours yellow-purple in autumn. Cream-white flowers in panicles of 6, that later turn red. Smells after Jasmin. Flowers from end August until October. Frequently visited by bees, butterflies and other insects. After blossoming, pentagonal purple-red fruits of 1.5 cm appear. This species prefers a sunny location on nutritious, well-drained soil. Is very hardy and tolerant to road salt. Exquisite as a specimen or small tree.

### **miconioides 'Minhep'**

(syn. Heptacodium miconioides 'Tianshan')



Minier Plants, Beaufort-en-Anjou, France, 2014. This cultivar has a more compact and uniform growth than Heptacodium miconioides. For the rest species-specific.

Heptacodium miconioides

Heptacodium miconioides

Heptacodium miconioides

# Hibiscus

fam. Malvaceae

## Rose of Sharon

A genus that comprises around 200 species, mainly originating in tropical and temperate regions. Hibiscus flowers from July to October, making it an interesting tree worthwhile planting. It is highly resistant to heat and drought. When cultivated as a standard clear stem tree, it is very applicable in small gardens and smaller streets and lanes.



Hibiscus syriacus

### syriacus



Indigenous to China. Imported in Europe in 1596. By nature a tall, pyramidal growing shrub with rising branches and twigs, growing wider towards the crown. Is presently also cultivated on a standard; in that case its height is 4-6 m, width 2 m max. Leaves variable in size, 5-9 cm long, usually 3-lobed, fresh green. Flowers from mid-July until late summer with single, axillary wide-infundibular flowers of 6-10 cm, violet-coloured. However, there is a relatively wide range available with single, semi-double or filled flowers in various hues of white, pinkish-red, violet pink, lilac-blue, blue and carmine red. After flowering, beautiful fruit husks appear. Profusely flowering tree for warm sunny locations on rich, nutritious soils. For gardens, parks and public gardens.

### syriacus 'Hamabo'



Japan, 1935. Blooms with single, light pink to almost white flowers with a dark red heart. The flowers stand solitary in the leaf axils of the upper leaves on young shoots. Flowers in abundance.

### syriacus 'Oiseau Bleu'

(syn. Hibiscus syriacus 'Blue Bird')



Croix Nursery, France, 1958. Blooms with single, violet-blue flowers with a purplish-red heart. The flowers stand solitary in the leaf axils of the upper leaves on young shoots. Flowers in abundance and very hardy.

# Hibiscus

fam. Malvaceae

### syriacus 'Flower Tower Purple'

(syn. Hibiscus syriacus 'Gandini Santiago' PBR)



Van Aart Boomkwekerijen, Oudenbosch, the Netherlands. A selection from seedlings found by Francisco Gandini in Girona, Spain, 2002. Forms a small, upright crown. Height max 5 m. Light green, 3-lobed leaves. Blooms from July until October with big, pink flowers with a red heart, which exudes in points to the outside of the flower. The first flowering is with double flowers, thereafter single flowers appear. Very resistant to heat and drought. Grows on almost all soils, but preferably not on soils that are too wet in winter. Very suitable for small gardens, residential areas and small streets.

### syriacus 'Flower Tower White'

(syn. Hibiscus syriacus 'Gandini Van Aert' PBR)



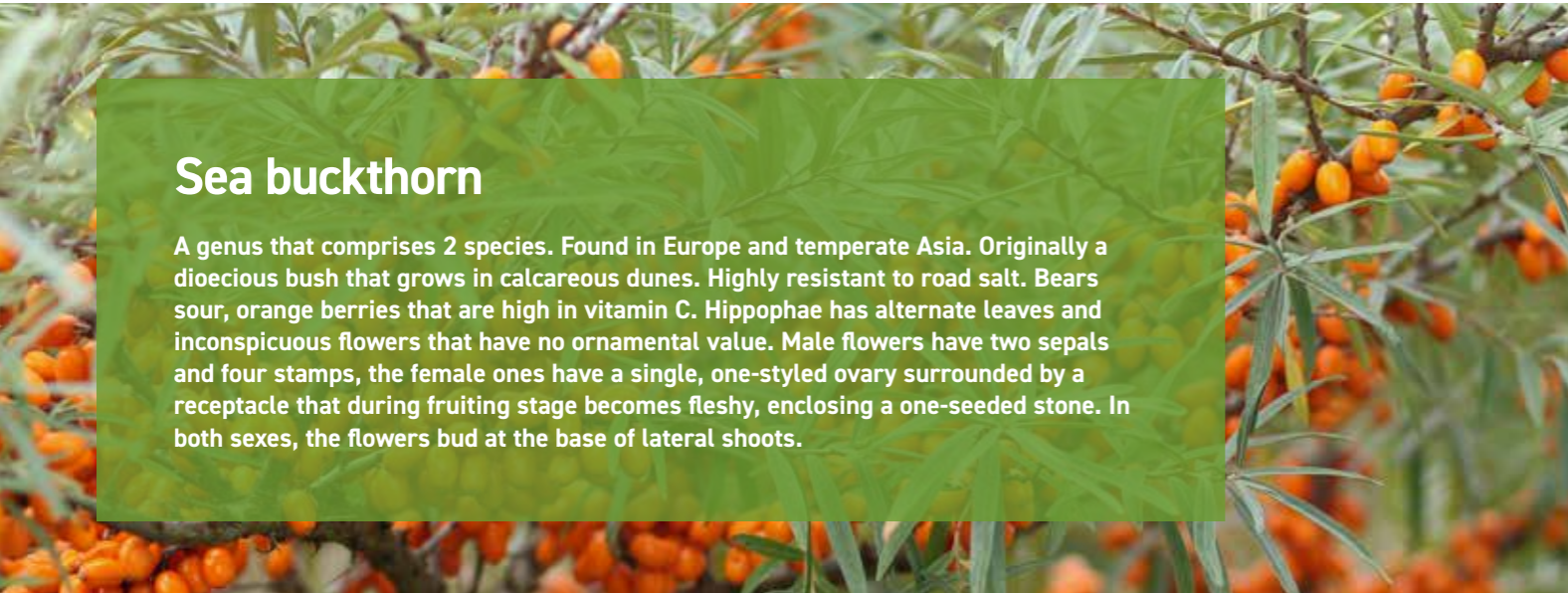
Van Aart Boomkwekerijen, Oudenbosch, the Netherlands. Forms a small, upright crown. Height max 5 m. Light green, 3-lobed leaves. Blooms from July until October with big, pure white flowers with a red heart which exudes in points to the outside of the flower. The first flowering is with double flowers, thereafter single flowers appear. Very resistant to heat and drought. Grows on almost all soils, but preferably not on soils that are too wet in winter. Very suitable for small gardens, residential areas and small streets.



Hibiscus syriacus

# Hippophae

fam. Elaeagnaceae



## Sea buckthorn

A genus that comprises 2 species. Found in Europe and temperate Asia. Originally a dioecious bush that grows in calcareous dunes. Highly resistant to road salt. Bears sour, orange berries that are high in vitamin C. Hippophae has alternate leaves and inconspicuous flowers that have no ornamental value. Male flowers have two sepals and four stamens, the female ones have a single, one-styled ovary surrounded by a receptacle that during fruiting stage becomes fleshy, enclosing a one-seeded stone. In both sexes, the flowers bud at the base of lateral shoots.



Hippophae salicifolia 'Robert'



Hippophae salicifolia 'Robert'

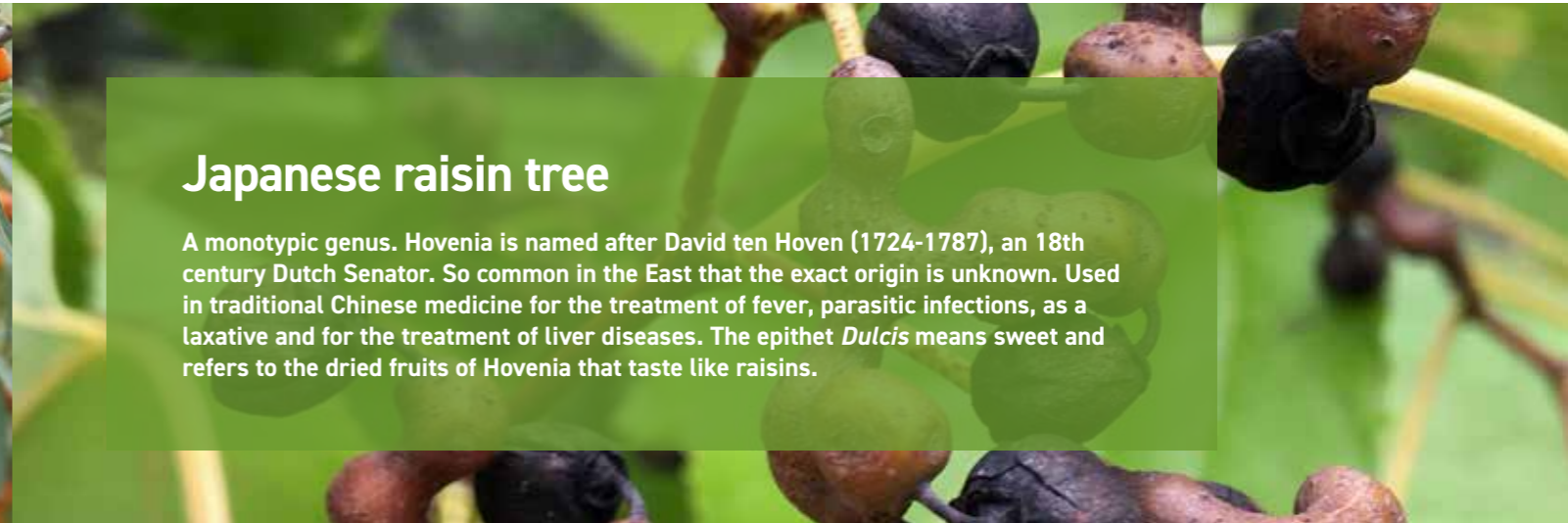
### salicifolia 'Robert'



Discovered in the Arboretum of Kalmthout, Belgium. Named after Mr. Robert de Belder (1921-1995), who was the former owner of the arboretum. Normally, this species grows into a sizeable shrub shape, but this selection grows into a small tree shape with a height of 6-10 m. Capricious growth, irregularly upright with a round, open crown and pendulous branches. Elongated leaves with an olive to dark green top and almost white, silvery underside. When maturing, old bark becomes rough and peels off in flakes. A vigorous hardy tree that can endure temperatures up to -30 degrees Celsius and is resistant to heat and drought. Perfect as a maritime tree for coastal areas. It thrives on dry, poor and slightly calcareous soils.

# Hovenia

fam. Rhamnaceae



## Japanese raisin tree

A monotypic genus. Hovenia is named after David ten Hoven (1724-1787), an 18th century Dutch Senator. So common in the East that the exact origin is unknown. Used in traditional Chinese medicine for the treatment of fever, parasitic infections, as a laxative and for the treatment of liver diseases. The epithet *Dulcis* means sweet and refers to the dried fruits of Hovenia that taste like raisins.

**dulcis** Japanese raisin tree, Oriental raisin tree (syn. *Hovenia inequalis*, *Hovenia acerba*)



Indigenous to East Asia and West China up to the Himalayas, where it can grow up to 20-30 m. Introduced in Europe in 1812. Shrub or small tree in the Netherlands, 7-8 m. Heart-shaped, dark green, shiny leaves and a long petiole. Yellow autumn colouring. Blooms with small, white to cream-colored, slightly fragrant, hermaphroditic flowers in July-August. Attracts many bees and insects. The flower stalks resemble raisins, which are very sweet and edible. Marginally susceptible to fungal diseases. Requires well-drained soils, does not survive on soils that are too wet.



Hovenia dulcis

# Idesia

fam. Salicaceae

# Ilex

fam. Aquifoliaceae

## Ligiri, Wonder tree

A monotypic genus. The generic name commemorates Eberhard Isbrand Ides (1657-1708), a Danish traveller and diplomat who travelled to China as a Russian Ambassador. Carl Johann Maximowicz (1827-1891), a Russian botanist discovered the species in Japan in 1860. It was introduced in Europe in 1864. *Idesia* naturally grows in mixed forests at 400 up to 3000 m above sea level. In that range, it can reach a height of 20 m. The large heart-shaped leaves stand out, because of their size and the 10-15 cm long red-coloured petiole. Several varieties are known: *Idesia polycarpa* var. *vestita* for example, has leaves that are hairy on the underside. *Idesia polycarpa* var. *fujianensis* also has hairy leaves, but they are smaller and have a shorter petiole. *Idesia* does not tolerate pruning.

## polycarpa



Origin: China, Korea, Taiwan and Japan. Introduced in Europe in 1864. Small tree or high shrub. Wide, cone-shaped habit. Light grey trunk and branches. Leaves ovate, long-stalked, large, bluish-grey at the bottom. Golden-yellow autumn colouring. Flowers in May-June, with yellow-green suspending panicles with a length of 10-20 cm. From September-October, female trees have orange strawberry-like berries. This dioecious tree grows best on slightly acidic soils in a sheltered location. Beautiful specimen tree.



*Idesia polycarpa*



*Idesia polycarpa*

## Holly

A genus that comprises around 400 species. *Ilex* is the only genus in the Aquifoliaceae family. Occurring as shrubs and trees throughout the world. *Ilex* is best known because it is evergreen. It also is a dioecious plant: male and female plants are required for reproduction. In Europe, around 20 species occur. It is the only indigenous, evergreen and deciduous tree in our region.

## aquifolium Common, English, European or Christmas holly



Pyramidal, very slow-growing shrub or tree, 10-12 m high and 3-5 m wide. Propagation from seed, resulting in different forms of growth. Leaves lanceolate to egg-shaped 3-8 cm long, leathery and irregularly wavy. Dark green and glossy on top with a light green underside. The leaves have thorns up to a height of approximately 2 cm. Dioecious species, blooms in May-June with small, white flowers. Poisonous red berries are retained on the tree for a very long time. Deep rooted. Prefers rich, slightly acidic to alkaline soil. Very resistant to air pollution.

## aquifolium 'Alaska' ♀



Nissen, Wuppertal, Germany, 1960. Smaller and more compact growing than the species. Height 4-5 m, width 2-3 m. Hardy. The slightly narrower, dark green leaves are quite thorny. A self-pollinating female form that bears many red-coloured berries, which are retained for a long time. Thrives in a shady location.

## aquifolium 'J.C. van Tol' ♀

(syn. *Ilex polycarpa*)



J.C. Van Tol, Boskoop, the Netherlands, 1895. Introduced in 1904. Large shrub or small tree, naturally a narrow, compact upright form. Height 6-8 m, width 2.5-4 m. Leaves not or hardly serrated. Leaves emerge light pink on the sunny side. Shiny green. Blooms in May with ivory-white flowers that have an attractive fragrance. A self-pollinating female form that produces large, orange-red berries, high yielding and produces many berries under stress. Beautiful evergreen specimen.



*Ilex aquifolium*



fam. Aquifoliaceae



Ilex x aquipernyi 'Dragon Lady'



Ilex 'Nellie R. Stevens'



Ilex 'Nellie R. Stevens'

**x aquipernyi 'Dragon Lady'** ♀  
(Ilex aquifolium x Ilex pernyi)  
(syn. Ilex x aquipernyi 'Meschick')



Kathleen Kellogg Meserve (1906-1999), St. James, Long Island, New York, USA, 1983. Final height up to 5 m, width at most 1.5 m. A small-leaf holly that can be cultivated as a tree for urban areas. Very hardy and evergreen. Leaves are small, slightly twisted, dark green and very prickly. Nice red sheen on the new leaf. The most important plus point is the very good central leader. Female species. Ilex meserveae 'Blue Stallion' and Ilex meserveae 'Blue Prince' are good pollinators. If pollinators are in the area, this Ilex will bear small, red berries after the white flowering in May. Because of its narrow and slow growth, it is very suitable for narrow streets, green verges or flower boxes. Moreover, it is very tolerant to air pollution.

**x meserveae 'Blue Stallion'** ♂  
(syn. Ilex x meserveae 'Mesan')



Kathleen Kellogg Meserve (1906-1999), St. James, Long Island, New York, USA, 1982. Narrow upright shrub or small tree. Height 4-5 m, width 2-3 m. The young twigs are purple-coloured. Very dark green, narrow, shiny leaves. Red berries. Prefers a location in full sun or partial shade. For rich and slightly acidic soils.

**x meserveae 'Goliath'** ♀



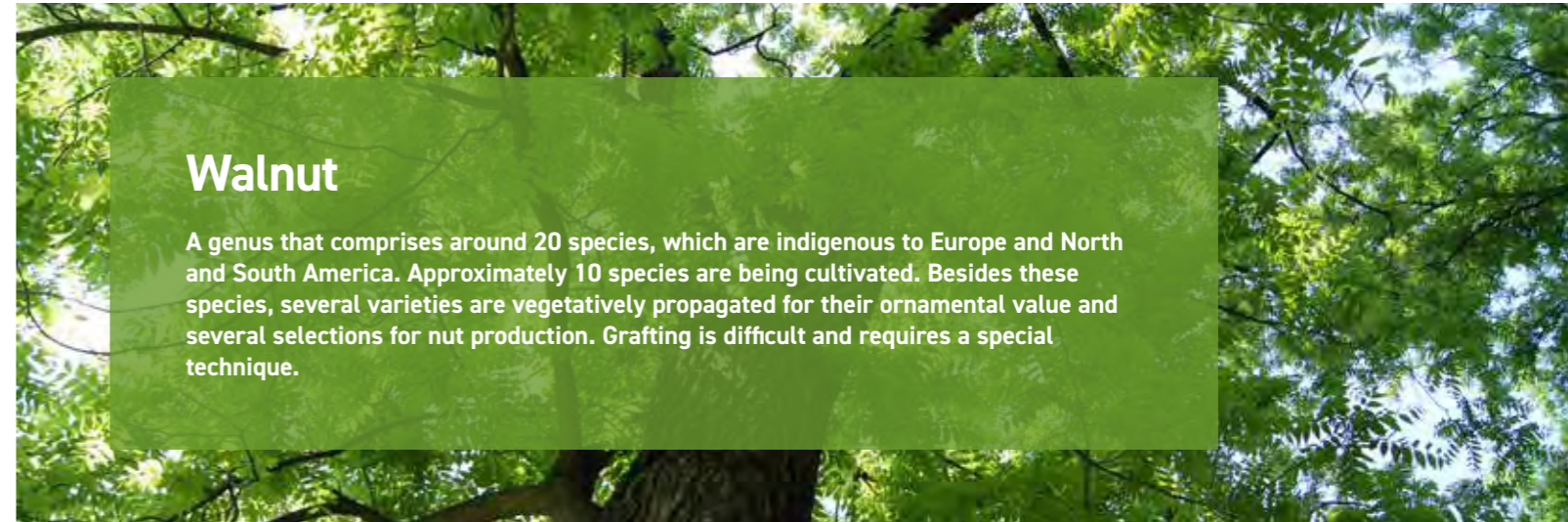
McLean Nurseries, Towson, Maryland, USA, 1970. Height 6-7 m, width 4-5 m. Very hardy fast-growing holly. The dark green, shiny leaf is slightly serrated. Red berries. Prefers a location in full sun or partial shade. For rich and slightly acidic soils.

**'Nellie R. Stevens'** ♀  
(Ilex aquifolium x Ilex cornuta)  
(syn. Ilex mutchagara 'Nellie Stevens')



Nellie Robinson Stevens (1866-1942), a headteacher in Oxford, Maryland, USA collected seeds from open-pollinated Ilex cornuta in the US National Arboretum in Washington in 1900. She planted these seeds in her own garden. After she passed away, nurseryman Gustav van Lennep bought her estate and noticed the plants and introduced them. This female holly is fast-growing. Lends itself very well to the cultivation of small standard trees. Forms an evergreen, wide pyramidal crown. Shiny green leaves that are slightly serrated. White flowers in May-June, followed by an abundance of small, orange berries. Requires humus-rich, slightly calcareous soils. Does not tolerate wet soils. Very hardy and with a high drought resistance. Grows in sun, partial shade and shade.

fam. Juglandaceae



## Walnut

A genus that comprises around 20 species, which are indigenous to Europe and North and South America. Approximately 10 species are being cultivated. Besides these species, several varieties are vegetatively propagated for their ornamental value and several selections for nut production. Grafting is difficult and requires a special technique.

**ailantifolia**  
(syn. Juglans cordiformis var. ailantifolia)



Origin: Japan. Introduced in Europe in 1859. Tall tree, 15-20 m high, with a beautiful wide crown. Leaf resembles Ailanthus, pinnate, 11 to 17 leaves (bluntly serrated). The male catkins are 15 to 30 cm long. Ball-shaped to egg-shaped fruits with sticky hairs. The nuts are approximately 3 cm long. Beautiful specimen tree. Very rare and hardly cultivated.

**nigra** Black walnut, American walnut



Origin: Central and Eastern part of the USA. Introduced in Europe in 1629. Tall tree with a height of 20-30 m, usually with protruding leader and a dark, deeply striated bark. Crown wide pyramidal, later spreading wider, but its shape is more consistent than Juglans regia. Up to 50 cm long pinnate leaf, 15 to 23 ever smaller leaflets. Light timber. Requires well-drained fertile, calcareous soil. Needs less damp soil than Juglans regia. Beautiful park tree, but also an avenue tree on wide green verges. For landscaping, Juglans regia is preferred.

**regia** Common walnut, English walnut, Persian walnut



Origin: South Eastern part of Europe. Cultivated in almost all Central and Western Europe since Roman times. Tall tree with a height up to 25 m with a wide and low crown. Non-protruding trunk. More or less round, irregular crown. Leaf odd-pinnate, 25 cm long, brownish-green when budding. Produces the well-known edible walnuts. Requires calcareous, damp, open, loamy or clayish soil that allows a good development of the root system. (Trans)plant in early autumn or late spring. Prune when the leaf starts to emerge. In the walnut-producing area of France, the 'Maynette', 'Parisienne' and 'Franquette' selections are cultivated. Park tree, but particularly ideal for courtyards, embankments, estates, etc. Because of its strong odour, the nut is often used to keep mosquitoes and other insects at a distance. Often used for roadside planting in the hilly countryside in Central Europe.



Juglans nigra

# Juglans

fam. Juglandaceae



Juglans regia



Juglans regia 'Broadview'



Juglans regia 'Laciniata'

## regia 'Broadview'



Russia, 1920. Origin: Broadview, British Columbia, Canada and was introduced in West-Europe in 1953. Canadian selection from seed from Odessa, Russia. Small slow-growing spherical tree, later wide pendulous. Habit species-specific, except in growth rate. Height 12-15 m. Apomictic (the seed in the pollen does not fuse with the egg-cell, as a result the embryo only contains the properties of the mother plant), and does not require pollination. Recommended for its early and good fruit bearing quality. Highly resistant to diseases.

## regia 'Buccaneer'



Neer, the Netherlands, 1951. Rising, upright, open crown. Height up to 15 m. Recommended for its early and good fruit-bearing quality. Self-pollinating, produces a lot of pollen over a relatively long period and can therefore pollinate many other cultivars. Produces round nuts.

## regia 'Laciniata'



UK, 1700. Forms a semi-open, round crown, 12-15 m high and 7-10 m wide. The leaves are deeply incised, emerge bronze-coloured, and then turn shiny green. Yellow-brown autumn colouring. Yellow-green catkins in May-June, thereafter brown-green edible nuts. Light grey bark which later becomes rough. Requires nutrient-rich soil and can be planted in industrial areas.

# Kalopanax

fam. Araliaceae



## Castor aralia, Tree aralia, Prickly castor oil tree

A monotypic genus, imported in Europe in 1865. The generic name is derived from the Greek words: *Kalo*, excellent, good and *panax*: spiky, in other words well-set with pointed outgrowths. First described by Carl Peter Thurnberg (1743-1828) who was an apostle of Linnaeus and discovered Kalopanax during his stay in Japan. A full description by Koidz followed in 1925.

## septemlobus

(syn. *Acanthopanax septemlobus*, *Acer septemlobus*, *Kalopanax ricinifolius*, *Kalopanax pictus*)



Occurs in East and South China, Korea and Japan. The prickly castor oil tree has earned its name, as it is completely covered with pointed excrescences. As the tree matures, the points of the excrescences round off somewhat. This tree can reach a height of 30 m and forms a round open crown. Large hand-shaped leaves, 20-30 cm in size, 5-7-lobes (septemlobus). Resembles *Acer macrophyllum*, hence the synonym *Acer septemlobus*. The leaves are glossy dark green and turn yellow to red in autumn. Small white flowers in a cylindrical shape. Bluish-black berries with a diameter of 4 mm. The trunk is grey to blackish and completely covered with pointed excrescences. It grows on nutrient-rich, well-drained soils. Grows in both sun and partial shade.



Kalopanax septemlobus



Kalopanax septemlobus

# Koelreuteria

fam. Sapindaceae

## Golden rain tree

A genus that comprises 3 species, originating from China, Taiwan and Fiji. Koelreuteria is named after Joseph Kölreuter (1733-1806), professor of natural history in Karlsruhe, Germany and a pioneer in the study of hybridization.

**paniculata** Pride of India, Golden rain tree



Indigenous to China, Korea. Small tree with a height of 5-10 m with a loose, round crown. Also a large shrub. Large, pinnate to doubly pinnate leaf 25-30 cm, 7-15 leaflets, buds reddish green, yellow autumn colouring. Yellow flowers in large, terminal panicles in July-August. Lantern-like, angular brown fruits that resemble Chinese lanterns; they appear after flowering and are retained on the tree for a long time. Requires fertile, calcareous soil and a sunny, sheltered planting location. Specimen park tree, also for larger gardens. Young growths are relatively susceptible to frost damage in our region; when the damage is pruned back, the tree successfully regenerates.

**paniculata 'Coral Sun'**<sup>®</sup>



H. Kolster, Boskoop, the Netherlands, 1993. Selection as a shrub or tree shape with a fan-shaped, irregular, semi-open crown up to 10 m high. The young twigs are light orange-red. The leaves emerge dark pink to orange and later turn yellow-green. Pinnate leaves up to 50 cm in size with a red petiole. Yellow to orange autumn colouring. Yellow flower panicles in July-August. Then bladder-shaped, pale, seed pods which turn brown-black. Black seeds inside. Grows on all soils, but does not tolerate pavement. Full sun or partial shade.

**paniculata 'Fastigiata'**



Kew Botanical Garden, London, UK, 1895. A columnar-growing selection of the species. Height 5-8 m. Leaves, flowers and fruits species-specific, only this variety blooms less abundantly. Narrow park tree, also for larger gardens. Suitable as a specimen in public gardens or in shopping centres, green residential areas, etc. Soil requirements and location factors species-specific.

**paniculata 'September'**



Indiana University, Bloomington, Indiana, USA, 1960. Late-flowering selection that can grow up to 8-15 m high. Over time, it will develop slightly overhanging branches. Large leaves, dull green. Blooms profusely, species-specific, but 6-8 weeks later. Fruits also species-specific. Very beautiful park tree.

Koelreuteria paniculata

Koelreuteria paniculata

Koelreuteria paniculata

# + Laburnocytisus

fam. Fabaceae

# Laburnum

fam. Fabaceae

## Broom laburnum

A graft-hybrid between *Laburnum anagyroides* and *Chamaecytisus purpureus*. This plant has characteristics of both parents. It is not a true hybrid or cross, but a so-called graft-chimaera. The new species originates from a mixture of cells of both parental species on the point of contact between rootstock and scion. In 1825, in Vitry-sur-Seine, France, the French nurseryman Jean-Louis Adam grafted a cutting from *Chamaecytisus purpureus* to a *Laburnum anagyroides* rootstock. Both *Laburnum* and *Chamaecytisus* were previously called *Cytisus*. All parts of +*Laburnocytisus* are toxic.

## adamii Adam's laburnum



Jean-Louis Adam, Vitry-sur-Seine, France, 1825. Narrow, vase-shaped, capricious growth and a final height of 7 m. Pinnate leaves with 3 leaflets, green, ovoid to oval and 4-6 cm in size. Yellow autumn colouring. In May, large racemes 15-18 cm in size, light lilac, yellow-purple and bright yellow coloured. A clear representation of its parental heritage. After flowering, the softly pilose, grey-green pod-shaped fruits with black seeds appear. Grows on all soils, if not too wet. Does not tolerate pavement. Garden and park tree.

+ *Laburnocytisus adamii*

+ *Laburnocytisus adamii*

## Golden rain, Golden chain

A genus that comprises 3 species, distributed throughout southern Europe, North Africa and West Asia. Small trees or large shrubs with long, suspending bunches of yellow flowers in May-June. Grows on all soils in sun or partial shade, when cultivated on a standard preferably a location in full sun. In woody areas, Golden rain suffers from damage caused by wildlife. Larger plants need to be pruned by removing heavy and old branches.

## anagyroides Common golden rain (syn. *Laburnum vulgare*)



Origin: Central and Southern Europe. Shrub or small tree with a more spreading crown, height up to 7 m. Twigs and leaf underside are pilose, trifoliate leaf. Flowers light yellow, in bunches up to 20 cm long, not fragrant. Blooms at the end of May, after blooming it develops 8 cm long pods. Park shrub, park tree, also for gardens. As a tree shape, the 'Vossii' hybrid is cultivated more. Endures calcareous soil. The pods and seeds of this species are poisonous.

## anagyroides 'Yellow Rocket'®



Frank P. Matthews Ltd, Tenbury Wells, UK, 2015. Columnar growing tree with a very narrow upright habit. Bright, sunny yellow, pendant flowers adorn the tree in May. Attracts bees and butterflies. Hardy and heat resistant. Grows on all soil types, if not too wet. Garden, park and street tree.

## x watereri 'Vossii' (*Laburnum alpinum* x *Laburnum anagyroides*)



C. de Vos, Hazerswoude, the Netherlands, 1875. A hybrid that develops into a rising shrub or small tree shape with a height of 5-6 m. Vase-shaped crown. Slightly hairy, thick, green twigs, hairy buds greyish-green. Flower bunches up to 50 cm long. Large shrub or small tree for parks, public or private gardens. Requires rich, open and fertile soil. For that reason not suitable as a street tree. Very beautiful in combination with lilacs and wild apples. The pods and seeds of this species are poisonous.

*Laburnum anagyroides*

*Laburnum x watereri 'Vossii'*

# Lagerstroemia

fam. Lythraceae

## Crape myrtle

A genus that comprises 55 species. Occurs in Australia, East Asia and Japan. Evergreen and deciduous trees or shrubs with attractive flowers and trunk. The species we cultivate can withstand temperatures of -20 °C. They demand very hot summers, allowing them to grow well so that the wood can ripen. Pruning early in August ensures that the new wood can mature well and does not freeze.

**indica** Crape myrtle, Crepe myrtle



Large shrub or small tree. Beautiful inflorescence. A very late-flowering plant, August-September, which needs a lot of heat. Blooms only in very hot summers in the Netherlands. Blooms with pink to dark red flowers in panicles with contrasting yellow anthers. Smooth and characteristic auburn bark. Small, round, ovate, dark green leaflets. Beautiful yellow-orange autumn colouring. Prefers sheltered locations. Use as a specimen tree or in planter boxes.

**x 'Muskogee'**

(*Lagerstroemia fauriei* x *Lagerstroemia indica*)



National Arboretum, Washington D.C., USA, 1978. Height 6-8 m, width 5-7 m. Dark green small leaves, (sub)opposite, elliptic to oblong and somewhat leathery. Lavender-purple flowers in panicles of 18 cm long and 13 cm wide from end July to end September. Beautiful reddish-brown, smooth bark, later peeling. Yellow-orange to red autumn colouring. Better hardiness than *indica*. Requires well-drained soil.

**x 'Natchez'**

(*Lagerstroemia fauriei* x *Lagerstroemia indica*)



National Arboretum, Washington D.C., USA, 1978. Height 7-9 m, width 10 m. Dark green, small leaves, (sub)opposite, somewhat leathery. Flowers pure white in large panicles, which can have from 100 to 800 flowers. Blooms from the end of June until the end of September. Beautiful cinnamon-brown, smooth bark, later peeling. Yellow-orange to red autumn colouring. Better hardiness than *indica*. Grows on all soils.

Lagerstroemia x 'Muskogee'

# Lagerstroemia

fam. Lythraceae

**x 'Tuscarora'**

(*Lagerstroemia fauriei* 'Basham's Party Pink' x *Lagerstroemia indica* 'Cherokee')



National Arboretum, Washington D.C., USA, 1967, released in 1982. Develops a dense, vase-shaped crown. Height 6-8 m and width 3-4 m. Decorative, peeling bark. Obovate, dark green leaves and orange-red autumn colouring. Mildew resistant. Flowers from July until September with terminal panicles of dark coral pink flowers, 30 cm in size. Grows on all soils and is very hardy. Resistant to pollution. When deeply rooted, it withstands drought and heat well. Use as a specimen shrub or tree in gardens and parks.



Lagerstroemia x 'Natchez'



Lagerstroemia x 'Natchez'

# Larix

fam. Pinaceae

# Ligustrum

fam. Oleaceae

## Larch

A genus that comprises around 14 species. Dioecious and occurring in colder, temperate regions in the Northern Hemisphere. The needles emerge bright green and turn soft green in summer. Larch wood is highly valued for its tough, waterproof and durable qualities. The heartwood is red-brown and clearly contrasts with the pale-brown sapwood. Larix is very hardy, because it has a high content of resin.

## Privet

A genus that comprises 50 species, distributed in Europe, North Africa, East and Southeast Asia. Evergreen and deciduous shrub or small tree. Has no specific soil requirements, but does not tolerate wet soils.

**decidua** European larch, Common larch (syn. *Larix leptolepis*, *Larix europea*)



Grows narrowly, conical up to 50 m high. Horizontal branch position. Bright green, soft needles in spring. Yellow autumn colouring. Very similar to *kaempferi*. The cones are more upright, brown-orange in colour and the wood is lighter in colour. Thrives better on calcareous soils. Requires well-drained soils.

**kaempferi** Japanese larch (syn. *Pinus kaempferi*, *Larix leptolepis*)



Mostly occurring in Japan and named after Engelbert Kaempfer (1651-1716). Fast-growing, upright tree, height up to 45 m. Leaves emerge bright green and turn darker in summer, yellow autumn colouring. Grey-brown outer bark, peeling in elongated plates, inner bark rust-brown. Round, brown cones with reflexed scales, 2-3 cm in size. The cones mature in 1 year, and are retained for several years. Prefers well-drained soils. Several dwarf cultivars have been developed in Japan, often used as a bonsai form.

**kaempferi 'Jacobsen's Pyramid'**

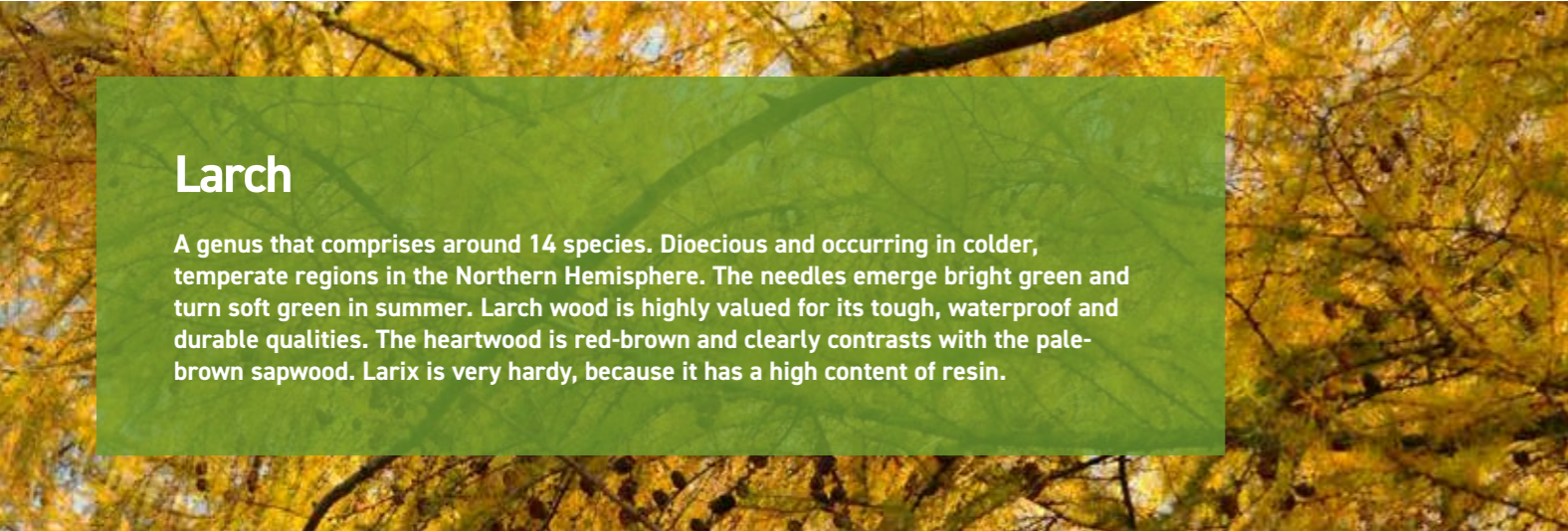


Arne Jacobsen (1902-1971), Copenhagen, Denmark. Narrow, conical to nearly fastigiate growth with upright, ascending branches. Deciduous. Soft, bright green to bluish-green needles. Golden-yellow to orange autumn colouring. Requires, fertile, humus-rich, well-drained soil. Hardy. Use as a specimen tree.

**japonicum** Japanese privet



Small tree or multi-stem specimen shrub, native to Japan and Korea. Height 6 m, width 4 m. Also used for hedging. Wide and upright growth. Evergreen, shiny green leaf. Beautiful white, lilac-like, flower panicles, fragrant. Flowering period June-September. After flowering, the plant develops bluish-black berries, which birds love to eat. Deep root system. Specimen shrub, also suitable for planter boxes.



Larix decidua



Larix kaempferi



Ligustrum japonicum



Ligustrum japonicum

# Liquidambar

fam. Altingiaceae

## Sweetgum

A genus that comprises 4 species: *styraciflua* from North America and *acalcina*, *formosana* and *orientalis* from East and Southwest Asia. The Eastern species have 3-lobed leaves, the North American species have 5- to 7-lobed leaves. Recent genetic research places Liquidambar under the Altingiaceae family. The brown-red resin is very fragrant and Native Americans used to chew this sticky resin. In Central America, widely planted as a tree for the chewing gum industry.

### *acalcina* 'Burgundy Flush' Chinese sweetgum



Origin: Central and Southern China. A good growing variety that develops a nice cone-shape. Height 25 m. The leaves are 3-lobed. Green flowers in spring. The new leaves are beautiful upon emergence: dark green on top and slightly paler towards the petiole, later turning orange to purplish-red. Close resemblance to Liquidambar *formosana*, but *formosana* has very short 4 cm long petioles, compared to the *acalcina* species, which has 8 cm long petioles.

### *formosana* Taiwanese sweetgum



Origin: Central and Southern China, Vietnam, Laos, South Korea, Taiwan. Tall, upward-growing tree with a wide, screen-like crown. Height 20-25 m. Contrary to the better-known Liquidambar *styraciflua*, the branches and twigs of *formosana* have no corky fissures. Leaves very similar to Liquidambar *styraciflua*, however with 3-5 lobes (*styraciflua* has 5-7 lobes). Matte-shiny, dark green leaf with a scarlet red autumn colour. Flowers and fruits similar to Liquidambar *styraciflua*. Beautiful park tree in warm locations on fertile, damp soil. Requires a sunny and wind-sheltered location.

### *formosana* 'Ellen'<sup>®</sup>



Esveld, Boskoop, the Netherlands, 2004. Named after both the athlete Ellen van Vugt and Ellen van Weely. Pyramidal-growing tree up to 10 m high. The new leaves emerge wine red and later turn dark green. Orange to purple-red autumn colouring. The leaves are not deeply incised, 3-lobed. Inconspicuous, yellow-green flowers in May. Sunny location. Not on calcareous soils. Very hardy, moderately wind resistant.

Liquidambar styraciflua 'Worplesdon'

Liquidambar formosana 'Ellen'

# Liquidambar

fam. Altingiaceae



Liquidambar orientalis



Liquidambar styraciflua



Liquidambar styraciflua

## orientalis Turkish sweetgum



Indigenous to Asia Minor. Tall, rising tree, in the homeland reaching heights up to 25-30 m. The cultivated varieties in Western Europe usually reach no more than a quarter of that height. Dense, bushy crown. Young twigs yellowish-green, older twigs have corky fissures. Leaves smaller than Liquidambar styraciflua, 4-6 cm long and usually just as wide or somewhat wider, 5-lobed, shiny dark green. Flowers and fruits similar to Liquidambar styraciflua, hardly ever – if ever – observed in Western Europe. Rare park tree on very warm, sunny locations protected from frost. Especially in its juvenile stage, susceptible to frost damage. Soil requirements very similar to those of Liquidambar styraciflua.

## styraciflua American sweetgum



Origin: Eastern part of North America. Tall tree, 15-20 m high, rising up to 25 m in the homeland. Initially a rather narrow crown, later widening. Straight, upright trunk with deeply grooved bark. Branches and twigs covered with fissured, corky bark. Palmately 5-lobed leaf with 5 sharply pointed lobes, 10-15 cm in size and resembling a maple leaf. Shiny deep green foliage with a beautiful red to almost black and yellow autumn colour. The twigs of younger specimens have a tendency to freeze. Requires a warm, sunny planting location sheltered against cold winds. Well-drained, fertile, sandy or loamy soil, moist but not wet. Does not tolerate calcareous soils. Park tree, or as an avenue tree on wide, open green verges in warm and sheltered avenues.

## styraciflua 'Aurea'



Habitus almost species-specific, but with a slower growth and a slightly lower final height. The young shoots are yellowish to yellow-spotted and turn yellow-green and later almost green. Specimen tree for parks.

## styraciflua 'Brotzman'



Brotzman's Nursery, Madison, Ohio, USA, 1993. Good growing oval-shaped tree. Height 15-20 m, width 10-12 m. Deep dark green, leathery leaves. Corky fissures on the twigs. Not susceptible to branch breakage. Beautiful red autumn colouring.

## styraciflua 'Brotzman Select'®

(syn. Liquidambar styraciflua 'Brotzman#1')



Brotzman's Nursery, Madison, Ohio, USA. A selection from 'Brotzman' with thick, fissured corky bark on the trunk, whereas most cultivars of styraciflua have smooth trunks. For the rest, the same characteristics as 'Brotzman'.

## styraciflua 'Burgundy'



Maunsell van Rensselaer (1897-1972), Saratoga Horticultural Foundation, Saratoga, California, USA, 1962. Growth species-specific, but with lush, burgundy red autumn foliage that keeps its colour a long time. Park tree.

# Liquidambar

fam. Altingiaceae

## styraciflua 'Festival'



Maunsell van Rensselaer (1897-1972), Saratoga Horticultural Foundation, Saratoga, California, USA, 1964. Has an upright growing, narrow ovate crown. Autumn colours from yellow to orange, changing to red. Park tree. Under perfect conditions also an avenue tree on green verges.

## styraciflua 'Gum Ball'®



Hiram B. Stubblefield (1910-1983), McMinnville, Tennessee, USA, 1965. Spherical shrub or small tree, usually top grafted, with a somewhat flattened crown, up to 4 m high. 5-lobed, glossy green leaves, with yellow autumn colouring. Inconspicuous, yellow-green flowers in April-May. Requires well-drained, fertile soils, not too calcareous. Tolerates paving and is reasonably wind resistant.

## styraciflua 'Happydaze'®

(syn. Liquidambar styraciflua 'Hapdell')



Bernheim Arboretum, Clermont, Kentucky, USA, 2000. Habitus is species-specific. Green flowers. Fruitless selection. Corky fissures on the twigs. Maroon autumn colouring. Good street and avenue tree, or as a specimen. Thrives on heavier soils. Retains its leaves long into winter.

## styraciflua 'Lane Roberts'



Hillier Nurseries, Amfield, UK, 1971. Cultivar with conical growth. Height up to 15 m. Width approximately 4 m. Leaf shiny dark green. Red-yellow autumn colouring. Auburn twigs with corky fissures. Use as a park tree or avenue tree.

## styraciflua 'Levis'®



Marchant's Nursery, Wimborne, Dorset, UK, 1955. Wide pyramidal growing selection up to 20 m high. 5- to 7-lobed, shiny green leaves. Smooth trunk. Inconspicuous, yellow-green flowers. Cluster-shaped fruits. Purple-red autumn colouring with an orange glow. Grows on both dry and wet soils; not on calcareous soil types. Good heat and drought resistance.

## styraciflua 'Moraine'



Siebenthaler Company, Dayton, Ohio, USA, 1980. Pyramidal-growing tree with a height of 10-12 m and a width of only 5-6 m. Leaf shape species-specific, but larger 5-7-lobed and shiny dark green. Autumn colour also species-specific. Hardy park tree and because of its moderate dimensions also a beautiful avenue tree under perfect planting location conditions. Soil requirements as recommended for the species. Preferably plant on open green verges.



Liquidambar styraciflua 'Brotzman'



Liquidambar styraciflua 'Paarl'



# Liquidambar

fam. Altingiaceae



Liquidambar styraciflua 'Rotundilobia'

## styraciflua 'Oakville Highlight'



Vic John Ciccolella, Oakville, New South Wales, Australia, 2004. Introduced by Fleming's Nurseries, Monbulk, Australia. Rising growth, 15 m high, 4 m wide. Has heavier branches than 'Slender Silhouette' and 5-7-lobed, dark green foliage that colours yellow-orange to violet in autumn. Grows best in slightly acidic soils. Highly resistant to drought and heat. Very hardy. Excellent street and avenue tree.

## styraciflua 'Paarl'®



Baumschule Lappen, Nettetal, Germany, 1990. Narrow pyramidal growth. Height 15-20 m. Width 3-4 m. Shiny dark green leaf. Yellow, orange-red autumn colouring. Turns colour later than other cultivars.

## styraciflua 'Palo Alto'



George Hood & Maunsell van Renselaer (1897-1972), Saratoga Horticultural Foundation, Saratoga, California, USA, 1954. Medium-sized tree, habit species-specific. Cultivar with shiny green summer foliage. Splendid orange-red autumn colouring.

## styraciflua 'Parasol'



Research Institute for Forestry and Landscape 'De Dorschkamp', Wageningen, the Netherlands, 1985. Wide spherical to elliptical crown. Rather short, firm trunk of 2 m. Bright green leaf with carmine red to purple autumn colours. One-year-old twigs strongly branch, creating a compact, round crown. Branches have many corky fissures, already appearing on one-year-old shoots. Typical ornamental tree for parks and as a specimen tree.

## styraciflua 'Red Star'

(syn. Liquidambar styraciflua 'Stared')



Tinus van der Bruggen (1947-2018), Boomkwekerij Udenhout, Udenhout, the Netherlands, 1995. Selection found in Italy. Medium-sized tree with strongly ascending branches. Develops less corky fissures than the species. Bright green and deeply lobed leaves that turn striking deep purple in autumn. Attractive park tree.

## styraciflua 'Rotundilobia'

(syn. Liquidambar styraciflua 'Obtusifolia')



The Coker Arboretum, University of North Carolina, USA, 1930. Upright form, which later forms a pyramidal to oval crown, 16-18 m high and 5-6 m wide. The leaves are 5-lobed and nicely rounded. Shiny dark green in colour, in autumn turning yellow with red hues. Inconspicuous, yellow-green flowers. Rarely bears fruit. Grows on all soils, except for calcareous soils.



Liquidambar styraciflua 'Slender Silhouette'

# Liquidambar

fam. Altingiaceae

## styraciflua 'Silver King'



Hillier Nurseries, Ampfield, Romsey, UK, 1991. Narrow, oval crown, height 10-12 m. Horizontally spreading branches without corky fissures. Leaves are variable in shape, from unlobed to palmately lobed with 3 to 5 lobes and a serrated leaf margin. Grey-green foliage with a light cream-coloured to white leaf edge. Sometimes returning to a fully green leaf colour. In autumn, the foliage turns from yellow to orange and the leaf edges turn pink to dark purple. Grows on all soils. Good resistance to wind and road salt. Garden and park tree.

## styraciflua 'Slender Silhouette'



Don Shadow, Shadow Nursery, Winchester, Tennessee, USA, 1990. Introduced in Europe by Boomkwekerij Udenhout. The mother tree is 20 m high and less than 2 m wide. In the Netherlands, the tree can grow 30-60 cm per year and reaches a final height of 18-20 m, the width is max. 2 m. This variety received a gold medal in America in 2010 from the Pennsylvania Horticultural Society. In spring and summer deep green, glossy, palmately 5-lobed leaves, which turn yellow-red in autumn. The most beautiful autumn colouring occurs on non-calcareous and acidic soils. Established specimen will get beautiful corky fissures. Thrives on well-drained soil, preferably in full sun. The tree produces fewer seeds, which causes little inconvenience in public spaces. One of the narrowest pillar trees to date.

## styraciflua 'Worplesdon'



Jackman's Nursery, Woking, Surrey, UK, 1968. Pyramidal-growing selection that grows well in the cold and wet Northwest European climate. Height 12-15 m, width 6 m. Smooth bark. Orange-red to purple autumn colours. Park or exclusive avenue tree, stronger and more resistant to climate changes. For the rest species-specific.



Liquidambar styraciflua 'Worplesdon'



Liquidambar styraciflua 'Worplesdon'



Liquidambar styraciflua 'Worplesdon'

# Liriodendron

fam. Magnoliaceae

## Tulip tree

A genus that comprises 2 species: *tulipifera* from North America and *chinensis* from China. *Liriodendron* is derived from the Greek words: *leiros*, lily and *dendron*, tree. Best known for its tulip-shaped flowers that are placed on the twig ends. The cone-shaped fruits look very much like conifer cones. In the USA, *Liriodendron* is often referred to as Yellow poplar, due to its resemblance with regard to the bark and yellow autumn colouring. Very much appreciated in the timber industry, because the wood of *Liriodendron* does not shrink after treatment.

### **chinense** Chinese tulip tree



Origin: Central China. Fast-growing tree with a height up to 15 m. Large leaves, more deeply indented above the lower lobes, turning to a deep yellow in autumn. Flowers only appear when the tree is 20-25 years old. Yellow-green, tulip-shaped flowers, 4 cm, in May-June. The fruits look like cones. Extreme frost can cause frost damage to young trees.

### **tulipifera** Tulip tree



Origin: Eastern part of USA. Fast-growing, tall tree with a height up to 20-25 m. High, wide and rather dense crown. Straight trunk, which initially remains smooth and grey for a long time but develops light grooves once established. Typical leaf shape with oblate leaf top and usually 2 lateral lobes. Leaves have a shiny green top and bluish-green underside. Yellow autumn colouring. In May-June, attractive, yellowish-green tulip-shaped flowers appear, but they do not stand out very well against the foliage. The calyx has an orange-yellow spot on each petal. For moist, open, fertile and slightly loamy soil. Deeply rooting, therefore well anchored and wind resistant. Best plant this species when it is budding. Preferably plant with root ball. Under perfect soil conditions, the tree might be planted in paved surfaces, but it requires space. Park tree, but also an avenue tree on wide green verges.

### **tulipifera 'Aureomarginatum'**



Germany, 1865. Growth and habitus species-specific. Wide, 4-lobed leaves with wide indented top and greenish-yellow edges and spots. Yellow autumn colouring. Mostly used as a beautiful park tree, sometimes also as an avenue tree.

Liriodendron tulipifera

# Liriodendron

fam. Magnoliaceae

### **tulipifera 'Fastigiatum'**

(syn. *Liriodendron tulipifera* 'Pyramidale')



Germany, 1884. Narrow pyramidal crown and upward growing branches. Yellow autumn colouring. Flowers only once established. May be planted on open green verges in narrower avenues.

Liriodendron tulipifera

Liriodendron tulipifera

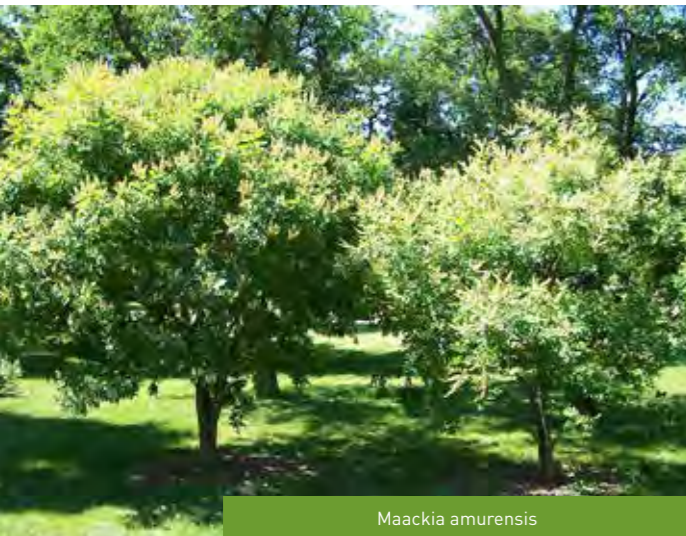
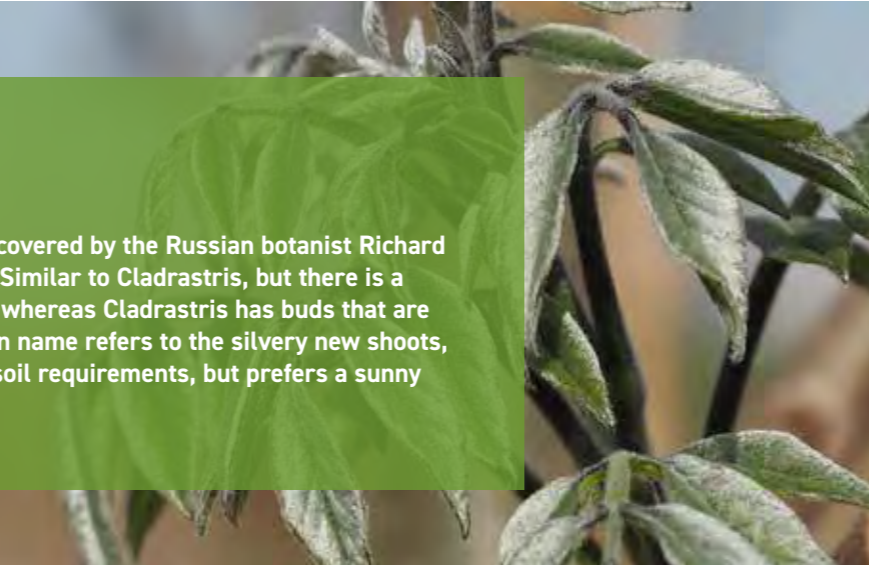
Liriodendron tulipifera 'Fastigiatum'

# Maackia

fam. Fabaceae

## Silver tree

A genus that comprises 11 species and was discovered by the Russian botanist Richard Maack (1825-1886). Small tree or large shrub. Similar to Cladrastis, but there is a difference in buds; Maackia has detached buds, whereas Cladrastis has buds that are enclosed by the base of the petiole. The common name refers to the silvery new shoots, which occur in spring. Maackia has no specific soil requirements, but prefers a sunny location in well-drained, sandy soil.



Maackia amurensis



Maackia amurensis

**amurensis** Silver tree, Amur maackia



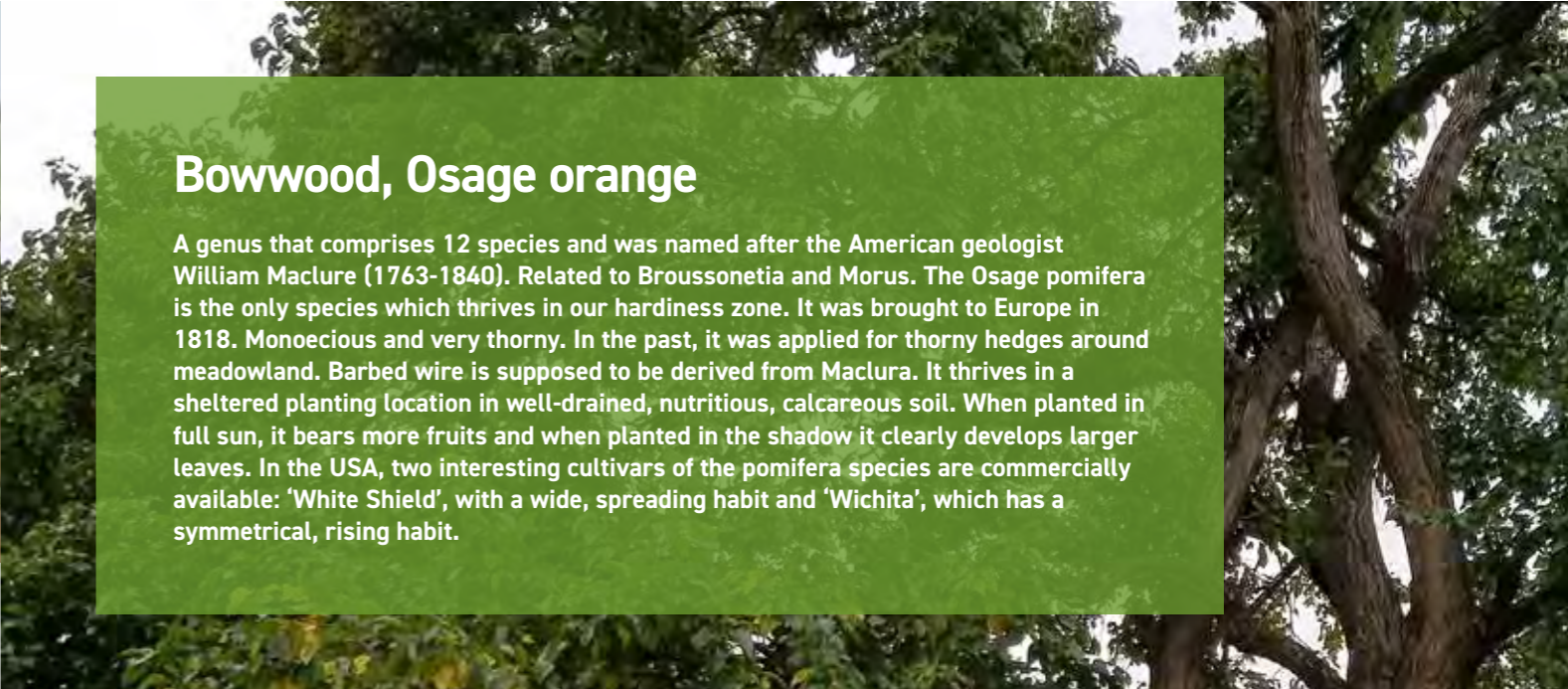
Origin: Amur area of Siberia. Growing up to 12 m in the wild, in its cultivated form a large shrub or small tree with a height up to 6 m. Peeling bark. Bright green, odd-pinnate leaves, 20-30 cm long with a long and wide terminal leaflet. Blooms in July-August, with small, greenish-white flowers in 10 to 15 cm long upright panicles. Pods 5-7 cm long. Special park tree for sunny, sheltered locations on rich and loamy soils.

# Maclura

fam. Moraceae

## Bowwood, Osage orange

A genus that comprises 12 species and was named after the American geologist William Maclure (1763-1840). Related to Broussonetia and Morus. The Osage pomifera is the only species which thrives in our hardiness zone. It was brought to Europe in 1818. Monoecious and very thorny. In the past, it was applied for thorny hedges around meadowland. Barbed wire is supposed to be derived from Maclura. It thrives in a sheltered planting location in well-drained, nutritious, calcareous soil. When planted in full sun, it bears more fruits and when planted in the shadow it clearly develops larger leaves. In the USA, two interesting cultivars of the pomifera species are commercially available: 'White Shield', with a wide, spreading habit and 'Wichita', which has a symmetrical, rising habit.



**pomifera** Osage orange  
(syn. Maclura aurantiaca)



Origin: Eastern part of North America. Named after the Osage-Indians; they used the wood of this species for bows and arrows and such. Tree with an irregular crown, slightly oblate, with a height up to 15 m. Bark peels off, showing the orange-brown inner bark underneath. Young twigs are shiny green to olive-green. Thorns resemble those of Gleditsia triacanthos. Leaf is egg-round, non-indentated with smooth edges, shiny dark green on top. Male flowers are green, female flowers spherical. Monoecious. Yellow-green to orange-yellow, spherical fruits, 8-12 cm. Requires a sunny, sheltered location in relatively fertile, calcareous soil. May freeze in cold winters but will recover fast. Very special park tree.



Maclura pomifera



Maclura pomifera

# Magnolia



fam. Magnoliaceae

## Magnolia

A genus that comprises around 80 species spread across North America and East Asia. Named after the French botanist Pierre Magnol (1638-1715). There are early-flowering species where the flowers appear before the leaves emerge and there are summer-flowering species. Closely related to Liriodendron and they are the only two genus belonging to the Magnoliaceae family.

### acuminata



Eastern USA. Tree with a wide, loose crown with a height up to 30 m. Leaves rather big. In June-July, yellow-green flowers with a diameter of 6-10 cm. Growing on short very thick flower stalks. Fruits auburn in colour, 5-8 cm long. Seeds bright red. Very beautiful park tree.

### americana var. microcarpa



Upright in its juvenile stage, later widening into a tall, closed and wide egg-shaped crown, but narrower than the species. Height up to 15 m. Dark green leaves; autumn colour species-specific. Avenue and street tree for wider profiles.

### biondii



Tree or multi-stem shrub originating in China. Height 12 m. Smooth, grey trunk. Dark green leaves with a lighter green underside. The large, hairy flower buds emerge before leaf development. In February-March, light pink, tulip-shaped flowers, 12 cm, pleasantly fragrant. Grows on all soils.

### x brooklynensis 'Black Beauty'

(Magnolia lilliflora x Magnolia cuminata)



Brooklyn Botanic Garden, New York, USA. Tree or multi-stem shrub with a height of 5-8 m. Leaves are dark green, elliptical to oval-shaped. Dark purple, almost black flowers with a lime-white centre, 15-20 cm in size. Blooms late April, early May. Therefore less susceptible for night frost in spring. Spreads a delicious fragrance. Yellow-brown autumn colouring. Prefers slightly acidic, well-drained soils that are rich in humus. Plant in full sun or partial shade.



Magnolia acuminata

Magnolia x soulangeana

# Magnolia

fam. Magnoliaceae



Magnolia x brooklynensis 'Elizabeth'

## x brooklynensis 'Elizabeth'



Brooklyn Botanic Garden, New York, USA, 1954, named in 1978. Height 6-8 m. Width 3 m. Small tree or large shrub with striking, bowl-shaped, light yellow, fragrant flowers. Pyramidal growth, flowering in late spring. Blooms at an early age. Plant as a specimen shrub/ tree.

## x brooklynensis 'Yellow Bird'

(Magnolia lilliflora x Magnolia cuminata var. subcordata)



Brooklyn Botanic Garden, New York, USA, 1981. Tree or multi-stem shrub with a height of 12-15 m. Leaves are dark green, elliptical to oval-shaped. Bright yellow, tulip-like flowers, 10 cm in size. Yellow-brown autumn colouration. Prefers slightly acidic, well-drained, humus-rich soils. Plant in full sun or partial shade.

## 'Daybreak'

(Magnolia 'Woodsmen' x Magnolia 'Tina Durio')



August Kehr (1914-2001), Department of Agriculture, USA, 1990. A small tree, with a height up to 9 m, with a narrow, upright, pyramidal growth. Large deep pink flowers, without purple hues. Flowers are 20-25 cm in size. Very fragrant. The flowers open late, so the chance of frost damage is small. One of the better Magnolias from recent years. An excellent avenue and street tree. Availability very limited.

## denudata



Origin: China. Small tree or large shrub with a height of 5-8 m and an irregular, round crown. Flowers are ivory-white, bell-shaped and have 9 tepals. Blooms early, before the leaves emerge, around the end of April and the beginning of May. Magnolia denudata rarely develops seeds; it is propagated by means of grafting.

## denudata 'Yellow River'

(syn. Magnolia denudata 'Fei Huang')



Origin: China. Small tree or large shrub. A variety that blooms with 15 cm long, large, white-yellow flowers. Blooms early in April-May before the leaves emerge. Best planted as a specimen shrub/ tree.

## 'Galaxy'

(Magnolia lilliflora 'Nigra' x Magnolia sprengeri 'Diva')



US National Arboretum, Washington D.C., USA 1963, named in 1980. A rising tree with pyramidal crown, suitable for narrow streets. A very beautiful hybrid with strong growth and an attractive flower shape and colour. The plant starts blooming at a relatively young age - with only a few large flowers during the first few years. First dark purple buds that later turn into light pink flowers. 'Galaxy' is a healthy tree and in the Netherlands, hardy to very hardy. A magnificent addition for narrow streets.



Magnolia denudata 'Yellow River'



Magnolia 'Galaxy'

# Magnolia

fam. Magnoliaceae

## 'Genie'®

(Magnolia x soulangeana x Magnolia liliiflora)



Vance Hooper, Magnolia Grove, Waitara, Taranaki, New Zealand. Was named 'Genie' because it meets 3 requirements: good garden tree, colour stability and good for further crossing. Compact, capricious growing, 3 m high after 10 years, up to 5-6 m. Tulip-shaped, dark red, fragrant flowers, 15 cm, which appear before the leaf emerges in April. Sporadic second flowering. Very stable in colour. Small green, oval leaves. Plant in full sun or partial shade. Grows on all soils, preferably slightly acidic. Good frost resistance. Tolerates semi-pavement.

## grandiflora



Evergreen tree that grows around the Mediterranean Sea to a height of 30 m. The twigs turn from yellow-green to brown and are slightly hairy, just like the leaf buds. Thick, glossy, leathery, elongated to oval leaves with a grey to brown underside. Even though it is an evergreen species, leaves drop after the 1st to 3rd year. Large, white flowers with dark purple anthers and a pleasant fragrance.

## grandiflora 'Alta'



Tree Introductions Inc., Athens, Georgia, USA. A more compact, upright-growing cultivar from North America. Has thick, leathery leaves. Hardy. Pure white flowers.

## grandiflora 'Galissonière'



Baron Rolland-Michel de la Galissonière (1693-1756), France, 1745. Species-specific. Bears few fruits. Has a better hardiness in our climate than the species.

## grandiflora 'Kay Parris'®

(Magnolia grandiflora 'Little Gem' x Magnolia grandiflora 'Bracken's Brown Beauty')



Gilbert Nursery, Chesnee, South Carolina, USA. Compact-growing evergreen selection with a pyramidal crown and a height of 6 m. Narrow, dark green, glossy leaves with a brown velvety underside, which emerge wavy and pale pink. Cream-coloured, 15 cm long very fragrant flowers in July-August. Blooms at a young age. Grows on all soils. Quite hardy. For sun and partial shade. Drought sensitive.

## 'Heaven Scent'

(Magnolia lilliflora 'Nigra' x Magnolia veitchii)



Drury Todd Gresham, Santa Cruz, California, USA, 1960. Gresham hybrid. Narrow upright tree. Height 10-12 m, width 4-6 m. Large, oval, dark green, pointed leaves, deciduous, yellow autumn colouring. The fragrant, dark pink, tulip-shaped flowers, 10 cm in diameter, with a magenta-coloured central band on the outside of the 9 tepals appear in April-May before the leaves emerge. The red-green, knobby fruits appear later. Grows on moist and well-drained, acidic or neutral soils of all types.



Magnolia 'Genie'



Magnolia grandiflora



Magnolia 'Heaven Scent'



# Magnolia

fam. Magnoliaceae



Magnolia kobus



Magnolia kobus

**hypoleuca** Japanese cucumber tree  
(syn. *Magnolia obovata*)



Originally from China and Japan. Forms a semi-open, round, irregular growing crown up to 15 m high, 6 m wide. Cream-white, tulip-shaped, fragrant, large flowers 15-20 cm in size in May-June, from which capsules with orange seeds grow. Leaves are green, 30-40 cm long, inverted ovoid with a blue-grey underside. Yellow-brown autumn colouring. Purple-green twigs, smooth grey bark. Requires well-drained soil. Quite hardy. Moderately wind resistant. Tolerates pollution.

**'Joe McDaniel'**  
(*Magnolia x soulangeana* 'Rustica Rubra' x *Magnolia x veitchii*)



Ken Durio, Louisiana Nursery, Opelousas, USA, 1984. Named after prof. Joe Mc Daniel (1912-1982) magnolia specialist at Illinois University and former chairman of the American magnolia society. Gresham-hybrid, which blooms very late with large, bowl-shaped flowers. The tepals are dark purple on the outside and white on the inside. Develops into a fast, pyramidal-growing tree shape with a more or less columnar crown. Because of its late flowering, it is almost protected from late night frost. An attractive addition as a park tree.

**'Jon Jon'**  
(*Magnolia x soulangeana* x *Magnolia x veitchii*)



John Allen Smith, Magnolia nursery, Chunchula, Alabama, USA. Height up to 7 m, width 3.5 m. Strongly rising, small tree or large shrub with beautiful pastel softish-pink flowers. Blooms in late spring, so the chances of flower frost are slim. Very fragrant flowers, 10-15 cm. Suitable for narrow streets and small gardens. Not yet widely cultivated.

**kobus**

Origin Japan. In the Netherlands, it can reach a height of 10 m max. In its juvenile stage, the tree grows in a pyramidal upright manner. As it matures, the main branches spread slightly and the crown becomes wider, rounded oval in shape. Protruding trunk up to the crown, and then forking. The leaf is inversely egg-round, shiny and bright green. The large flower buds are felty and hairy, giving this tree a soft ornamental value in winter. Blooms in March-April before the leaf emerges with single, white flowers that are wide open and have many narrow tepals. After flowering, the *Magnolia kobus* often bears large, pink fruits that split and reveal the scarlet seeds. Blooms poorly when young, and may need as much as 25 years before reaching its best flowering status. Very hardy, only the buds and flowers can suffer from late night frost. Grows on almost all soil types that allow the root system to develop well and are not too wet and calcareous. Beautiful park tree and good avenue tree that tolerates pavement well under good conditions.

**kobus var. borealis**

Higher than species-specific. It also has slightly thicker leaves with deeper veins. Is hardier, only the inflorescence is less abundant as *Magnolia kobus*.

# Magnolia

fam. Magnoliaceae

**kobus 'Fastigiata'**

Bonte Hoek, Glimmen, the Netherlands. Narrow upright, slightly open in structure. Height 6-7 m, width 3-4 m. For the rest species-specific.

**kobus 'Isis'®**

Nursery Prenor, Hungary. Columnar growth. Height 8-10 m, width 2-2.5 m. Blooms at a young age, species-specific with 6 tepals. The leaves emerge bronze-green and then turn dark green. Grows on moist and well-drained, acidic or neutral soils of all types.

**liliiflora 'Nigra'**  
(syn. *Magnolia x soulangeana* 'Nigra')



John Gould Veitch (1839-1870), London, UK, 1861. Rather bare, spreading shrub. Flowers and leaves appear simultaneously. Inner tepals are rising; tepals on the outside are more spreading. Drops its flowers relatively soon. Narrow, tulip-shaped, dark reddish-purple flowers. Blooms late in spring, but the flowering can extend until the (end of) summer. Use in large gardens, public gardens and parks.

**x loebneri 'Leonard Messel'**

Leonard Messel (1847-1915). Gardens of the Earl of Rosse, Nymans Garden, Handcross, West-Sussex, UK, 1950. Highly branched, small tree or large shrub with star-shaped, small white flowers, the outer tepals of which have a big pink stripe. The buds are dark pink. The 12 tepals are 7 cm long and only 15-20 mm wide. Blooms from mid-April to mid-May. Very attractive, little tree for parks and gardens. Because of the pink stripe on the outer tepals, this *Magnolia* appears to bloom pink from a distance.

**x loebneri 'Merrill'**  
(*Magnolia kobus* x *Magnolia stellata*)



Arnold Arboretum, Cambridge, Massachusetts, USA, 1939. Named after botanist Elmer Merrill (1876-1956). Generally develops into a multi-stem tree shape with a wide egg-round crown and a height of approx. 7 m and a width up to 7.5 m. The pure white flowers have 12 large tepals, 6-7 cm long and 2-3 cm wide, producing the largest flowers of the *Magnolia x loebneri* range. Blooms profusely. Early flowering, more or less at the same time as *Magnolia stellata*, from early April to the end of April. To be used as an avenue and street tree. Less susceptible to late night frost.



Magnolia kobus



Magnolia x loebneri 'Leonard Messel'



Magnolia x loebneri 'Merrill'

# Magnolia

fam. Magnoliaceae



Magnolia 'Peppermint Stick'



Magnolia x soulangeana



Magnolia x soulangeana

## x loebneri 'Snowdrift'

(Magnolia kobus x Magnolia stellata 'Rosea')



The species name loebneri comes from Max Löbner, director of the botanical garden of Bonn, Germany. 'Snowdrift' originated in this garden around 1910, but was only introduced around 1970 by Hillier Nurseries, UK. Star-shaped and abundant flowering like stellata and the upright form of kobus. Multi-stem shrub or tree. Height 5-6 m, width 4-5 m. Pure, fragrant white flowers with 12 tepals bloom before the leaves emerge at the end of April-beginning of May. Hardly susceptible to spring night frost. Inverted egg-shaped to elliptical leaves, 12-15 cm long and 5 cm wide, glossy bright green in colour. Turns yellow-green in autumn.

## 'Peppermint Stick'

(Magnolia lilliflora x Magnolia veitchii)



Todd Gresham, California, USA, 1960. Gresham's main objective was to develop a Magnolia with big flowers. 'Peppermint Stick' has cup-shaped flowers up to 25 cm in diameter. The flower tepals are softish pink to light mauve on the underside turning into white on top. Flowers are cream-coloured on the inside and hardly susceptible to frost. Flowering period: April. Develops a wide, rising crown up to 10 m high. Leaves are 20 cm long. Grows best on well-drained, acidic to neutral, humus-rich soils. Plant in full sun, sheltered from eastern winds.

## salicifolia 'Louisa Fete'



Von Gimborn Arboretum, Doorn, the Netherlands. Narrow, pyramidal tree with a continuous central leader. Height 12-15 m, width 4-5 m. The leaves emerge bronze-brown and then turn green on top and blue-green on the underside. They are long, oval with a pointed tip. The young leaves have a light aromatic fragrance. The 10-12 cm large, cup-shaped flowers are white on the outside and light pink on the inside and appear at the end of April-beginning of May. Turns from yellow to brown in autumn. Grows on all soils. Street and park tree.

## sieboldii Korean mountain magnolia



Origin: East Asia, China, Korea and Japan. Shrub or small tree up to 10 m high. Named after Philip Franz von Siebold (1796-1866). Upright branches. Leaves 12 x 10 cm, oval to elliptical, dark green. Amber autumn colouring. The 10 cm, white and fragrant cup-shaped flowers with a red-purple anther, appear at the start of the summer. Pink fruits, which later turn orange to red. Plant in full sun. Prefers light, humus-rich moist soil types. Very hardy.

## x soulangeana Saucer magnolia

(Magnolia denudata x Magnolia liliiflora)



Étienne Soulangé-Bodin (1774-1846), Paris, France, 1820. Small tree or large shrub. Often multi-stemmed. Height up to 7 m and a wide, egg-round crown. Large, fresh, green, narrow reversed, egg-round leaf. Large, tulip-shaped whitish-pink flowers. Flowering period: March-April. To be planted as a specimen tree or shrub.

# Magnolia

fam. Magnoliaceae

## 'Spectrum'

(Magnolia liliiflora 'Nigra' x Magnolia sprengeri 'Diva')



US National Arboretum, Washington D.C., USA, 1962. A hybrid Magnolia tree, which initially has a very narrow habit, later more spreading. Strong grower. Habit is wider than 'Galaxy'. The purple flowers, which appear in abundance after the last night frost, make this hybrid a welcome addition and an enrichment to the Magnolia range. Beautiful and ornamental park tree.

## stellata Star magnolia



Origin: Japan. Large shrub with a height of approximately 3 m. Slow grower. Leaf narrow elliptical. Leaf and flower buds woolly and hairy. Bright white flowers. Tepals are narrow and spread out in a star-shape. The number of tepals can be highly variable. To be planted as a specimen shrub.

## stellata 'Rosea'



UK, 1902. Habit species-specific. The flower buds are softish pink on the outside.

## stellata 'Royal Star'



Pieter Vermeulen (1899-1981), Leiden, the Netherlands. Habit species-specific. The flower buds are pure white, less susceptible to frost. Blooms 7-10 days later than Magnolia stellata.

## 'Sunsation'®

(Magnolia x brooklynensis 'Woodsman' x Magnolia 'Elizabeth')



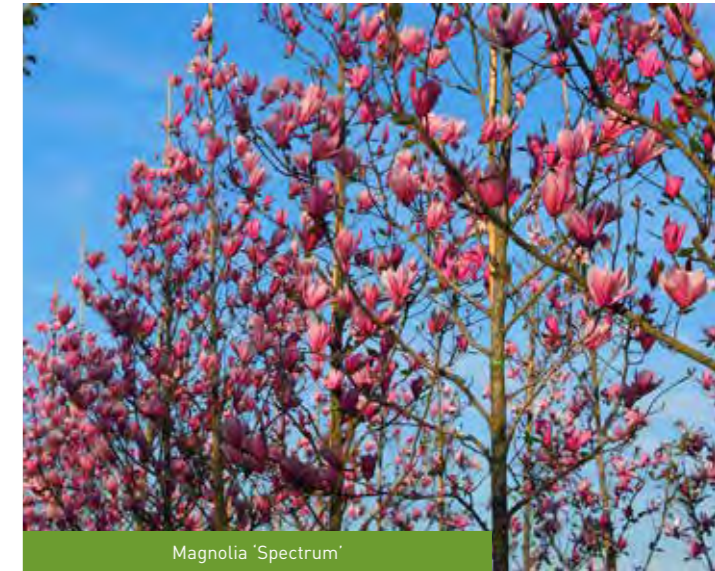
August Kehr (1914-2001), Department of Agriculture, USA, 2000. Wide columnar, strong-growing clone, 7-8 m high and 4-5 m wide. Beautiful yellow flowers with a pink stripe from bottom to top, up to 18 cm in size. Blooms late in May, therefore not susceptible to spring night frost. Yellow autumn colouring. Requires rich, well-drained soil and thrives in full sun to partial shade.

## 'Susan'

(Magnolia lilliflora 'Nigra' x Magnolia stellata 'Rosea')



US National Arboretum, Washington D.C., USA, 1955. Part of the Little Girl Series ('Ann', 'Betty', 'Jane', 'Judy', 'Pinkie', 'Randy', 'Ricki' and 'Susan'). Blooms one month later than stellata, making it less sensitive to late frost. Bush or small tree. Height 5-6 m, width 2-3 m. Fragrant, fuchsia cup-shaped flowers with 6 slightly turned tepals, lighter in colour on the inside. The flowers appear just before the leaves emerge. Sporadically, there can be a second flowering in the middle of summer. Oval-shaped, green leaves up to 20 cm long. Yellow-bronze autumn colouring. Thrives on rich, acidic to neutral, well-drained soils. Sun and partial shade.



Magnolia 'Spectrum'



Magnolia stellata



Magnolia 'Susan'

# Magnolia

fam. Magnoliaceae



Magnolia tripetala

**tripetala** Umbrella magnolia, Umbrella tree



Origin: North America. Large, multi-stem shrub or tree with a round crown. Height 12-15 m, width 10-12 m. Inverted, egg-round very large, glossy green leaves with a light grey-green hairy underside, 30-50 cm long. The 20-25 cm large bowl-shaped cream-white flowers appear in June-July. They spread an unpleasant scent. The fruits are purple-red and approximately 10 cm in size. Grows on fertile, well-drained soils. Specimen tree or shrub.

**virginiana** Sweet bay magnolia, Swamp magnolia (syn. *Magnolia glauca*)



Naturally occurring in swamp areas in Southeastern USA. Is normally evergreen, but in colder areas semi-evergreen. Shrub or multi-stem tree. Height 5-6 m, width 3-4 m. Elongated to oval-shaped, 10-12 cm green leaves with a silver-grey underside. Yellow autumn colouring. Blooms with saucer-shaped, white, 5-7 cm fragrant flowers in June-July. Oblong pink fruits. Thrives on wet, light soils. Only tolerates full sun if the soil is sufficiently moist. Specimen multi-stem or shrub.

**virginiana 'Moonglow'** (syn. *Magnolia virginiana* 'Jim Wilson')



Monrovia Nursery, Azusa, California, USA, 2001. Small tree or large shrub. Rising growth. Height 10 m, width 5.5 m. Beautiful cream-white flowers, smelling after lemon. Flowering period May-June. After the flowering, bright red seeds develop. Leaf is green with a silvery grey underside and these colours contrast beautifully, when the wind moves the leaves.

**'Wada's Memory'** (syn. *Magnolia x kewensis* 'Wada's Memory')



Brian Mulligan, Washington D.C., USA, 1959. A tightly, upward-growing, small tree or large shrub. A selection from the arboretum of the University of Washington, selected from seed of *Magnolia kobus* collected by K. Wada, Japan. The young leaf has a red hue, later turning green. Large, striking flowers. The flowers have 6 pure white tepals (7 cm long). The flowers hang from the end of the twigs and curl downward when they are fully open. The 2 upper tepals are overhanging, making it look as if there are banners hanging from the tree. Flowering period: April.

**'Yellow Fever'** (*Magnolia acuminata* x *Magnolia denudata*)



Ken Durio, Louisiana Nursery, Opelousas, Louisiana, 1980. Upright hybrid. Height 12-14 m, width 6-7 m. In April-May, the pale yellow, fragrant, cup-shaped flowers appear with a light pink base, just before the leaves emerge. Oval-shaped, dark green leaves. Brown-yellow autumn colouring. Grows in full sun to partial shade on fertile, well-drained soils. Street and avenue tree.



Magnolia tripetala

# Malus

fam. Rosaceae



## Wild apple, Crabapple

A genus that comprises 25 species. *Malus* grows on all fertile, well-drained soils that are not too moist. Although wild apples are preferably planted – and grow best – on open locations in parks and gardens, most of the trees listed below can be planted as standard trees in paved surfaces of small streets, along garden paths and such, provided there is sufficient rooting space and the planting hole contains prepared soil, which is well-drained to ensure good root development. Because of their limited size, most wild apple varieties listed here are also suitable for small gardens. If several consecutively blossoming varieties are planted together, one can enjoy five weeks of beautiful blossom.

**'Adams'**



Adams County Nursery, Aspers, Pennsylvania, USA, 1947. Tree or shrub (5-6 m) with a round, vase-shaped, densely branched crown. Buds bronze-coloured to auburn, later turning into light green. Large, single flowers of 4-5 cm, bright pinkish-red, carmine red when budding. Blossoms profusely. Round, hard fruits, carmine red with a red bloom, from mid-August to mid-December. Virtually scabfree. Good replacement for scab-sensitive 'Hopa'.

**'Adirondack'**



Donald R. Egolf, US National Arboretum, Washington D.C., USA, 1974 and released in 1987. Upright tree with a relatively dense crown, more or less scabfree. Height 5 m, width up to 3 m. Leaves mid-green. White flowers and bright red fruits, 6-7 mm. For gardens and public gardens. Hardly cultivated.

**'Almey'**



Morden Experimental Station, Morden, Manitoba, Canada, 1945. Very hardy, upright tree with a height of 4-6 m. Young leaf is purple, later bronze-green. Large, single flowers, (lilac) red, 50 mm, with a star-shaped, white heart. Orange red fruits, 20 mm. Hardly cultivated.



Malus 'Adams'



# Malus

fam. Rosaceae



Malus baccata 'Street Parade'



Malus baccata 'Street Parade'



Malus 'Donald Wyman'

## **baccata 'Street Parade'**



Ton van den Oever, Haaren, the Netherlands, 1982. Moderately tall tree with a height of 6 m and a narrow, egg-shaped crown. Light green shoots, later turning green. Blossoms abundantly with single, pure white flowers of 4-5 cm that do not stain. Pointy, salmon pink flower buds. Small, relatively hard fruits, 15 mm, shiny purple-red, from mid-August to early September. Mildew and scab-free. Also suitable for small gardens. Was supplied before 1982 under the incorrect name of *Malus baccata* 'Pyramidalis Grandiflora'.

## **'Braendkjaer'**



Aksel Olsen (1887-1982), Kolding, Denmark. Small tree with a protruding central leader. Height 4-5 m. Oval-shaped, pointy green leaves. After the light pink buds, the pure white flowers appear, 5-6 cm in May-June. The apples resemble cherries in their shape and colour. Very hardy. Grows on all fertile and well-drained soils. Tolerates pavement. Garden and park tree.

## **'Butterball'**



University of Washington, USA, 1975. Healthy, small tree with a height of 4-5 m, with spreading to slightly hanging branches. Wide and felty light green leaf. Single flowers, 30-40 mm, white with a pink hue, strikingly pink when budding. Yellow, round fruits, 20-25 mm, shiny, with short stalks. Because of its relatively large fruits, it is unsuitable as a street tree, but it can be planted in gardens. Hardly cultivated.

## **'Coccinella'**

(syn. *Malus* 'Courtarrow')



Institut National Recherche Agronomique, INRA, Angers, France. Wild apple that is resistant to bacterial diseases. Grows as a shrub, 3-4 m high and wide. Very beautiful because of its constant purple-red leaf during the entire growing season. Blossoms in April-May, with large, magenta red flowers in many bunches. Purple fruits. This highly disease-resistant variety has been raised from a hybrid of *Malus* 'Evereste' x *Malus* 'Niedzwetskyana'. Hardly cultivated.

## **'Coralburst'®**

(syn. *Malus* 'Coralcole')



Henry A. Ross, Coles Nurseries Inc., Lahaska, Pennsylvania, USA, 1970. Introduced in 1973. Wild apple with a symmetrically round, compact crown. Height and width 4.5 m. Slow grower. Dark green leaf. Blossoms coral-red when budding, pink, double flowers in full bloom, 5 cm. Fruits 12-13 mm, bronze-coloured. Generally very disease-resistant. Hardy. Beautiful, small wild apple for gardens and public gardens. Because of its low crown, not as street tree. Hardly cultivated because of its slow growth.

# Malus

fam. Rosaceae

## **'Courtabri'**

(syn. *Malus* 'Pomzai')



Institut National Recherche Agronomique, INRA, Angers, France, 1989. Seedling from *Malus* 'Evereste'. Dwarfish wild apple for small gardens, planter boxes or squares at shopping centres, etc. Best when top grafted. Develops a small, round crown, 1 m wide. Beautiful carmine red flowers in April that turn white during the flowering period. Excellent fruiting cultivar with small, orange-coloured apples, which are retained on the tree into winter. Ornamental, mini-tree for gardens and container cultivation.

## **'Donald Wyman'**



Arnold Arboretum, Cambridge, Massachusetts, USA, 1971. Named after horticulturist Donald Wyman (1904-1993). Wild apple with a round crown, more loose and spreading than 'Coralburst'. Height and width 5 m. Shiny green leaf, white flowers. Fruits 9-10 mm, bright red and long lasting. Good disease-resistance. Beautiful wild apple for gardens and public gardens.

## **'Evereste'**



Institut National Recherche Agronomique, INRA, Angers, France, 1978. Tree of the year in 2004 in the Netherlands. Scabfree tree with late leaf drop. Blossoms abundantly in white bunches, typical apple blossom. Fruits yellowy-orange, darker when ripe. Orange-yellow autumn hues.

## **floribunda**



Origin: Japan (1856). Old, very good, Japanese variety. Height 6 m, with a domed, ovate crown with overhanging branches, covered with masses of light pink flowers, flowering to almost white, each flower is 30 mm across. Fruit appears in masses, yellow-green, later with a slightly red blush, 8 mm, retained on the tree a long time. One of the most beautiful and strongest wild apples for parks, public gardens and larger gardens. Scabfree.

## **'Golden Hornet'**



John Waterer (1783-1868) Sons & Crisp Ltd, Bagshot, UK, 1949. Seedling from *Malus toringo*. Height 6 m. Fresh green leaf. Buds pink, then white flowers appear. Deep yellow fruits, long retained, 22-25 mm, in strings of 3-4 fruits together.

## **'Gorgeous'**

(*Malus sieboldii* x *Malus halliana*)



Hayward Wright, Avondale, Auckland, New Zealand, 1925. Height 5 m. Fresh green leaf. Blossoms profusely in a typical 'apple blossom colour' that turns to white. Fruit very beautiful, shiny red, 22-25 mm. Strikingly beautiful wild apple.



Malus 'Evereste'



Malus 'Evereste'



Malus 'Golden Hornet'



Malus hupehensis 'Arie Mauritz'



Malus 'John Downie'

## 'Greenstar'



Develops into a small tree shape with a height of 5-6 m. Healthy tree, growing quickly in its juvenile stage, forming a round crown at a later age. Has shiny, deep green leaves. Buds pinkish-red, then blossoms abundantly with single flowers, turning from pinkish-white to pure white. Beautiful park tree and specimen tree for large gardens. Hardly cultivated.

## 'Hopa'



N. Hansen, South Dakota Agricultural Experiment Station, USA, 1920. Good-growing, robust tree with a height of 4-5 m and wide spreading branches. Single flowers, dark lilac-pink to light lilac-red, 30-35 mm. Early flowering. Bright red fruits, 18-20 mm. Hardly cultivated.

## hupehensis 'Arie Mauritz'



Tree specialist Jan P. Mauritz introduced this cultivar and named it after his father. Final height 6-8 m. Fast growth rate in both length as trunk width. In its juvenile stage, an ascending habit, with a pyramid-shaped, full, and regularly shaped crown. When maturing, the crown becomes more ovoid. Emerging leaf is reddish at first, then turns into a faintly shiny, mid-green colour. Ovoid, oblong leaves with a sharply serrated margin. Orange autumn colouring. Light pink buds open halfway through May. Large, white flowers with 5 oval petals. Brilliant, shiny red, small apples with a long stalk. Larger and more numerous than other hupehensis cultivars. Apples are retained on the tree far into winter. Very healthy. Prefers fertile, humus-rich and well-drained soil, not too wet. Tolerates pavement and suitable for coastal areas, as it endures salty onshore winds. Hardy and very appropriate for public spaces.

## 'Jewelcole'

(syn. Malus 'Red Jewel')



William D. Collins, Circleville, Ohio, USA, 1972. Rising, wide ovate to wide pyramidal, with almost horizontally spreading branches in the lower part of the crown, more upright in the higher part. Strong grower. Height 4.5 m, width 3.5 m. Leaves shiny dark green, yellow autumn colour. Blossoms profusely and relatively early with white single flowers. Fruits 12-15 mm, bright red, in moderate winters often retained on the tree into spring. Disease resistant and hardy. Beautiful, small wild apple for gardens and public gardens. Occasionally used as a street tree, same soil and location factors that apply to 'Red Baron'. The crown should be pruned in time when the tree is young. Requires full sun and a slightly sheltered planting location.

## 'John Downie'



E. Holmes, Lichfield, UK, 1885. Robust, upward-growing tree with a height up to 5 m and a rather loose, irregular crown. Blossoms profusely with large, white single flowers, 40-50 mm, the buds have a light pink hue. Shiny green, ovoid foliage. Heavily fruit bearing, fruits bright orange-red, often with a deep blush, 25-30 mm, oblong. Beautiful wild apple, with rather large, tasty fruits. A very special tree for gardens.

## 'Liset'

(Malus 'Lemoinei' x Malus toringo)



Simon Godfried Albert Doorenbos (1891-1980), The Hague, the Netherlands, 1930. Small tree with a rather dense crown, height up to 6 m. Very healthy, shiny purple leaf. Single flowers, lilac-red, rather large. The best red-blossoming tree. Shiny fruits, dark purple to purplish-red, 15 mm, long lasting. Hardly cultivated.

## 'Madonna'

(syn. Malus 'Mazam')



Lake County Nursery, Perry, Ohio, USA, 1983. A double-flowered, white ornamental apple. Narrow crown in its juvenile stage, later slightly wider, upright. The final height is 5-6 m with a width up to 3.5 m. Buds bronze-green and later turns dark green. The white flowers that slowly open in April-May are retained on the tree longer than most ornamental apples. Consequently, it has flowers earlier and longer. Very fragrant flowers. Fruits are 12-13 mm, glossy red and retained on the tree far into winter. Very healthy, disease resistant and requires well-drained, slightly acidic soil. Suitable for public and private gardens. Also as a street tree on open green verges in sheltered, sunny places, if the lowest branches are pruned in time when young.

## 'Makamik'

(Malus baccata x Malus pumila 'Niedzwetzkyana')



I. Preston, Central Experimental Farm, Ottawa, Canada, 1928. Named after Lake Makamik in Western Quebec, Canada. Strong, healthy tree with a round crown. Height 4-5 m. Young leaf purple, later turning dark green. Dark lilac-pink flowers with a star-shaped white heart, 40 mm. Fruits are bright red, 20-25 mm. Very hardy.

## 'Mokum'



Morden Experimental Station, Morden, Manitoba, Canada, 1930. Rising tree (6-8 m high), with rather light side branches. Obovate leaves with a pointy tip, bronze-coloured. Single, purplish-pink flowers (3-4 cm). Round fruits (12-18 mm), red to purplish-red. Retained on the tree until the end of November. The parents of this cultivar are Malus 'John Downie' and Malus 'Liset'. To be used in parks, public gardens and large private gardens.

## 'Professor Sprenger'



Simon Godfried Albert Doorenbos (1891-1980) The Hague, the Netherlands, 1950. Scabfree, small tree, with a height up to 6 m. Green leaf with a golden-yellow autumn colour. Blossoms in a typical 'apple blossom colour', that turns to white. Fruits 15 mm, orange-yellow, later deep orange, retained on the tree until December. Heavily fruit bearing. One of the most beautiful wild apples.



Malus 'Madonna'



Malus 'Makamik'



Malus 'Mokum'

# Malus

fam. Rosaceae



Malus 'Professor Sprenger'



Malus 'Red Sentinel'



Malus 'Red Sentinel'

## 'Profusion'



Simon Godfried Albert Doorenbos (1891-1980) The Hague, the Netherlands, 1938. Tall-growing tree, with a height up to 7 m, with overhanging twigs. Purple leaf, sometimes 3-lobed. Very abundantly blossoming. Single flowers, dark red to purple-red, 35 mm. Fruits dark purple, later turning ruby-red, rather small, 10-15 mm. Hardly cultivated.

## 'Radiant'



Minnesota Agricultural Experimental Station, USA, 1958. Wide rising tree, height 4.5-6 m. Buds dark bronze-red, later turning green. Late flowering with single pinkish-red flowers of 25 mm in abundance. Flattish, round fruits of 10 x 18 mm, cherry-red, retained on the tree until mid-October. Almost scabfree and virtually resistant to mildew. Retains its leaves well. Very suitable for public green spaces and gardens.

## 'Red Baron'



Simpson Nursery Company, McMinnville, Tennessee, USA, 1972. Crabapple with a narrow, almost columnar crown 5-6 m high and only 2.5 m wide. Purple foliage, in full summer turning to bronze-green. Dark red flowers. Fruits dark red, 12-13 mm. Disease resistant. Beautiful wild apple for private gardens and public gardens. Because of its narrow upright shape, as a street tree in open green verges in sunny locations on fertile soils that are not too moist.

## 'Red Obelisk'®

(syn. Malus 'D.V.P.Obel')



Best Select, Melle, Belgium. Selection that develops into a columnar small tree shape. Height 5 m, width 2 m. Blossoms with large, pink single flowers that later turn white in May just before the red-coloured emerging leaf. Small, shiny purple-red apples, inverted pear shape 2-3 cm in size and are retained on the tree for a long time. Edible. Free from scab and mildew. For fertile, moderately moist and well-drained soils. For smaller gardens. Street and avenue tree on green verges.

## 'Red Sentinel'

(Malus baccata x Malus prunifolia)



Hayward Wright, Avondale, Auckland, New Zealand, 1925. Excellent growing tree, height 5-6 m with a round crown. Striking because of its cherry-sized, deep red fruits that are retained on the tree until December. Shiny green leaves. Pink buds and white flowers. Best planted in parks, public gardens and large private gardens.

## 'Robinson'



Hobbs Nursery, Indianapolis, Indiana, USA, 1980. Introduced in Europe by Boomkwekerij Udenhout. American wild apple with a wide spreading, upright, rounded crown. Height and width 7.5 m. Very fast grower. Bronze-green foliage. Single, deep pink flowers. Fruits 9-10 mm, red. Very healthy, big wild apple for parks and public gardens. Very hardy.

# Malus

fam. Rosaceae

## 'Royalty'



W. L. Kerr, Sutherland, Canada, 1958. Wide, oval crown, 6 m high and 4 m wide. Elliptical leaves, 6-8 cm, emerging red then turning purple-brown. Yellow autumn colouring. Single, crimson red flowers in May. Dark red apples, 1.5 cm. Hardy. Grows on all fertile, well-drained soils. Tolerates pavement. Garden and park tree.

## 'Rudolph'

(syn. Malus sargentii 'Rudolph')



F.L. Skinner, Dropmore, Manitoba, Canada, 1954. Upright tree. Emerges deep bronze-red, then turns dark bronze-green until late autumn. Blossoms profusely with large, single pinkish-red flowers, 4-5 cm, carmine red when budding. Flowering period: May. Fruits more or less oblong, 15 x 18 mm, orange-yellow, in abundance and long retained. Not easily affected by scab. Because of its small fruits, it is very suitable for gardens and public green spaces, occasionally also as an avenue tree on open green verges. Very hardy.

## 'Sugar Tyme'®

(syn. Malus 'Sutyzam')



Lake County Nursery, Perry, Ohio, USA, 1986. Introduced in Europe by Boomkwekerij Udenhout. Crabapple with a wide egg-shaped to ovate, spreading crown. Height up to 6 m, width 4.5 m. Initially narrow, later growing wider, spreading. Green foliage. Blossoms profusely, budding salmon red, then single, white, open fragrant flowers. Fruits 12-13 mm, bright red, retained on the tree into winter. Very good grower, highly disease resistant, particularly against fire blight. Hardy. Beautiful wild apple for large private gardens and public gardens. Requires full sun and well-drained, fertile and slightly acidic soil. Can also be planted in avenues, provided the lower spreading branches are pruned during the juvenile stage. Best on open green verges.

## sylvestris European wild apple



Origin: Europe. Develops an irregular, round crown. Shiny, green, oval to ovoid leaves. Single, white to pale pink flowers followed by green-yellow ovoid apples, 3-4 cm in size. Requires nutritious, well-drained soils. Susceptible to onshore winds.

## toringo Japanese crabapple

(syn. Malus sieboldii)



Origin: Japan, Korea. Upright tree with a height up to 4-5 m, sometimes higher with a wide spreading crown. Striking and valuable because of its late flowering, yellow autumn colour and massive fruit bearing quality. Pinnately lobed to pinnate leaf. Budding pink, then white flowers in late May. Round, pea-sized, yellow fruits, sometimes slightly red, until the end of October. As a large specimen shrub in parks.



Malus 'Rudolph'



Malus 'Sugar Tyme'



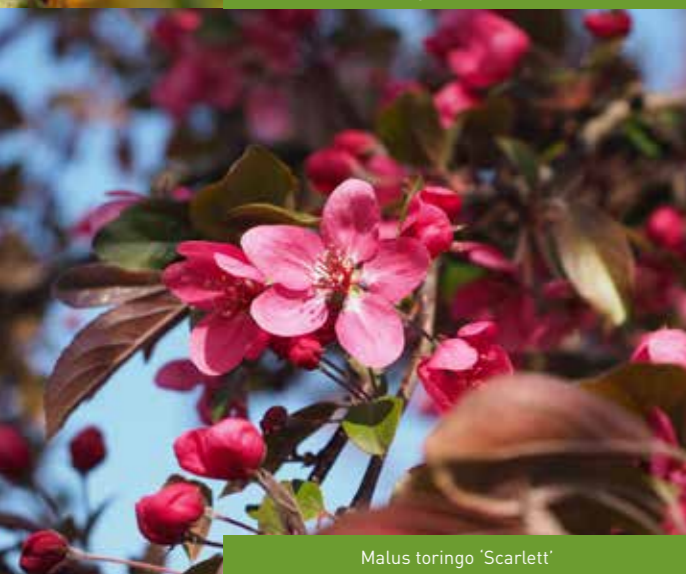
Malus toringo



Malus toringo 'Brouwers Beauty'



Malus toringo 'Brouwers Beauty'



Malus toringo 'Scarlett'

## toringo 'Brouwers Beauty'



Naktuinbouw, Zeewolde, the Netherlands, 1996. Upright tree with a height of 5-6 m with a strong central leader. Wide spreading crown with overhanging branches. Leaves ovate to egg-shaped, shiny green to dull green. Sharply serrated leaf margin. Single flowers, lightish pink verging on white. Blossoms profusely. Orange-yellow, round fruits, (8-10 mm), retained on the tree until the end of October. Slightly susceptible to scab. Can be planted in wide streets.

## toringo 'Rosea'

(syn. Malus sargentii 'Rosea')



Rochester Parks, New York, USA, 1990. Small tree with more or less spreading branches. Green, egg-shaped leaves, on long shoots, 3-lobed and slightly deeper indented. Budding dark purple pink, single flower inflorescence, turning from light pink to white. Purplish-red fruits, round, 8-9 mm. Moderately susceptible to scab. This selection differs from var. sargentii because of its purplish-pink flower buds, which attractively turn colour to a very light pink upon opening. For parks and public and private gardens.

## toringo 'Scarlett'

(syn. Malus 'Scarlett')



Danish selection. Small tree, 6 m high and 3 m wide. Purple leaves in early summer that turn green before eventually turning bright orange and red with purple accents in autumn. In April-May, rich, pink flowers are followed by purple fruits. Deeply lobed leaves. Grows on well-drained and nutritious soils. Use as a specimen tree/ shrub in full sun or partial shade in small gardens or narrow streets. Shows good disease resistance.

## toringo var. sargentii

(syn. Malus sargentii)



Origin: Japan, Kurile Isles. Named after Botanist Charles Sprague Sargent (1841-1927). Wide, low shrub or small tree, 5-6 m high. Green, partly 3-lobed leaf with an orange-yellow autumn colour. Blossoms profusely with small, pure white, 20-25 mm flowers, slightly pinkish when budding, fragrant. Very small fruits, approx. 8 mm on long stalks, dark red. Very ornamental shrub because of the abundant flowers and fruit.

## tschonoskii



Origin, Japan. Tree with an upright, rather pyramidal crown. Height 8-10 m. Blossoms with relatively large, white flowers and bears very few yellowish-green fruits. Yellow-orange to flaming crimson autumn colouring; a feature that is more striking than the rather sparse fruit production.

## tschonoskii 'Belmonte'



Naktuinbouw, Zeewolde, the Netherlands, 1996. Tree with a wide, rising crown. Height 8-10 m. The mother tree is in the Belmonte Arboretum in Wageningen, the Netherlands. Blossoms early May with inconspicuous, white flowers and bears little or no fruit. Yellow-orange to flaming crimson autumn colouring.

## 'Van Eseltine'

(Malus x arnoldiana x Malus spectabilis)



New York Experimental Station, USA, 1938. Strikingly flowering wild apple with a wide columnar crown. Height 5-6 m. Blossoms with very large double flowers, beautifully nuanced deep pink, 45 mm. Fruits rather inconspicuous, yellowish-green with some dark red hues, 20 mm. Very valuable garden tree.

## 'Vanguard'



University of Minnesota, USA, 1974. Upright tree with initially dark bronze-red, later bronze-green leaves. Flowers are sometimes slightly filled, budding carmine red, flowering to lilac-pink, moderately early. Small, red fruits, 12-16 mm. For public gardens and parks, also as an avenue tree on green verges.

## 'Velvet Pillar'™

(syn. Malus 'Velvetcole')



William Collins, Circleville, Ohio, USA, 1980. Introduced in Europe by Boomkwekerij Udenhout. Upright crown and bending, inclining branches. Height 6 m, width 4 m. Purple foliage. Single, pinkish-red flowers. Reddish fruits, sparse. Is also cultivated as a shrub in the USA and used as a loose hedge plant because of its shape. Very disease resistant and hardy. For gardens and parks because of its shape and the colour harmony between leaves and flowers. Because of its upright habit, it can also be used as an avenue tree. Soil and location factors that apply to 'Red Baron'. Hardly cultivated.

## 'White Angel'™

(syn. Malus 'Inglis')



Dugan Nursery, USA, 1962. Rising to spreading crown. Height 5-6 m. Leaf fresh green, later dark green. Budding flesh-coloured pink and blossoming with single, white flowers, 15-18 mm. Moderately sized, bright red fruits.

## 'Wintergold'

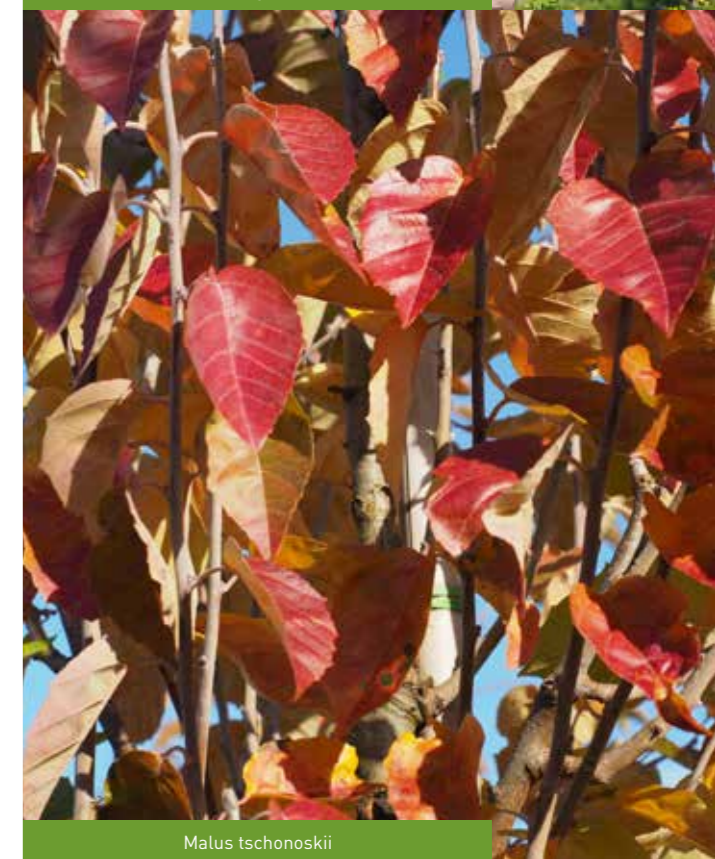
(syn. Malus sieboldii 'Wintergold')



Simon Godfried Albert Doorenbos (1891-1980) The Hague, the Netherlands, 1938. Robust tree with a round crown and a height up to 7 m. Leaf fresh shiny green. Budding pink and abundantly blossoming with pure white flowers, 30 mm. Many bright yellow fruits, 12-15 mm that are retained on the tree until December.



Malus toringo 'Scarlett'



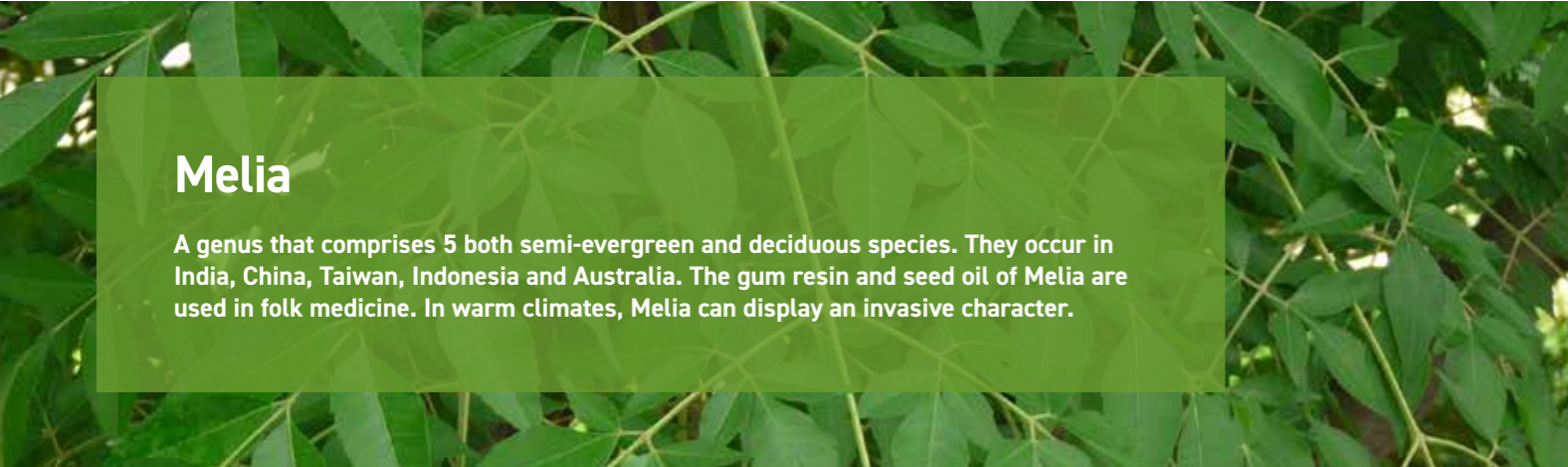
Malus tschonoskii

# Melia

fam. Meliaceae

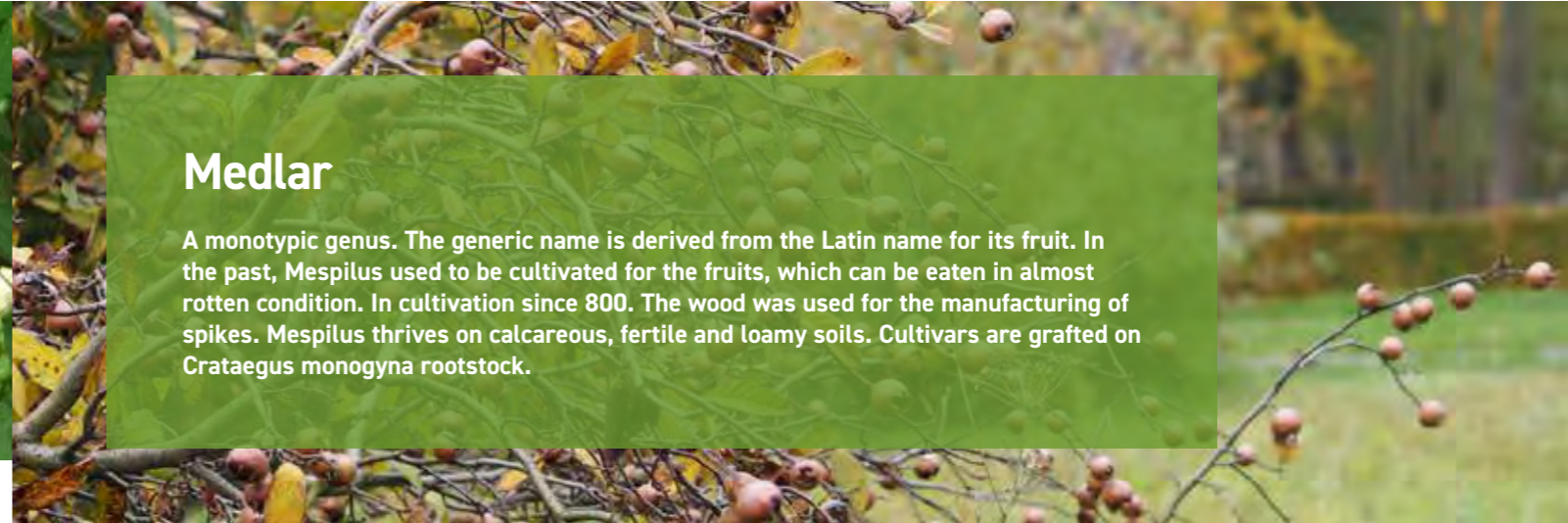
# Mespilus

fam. Rosaceae



## Melia

A genus that comprises 5 both semi-evergreen and deciduous species. They occur in India, China, Taiwan, Indonesia and Australia. The gum resin and seed oil of Melia are used in folk medicine. In warm climates, Melia can display an invasive character.



## Medlar

A monotypic genus. The generic name is derived from the Latin name for its fruit. In the past, Mespilus used to be cultivated for the fruits, which can be eaten in almost rotten condition. In cultivation since 800. The wood was used for the manufacturing of spikes. Mespilus thrives on calcareous, fertile and loamy soils. Cultivars are grafted on Crataegus monogyna rootstock.



Melia azedarach

**azedarach** Indian lilac, Chinaberry tree



The epithet *azedarach* means noble in Persian. A tree that grows up to 15 m with a loose crown. Develops long twigs. Leaves are doubly pinnate and alternately arranged. The leaflets are 8 cm long and have a coarse, serrated margin. Soft green in colour. Flowers and leaves bud simultaneously. Flowers in panicles up to 30 cm long with a typical lilac fragrance. Pale lilac flowers, 2 cm in size. Round, golden-yellow fruits, very poisonous. Red to dark brown trunk, which is grooved once established. Grows on all soils, but prefers a warm, sunny location. Extract from the leaves can be used as an anti-mosquito remedy.



Melia azedarach

**germanica** Common wild medlar



Origin: Western Asia; in Europe a feral plant. Heavy, multi-stem shrub or tree on a short trunk with a wide, heavily branched irregular crown. Height up to 6 m. Branches with short shoots that grow out to thorns. Dark green leaf, up to 12 cm long, auburn to yellow in autumn. Blooms in May, with single, disc-like, white flowers, 30-40 mm. Edible, brownish-green, oblate-round fruits, 30 mm, with a large, open husk and long, remaining calyx. Park tree for fertile, moist soil. Garden and park tree.

**germanica 'Bredase Reus'**



The Netherlands. Fruits larger than species-specific; up to 6 cm in size. Heavily fruit bearing variety. Other characteristics same as the species.

**germanica 'Westerveld'**



Naktuinbouw, the Netherlands. A heavily fruit bearing Mespilus variety. Fruits moderately large. Not susceptible to frost damage.



Mespilus germanica 'Bredase Reus'



Mespilus germanica

# Metasequoia

fam. Sequoiodeae

# Morus

fam. Moraceae



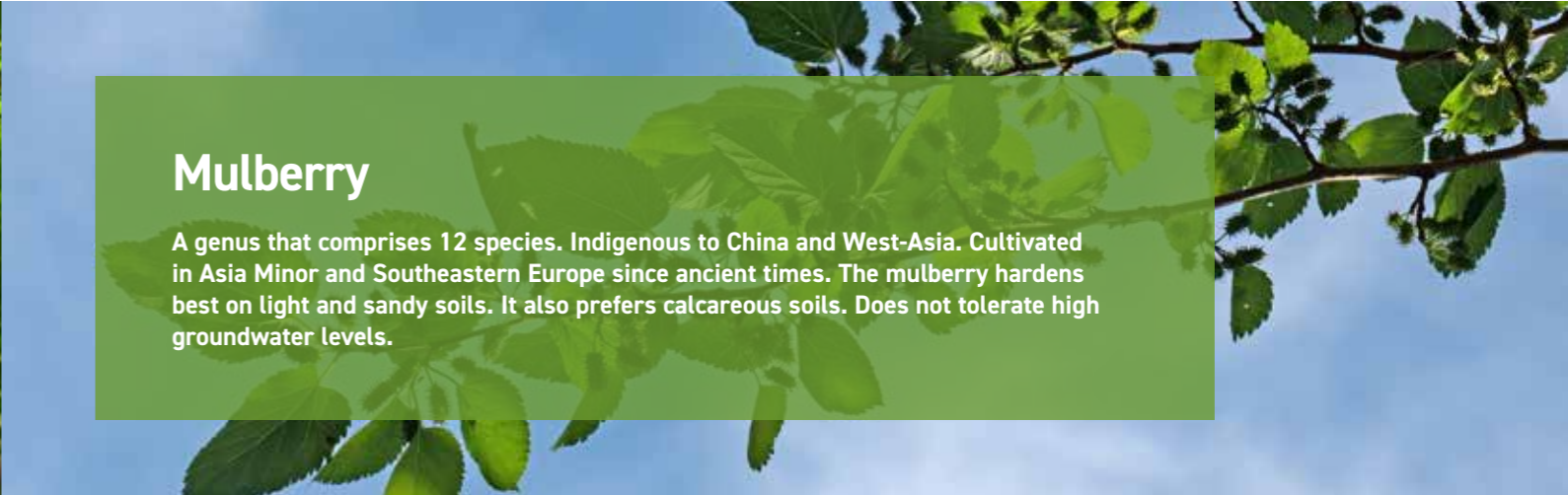
## Dawn redwood

A monotypic genus. Originally from Central China where it was rediscovered in 1941. Deciduous conifer with a conical, uniform habit. Large tree with a fast growth rate and a straight trunk. Metasequoia closely resembles Taxodium but differs in the leaf arrangement: Taxodium has alternately-arranged needles and Metasequoia has oppositely-arranged needles.



## Mulberry

A genus that comprises 12 species. Indigenous to China and West-Asia. Cultivated in Asia Minor and Southeastern Europe since ancient times. The mulberry hardens best on light and sandy soils. It also prefers calcareous soils. Does not tolerate high groundwater levels.



Metasequoia glyptostroboides

**glyptostroboides** Water cypress, Dawn redwood



Origin: Central China. Deciduous conifer from the primeval age, height 25-30 m. Conical habit with a perfectly vertical trunk, slightly resembling Taxodium, also in the shape of its leaf. Light green needles, oppositely arranged, brown autumn colour. Short hanging cones, round to cylindrical. Resistant to urban air pollution. Very hardy and wind resistant. Fast grower on virtually any slightly humous soil. Very ornamental park tree, as a specimen tree or in small groups.

**glyptostroboides 'Fastigiata'**



Resembles the species. Stays more compact in its juvenile stage. Conical habit with a perfectly straight trunk. Light green needles, brown autumn colouring.

**glyptostroboides 'Goldrush'**

(syn. Metasequoia glyptostroboides 'Golden Oji', Metasequoia glyptostroboides 'Ogon')



Kameyama Breeding Station for Forest Tree Improvement, Kameyama, Japan, 1974. Pyramidal crown, height 10-15 m. Red-brown trunk, which later peels in long strips. Brownish-red twigs. Yellow needles, compound and oppositely arranged. Golden-yellow to orange autumn colouring. Inconspicuous flowering in May. Small, green to red-brown, ovate to spherical cones, 2-3 cm. Grows on all soils. Hardy and tolerates pavement and pollution. Suitable for wide profiles. Park tree.



Metasequoia glyptostroboides

**alba** White mulberry



A host plant for silkworms in China. Medium-sized, monoecious tree with a round crown, height 10-15 m. Often also as a shrub. Leaf irregularly shaped, 6-12 cm long, often deeply indented and with a rough feel, light green. Edible fruits, white, with a light red hue. Park tree for sheltered, sunny planting locations.

**alba 'Fruitless'**



This cultivar bears no fruit, which is an advantage when the tree is planted as a parasol / roof shape. Beautiful, fresh green leaves. May be planted as an attractive tree in gardens and parks.

**alba 'Macrophylla'**

(syn. Morus alba 'Platanifolia')



France, 1815. Forms tough, strong shoots with large, palmately lobed leaves up to 20 cm long and 15 cm wide. The leaf shape and size show a closer resemblance to Morus nigra rather than the species. However, the foliage is smoother, shinier and juicier. The small fruits are red to blackish-red. Because of its strong branches and the remarkably large leaf, it is a striking park tree on species-specific planting locations.

**alba 'Nana Issai'**



Top grafted. A slow-growing tree with a shrub-like crown. Leaf size irregular, 12 cm long, 9 cm wide, egg-round to wide ovate. Generally non-lobed and hardly lacinate. Heavily fruit bearing cultivar with deliciously sweet fruits. Suitable for small gardens and particularly suited as a fruit tree.



Morus alba 'Macrophylla'



Morus alba 'Macrophylla'

# Morus

fam. Moraceae



Morus alba 'Macrophylla'



Morus nigra

## alba 'Pendula'



The Netherlands, 1890. Top grafted weeping variety with a small, round, domed crown with hanging branches and twigs. Attractive specimen tree for parks and larger gardens.

## alba 'Pyramidalis'

(syn. Morus alba 'Fastigiata')



France, 1855. A columnar cultivar with a rather compact, wide columnar crown, but with some outward bending branches. Height 10-15 m. Leaves ovate to heart-shaped, shiny green. White, false fruits, species-specific. For parks and public gardens.

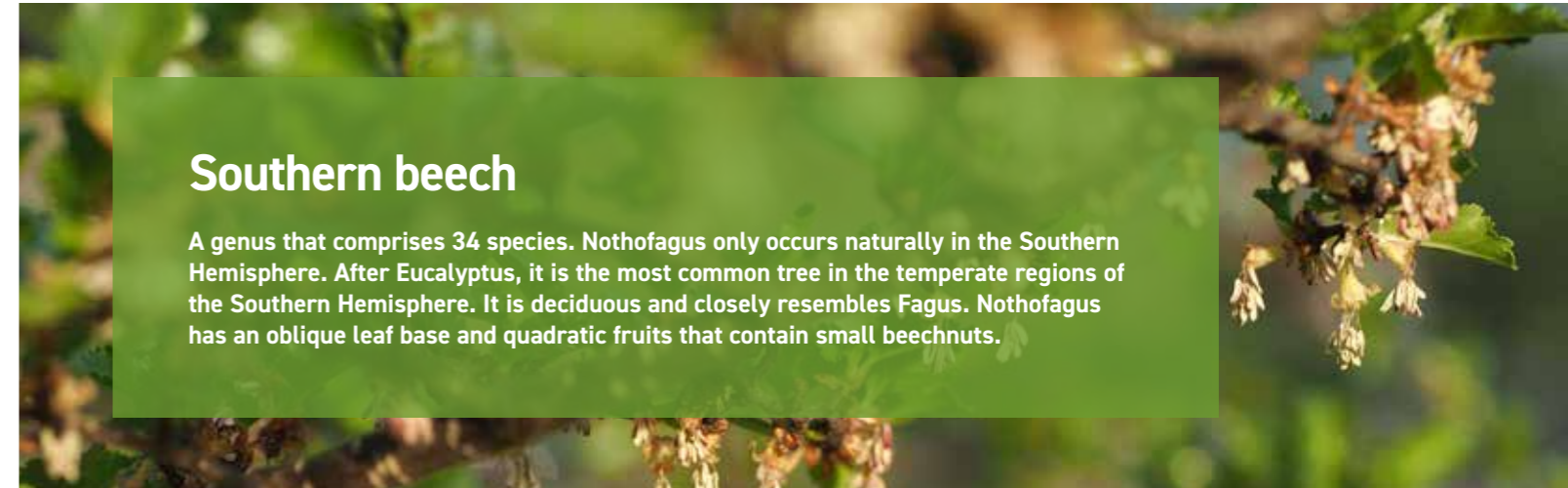
## nigra Black mulberry



Origin: West Asia. In the old days, often used as a wall shrub. Large shrub or small tree on a short, crooked trunk, often with many knots, and thick greyish-green bark. Height 5-10 m. Leaf heart-shaped, roughly overgrown with hairs and less deeply indented than Morus alba. Young twigs are slightly susceptible to frost damage. Deep red to black tasty fruits. Very characteristic tree for parks, estates and large gardens on sunny, warm locations.

# Nothofagus

fam. Nothofagaceae



## Southern beech

A genus that comprises 34 species. Nothofagus only occurs naturally in the Southern Hemisphere. After Eucalyptus, it is the most common tree in the temperate regions of the Southern Hemisphere. It is deciduous and closely resembles Fagus. Nothofagus has an oblique leaf base and quadratic fruits that contain small beechnuts.

## antarctica False beech, Southern beech, Nirre



Origin: Southern Chile. Small, deciduous tree or more often, a characteristic shrub with a height of 5-10 m. Transparent, open crown. Main trunks are strongly rising with spreading side branches. A fishbone-like pattern of fine twigs with numerous stretched white lenticels on the dark bark. Small, egg-round leaves with a slanting base. Yellow autumn colouring. Very ornamental specimen tree for nutritious soils and sunny locations.

## nervosa

(syn. Nothofagus procera)



Origin: Chilean Andes Mountains. Good growing, deciduous tree with 4-10 cm long leaves that strongly resemble those of Carpinus. Naturally growing to a height of 20-24 m. An upward-growing, very special park tree. Very susceptible to frost. Hardly cultivated.

## obliqua Roble beech



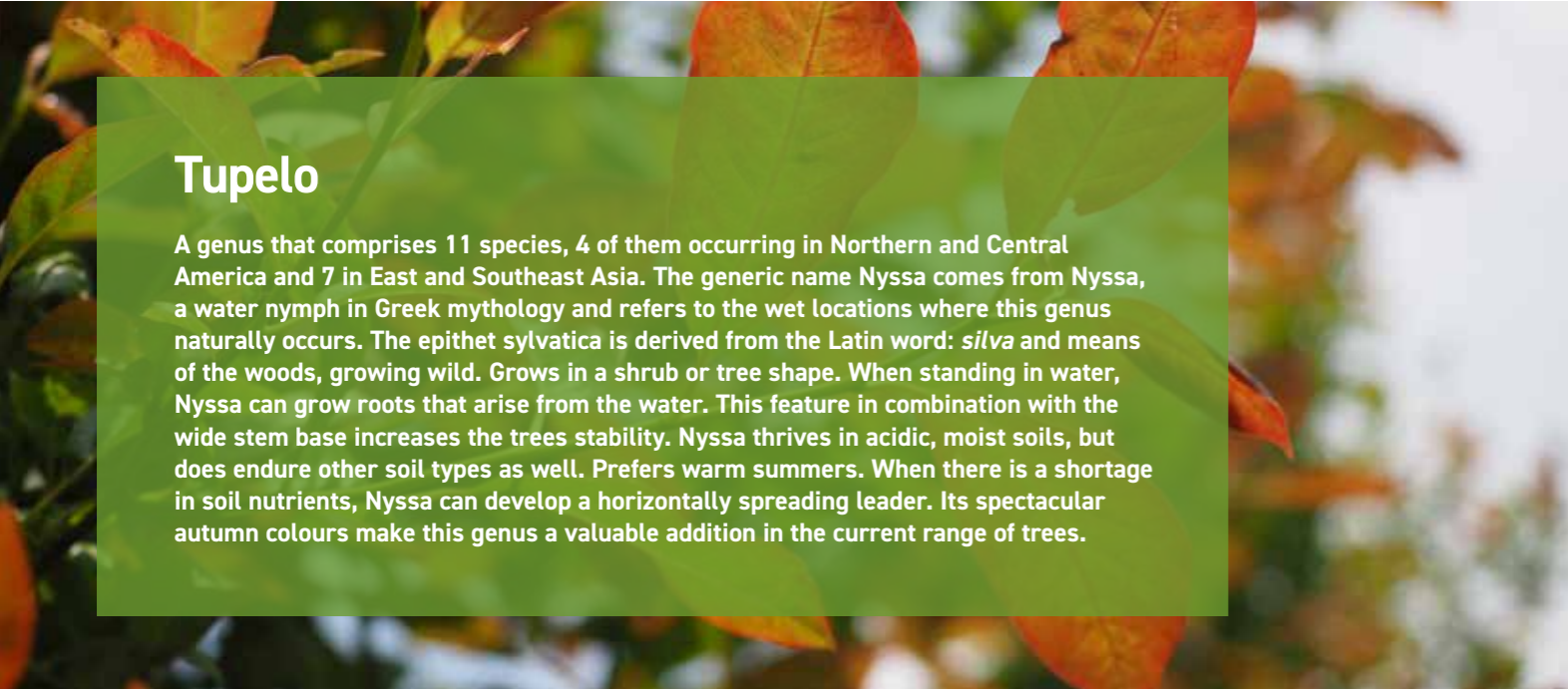
Indigenous to Chile, Argentina. Deciduous tree with larger leaves than Nothofagus antarctica. Height approximately 25 m. A major provider of timber in the regions where it occurs naturally. Nothofagus obliqua wood resembles oak wood, which explains its common name Roble beech (roble is Spanish for oak). Park tree. Hardly cultivated.



Nothofagus antarctica



Nothofagus antarctica



## Tupelo

A genus that comprises 11 species, 4 of them occurring in Northern and Central America and 7 in East and Southeast Asia. The generic name Nyssa comes from Nyssa, a water nymph in Greek mythology and refers to the wet locations where this genus naturally occurs. The epithet *sylvatica* is derived from the Latin word: *silva* and means of the woods, growing wild. Grows in a shrub or tree shape. When standing in water, Nyssa can grow roots that arise from the water. This feature in combination with the wide stem base increases the trees stability. Nyssa thrives in acidic, moist soils, but does endure other soil types as well. Prefers warm summers. When there is a shortage in soil nutrients, Nyssa can develop a horizontally spreading leader. Its spectacular autumn colours make this genus a valuable addition in the current range of trees.



Nyssa sylvatica

### **sylvatica** Black tupelo, Black gum



Origin: Eastern North America. Tall, upright tree with a wide, regular crown. In the homeland, it grows up to a height of 20 m. There it is often used for roadside planting, even in paved surfaces, but this is not recommended in Europe. Its natural habitat is moist or even marshy soil. Leaves long, pointy on both sides, deep green. Splendid orange and red autumn foliage. The fruits are egg-shaped and dark blue. Beautiful park tree on fertile, moist soils and in sunny planting locations.

### **sylvatica 'Autumn Burst'** PBR

(syn. Nyssa sylvatica 'Jolep4')



Boomkwekerij John De Lepper, Hulsel, the Netherlands, 2017. Very fast-growing selection. Grows in an obelisk-shape. Shiny green, narrow oval, pointy leaves. Flaming red autumn colouring. Grows on all fertile soils. Does not tolerate pavement. Very hardy. Specimen and park tree.

### **sylvatica 'Big Lady'**<sup>®</sup>



Boomkwekerij John De Lepper, Hulsel, the Netherlands. A fast and elegant growing well-thickening Nyssa. Has gracefully hanging branches and a dense crown. Shiny green leaves that turn yellow-orange in autumn. Very hardy. Grows on all soils. Disease and insect free.

### **sylvatica 'Red Rage'**<sup>®</sup>

(syn. Nyssa sylvatica 'Haymanred')



Mike Hayman, Louisville Botanical Garden, Indiana, USA. Wide, pyramidal-growing, 10-12 m high and 6 m wide. Forms a straight central trunk. Dark green, very shiny leaves that emerge red and purple-red to red in autumn. Seedless selection. Resistant to leaf spot disease. Grows on all (slightly) acidic and well-drained soils. Sun and partial shade. Can withstand pollution.

### **sylvatica 'Wildfire'**



A selection from Nyssa sylvatica. New foliage emerges bright red, then matures to a dark, shiny green leaf that keeps its colour until late summer. Spectacular autumn foliage from yellowish-orange to purple. Stays smaller than the species.



Nyssa sylvatica



Nyssa sylvatica 'Wildfire'



Nyssa sylvatica 'Wildfire'



# Ostrya

fam. Betulaceae

# Parrotia

fam. Hamamelidaceae

## Hop hornbeam

A genus that comprises 8 species. The name *Ostrya* is derived from the Greek word *ostrua*: bone, referring to its very hard wood. *Ostrya* is closely related to *Carpinus* and strongly resembles that genus. The hop hornbeam has male catkins that appear already in winter, *Carpinus* has catkins that appear in spring. *Ostrya* endures drought extremely well, is wind-resistant and reasonably tolerant to road salt. Little susceptibility to insects and diseases.

## Ironwood

A genus that comprises only 2 species: *Parrotia persica* and the in 1992 discovered *Parrotia subaequalis*. The genus is named after Friedrich Parrot (1791-1841), an 18th century physicist. The common name Ironwood refers to the heavy and hard wood of *Parrotia*. The genus naturally occurs in (small) river valleys. During periods of prolonged drought, branches in the top of the crown can desiccate.



*Ostrya carpinifolia*

### **carpinifolia** European hop hornbeam



Origin: Southern Europe, Asia Minor. Medium-sized tree with a height of 15-18 m high and a wide egg-round to spherical crown. Closely resembles *Carpinus betulus*. Once established, the main trunk forks. Wide spreading side branches, slightly hanging twigs in the lower part of the crown. At a later age, the trunk develops a dark greyish-green, scaly bark. Male catkins develop early, even before winter. Flowers abundantly before the leaves emerge, with long yellowish-green catkins. Fruits strongly resemble hops, 3-5 cm long. Endures shade. Requires good airy soil, but its soil requirements are less demanding than those of *Carpinus betulus*. Attractive park tree, but can also be used as an avenue tree on green verges. Very strong, hardy and wind resistant. Good city tree, one of the most undervalued trees.

### **carpinifolia 'F.C. Moree'**



Bart van de Sluis, Boomkwekerij 't Herenland, Randwijk, the Netherlands, 2000. Selected from seedlings. Named after former chairman of the Tree Nursery Association *Kring Opheusden*, Frans Moree. This upright tree with a regular pyramidal branched crown has a very striking upright branch position of 30-45°. Grey-brown trunk. The young twigs are soft grey pilose, later becoming bald and shiny, olive-green to olive-brown. Egg-round to oval-shaped leaves, 6-14 cm long and 4-9 cm wide. Doubly serrated and dentate. Flowers in April-May, with yellow-green catkins. The male catkins develop in autumn. The hop cone-like fruits are present throughout the summer and partially in autumn. No specific soil requirements. Free from spider mite, rust mite and louse. Wind resistant and very hardy. Suitable as a street, avenue and park tree.

### **virginiana** American hop hornbeam



Habit similar to *Ostrya carpinifolia*, height 15-20 m. Leaf egg-shaped to lancet-shaped, 6-12 cm long. A very beautiful and good-growing park tree that is certainly recommended for its graceful habit and beautiful autumn colour. Application similar to *Ostrya carpinifolia*.

*Ostrya carpinifolia* 'F.C. Moree'

### **persica** Persian ironwood



Indigenous to Iran. The epithet *persica* means *from Persia* (Iran). A very beautiful and large specimen can be found in the Oosterpark, Amsterdam. Probably one of the oldest in the Netherlands. Final height and width 10-11 m. A characteristic, wide, flat crown. Naturally, a bushy tree with several heavy main branches, but also cultivated as a standard tree. Slow grower. Flowers early in spring with spherical, red flowers. Obovate leaves, glossy deep green, emerging red-edged. Early autumn colouring from light yellow to orange, scarlet to deep red-brown. The peeling bark resembles Plane tree bark and peels into uneven plates, after which the light green-grey bark becomes visible. Once established, the bark becomes even more characteristic. Free from diseases. Grows on all soils, preferably moist soil types. Wind resistant. Narrow cultivars are suitable for pavement. Use as park and avenue tree or in gardens.

### **persica 'Bella'**



Herman Geers, Boskoop, the Netherlands. Selection from seedlings. Capricious growth, ovate rising crown with a central leader, height 8-10 m. Light grey trunk with purplish-brown spots and peeling bark. Emerges light bronze to purple-red, then turns green and colours from yellow-orange to purple-red in autumn. Red flowers, 2 cm in size, appear in February, certainly in established specimens. Grows on all soils, preferably moist. Does not tolerate pavement. Hardy.

### **persica 'Columnella'**



Italian selection, Pasquali, Asola, Italy, 2005. Tree with a narrow, upright and oval crown. Height 7-8 m. Has a more closed crown than 'Vanessa'. Obovate leaves, glossy deep green. Emerges red-edged. Blooms very early, late February-March, with spherical red flowers. Beautiful yellow and scarlet autumn colour.



*Parrotia persica*



*Parrotia persica* 'Columnella'

# Parrotia

fam. Hamamelidaceae



Parrotia persica 'Vanessa'



Parrotia persica 'Vanessa'



Parrotia persica 'Vanessa'

## **persica 'Jodrell Bank'**



Jodrell Bank Gardens, Macclesfield, Cheshire, UK. Rising crown, 6-8 m high. Blooms in February-March with small, red flowers. The green foliage emerges light bronze and colours from orange to purplish-red in autumn. Very long autumn discolouration. Grows on all soils, preferably moist. Does not tolerate pavement. Hardy.

## **persica 'Persian Spire'®**



JLPN Inc., Salem, Oregon, USA. Narrow upright selection. Slow-growing to a height of 7.5 m and a width of 3 m. Leaves emerge purple. Dark green leaves with a striking, broad purple edge. Colours from yellow to orange in autumn; better autumn colouring at a lower pH-level. Prefers well-drained, moist, fertile soils. Very hardy. For sun and partial shade.

## **persica 'Vanessa'**

(syn. Parrotia persica 'Select')



Koninklijke Boomkwekerijen Alphons van der Bom BV, Oudenbosch, the Netherlands, 1975. A selection from seedlings from Parrotia persica. An ovate crown, straight trunk and a central leader. Firm, shiny leaves with a beautiful autumn colouring. Height 7-8 m. For the rest species-specific. An attractive park tree.

# Paulownia

fam. Paulowniaceae



## **Princess tree, Foxglove tree**

A genus that comprises 7 species, all originating from China and Taiwan. The Bavarian physician Philipp Franz von Siebold (1796-1866), deployed to Japan by the Dutch East India Company in 1823, imported Paulownia in the Netherlands. The genus is named after Anna Pavlovna of Russia, who was married to King Willem II of the Netherlands. Paulownia grows invasively in some parts of the USA. Often used as timber due to its rapid growth. The princess tree is a colonizer plant and is therefore frequently used after completion of extraction projects.

## **fortunei 'Fast Blue'®**

(syn. Paulownia fortunei 'Minfast')



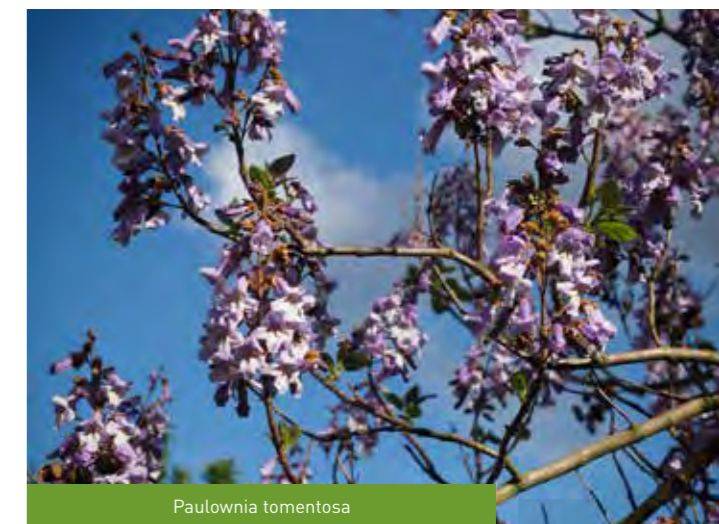
Pépinère Minier, Beaufort-en-Anjou, France. Selection with a pyramidal growth up to 10-15 m. Large, cordate, green, slightly hairy leaves, 25-30 cm in size. Yellow autumn colouring. Flowers in May-June. Soft lilac to violet-coloured, bell-shaped flowers, pyramidal around a central upright axis, up to 50 cm. Flowers at an early age and then green seedpods follow which later turn brown. Thrives in full sun. Grows on all soils, if not too wet. Quite hardy. Salt tolerant and disease and insect free.

## **tomentosa**

(syn. Paulownia imperialis)



Origin: China. Rather fast-growing tree, 10-15 m high, with a wide round and relatively open crown and thick, spreading branches. Twigs and light branches of young trees may be damaged by frost, but when the affected wood is pruned back, the crown will quickly recover. Very large, ovate leaf, 15-40 cm, on a long petiole, hairy and fresh green in colour. Flowers in April-May in 30 cm high, upright, pyramidal bunches with trumpet to bell-shaped flowers, violet-blue with yellow stripes. The bare flower bunches develop before winter sets in and consequently may freeze during cold winters. Up to 3 cm long, ovoid, brown seed capsules with a sharp point. For wind-sheltered, sunny and warm planting locations on light fertile open soils. Under perfect soil and location factors, it tolerates lightly paved squares. Beautiful park tree.



Paulownia tomentosa



Paulownia tomentosa

# Phellodendron

fam. Rutaceae

# Photinia

fam. Rosaceae

## Cork tree

A genus that comprises 10 species of deciduous, aromatic, tall trees occurring in temperate and subtropical East Asia. The generic name is derived from the Greek words: *phellos*, cork and *dendron*, tree and refers to the corky bark of some species. In some parts of the USA considered an invasive species. Phellodendron is one of the 50 fundamental herbs in traditional Chinese medicine. Recent research showed that Cork trees contain substances that have an antibacterial, vein-widening and immunosuppressive effect. The yellow inside of the bark is applied for the production of yellow colourant, which in China in the old days was used to make high-quality yellow paper. The wood of Phellodendron is used in the furniture industry.



Phellodendron amurense



Phellodendron amurense

**amurense** Common cork tree, Amur cork tree



Origin: Manchuria, North China. Imported in Europe in 1856. Medium-sized tree, fast-growing, with a height up to 12 m and a wide crown. Grey, thick, deeply grooved bark with corky fissures. Odd-pinnate, green, 35 cm long leaf. Young twigs are yellowish-brown. Twigs that are affected by frost, quickly recover. Yellow autumn colouring and early leaf drop. Green-yellow, inconspicuous flowers in panicles. Fleshy, bluish-black, pea-sized fruits with very long fruit stalks, strikingly ornamental when matured. Loves warm summers and thrives in full sun. Park tree for fertile, loamy soils.

**amurense var. lavalleyi**



Medium-sized tree, 7-10 m high. Thick, corky bark similar to Phellodendron amurense, but auburn twigs in winter. Yellow-green leaf, underside light green and hairy. Greenish-yellow, inconspicuous flowers in panicles. Bears black fruits in abundance. Beautiful park tree. Hardly cultivated.

**japonicum**



Origin: Japan. Imported in Europe in 1863. Forms a round crown with a central leader. Grey-brown, slightly grooved trunk, later peeling. Green, odd-pinnate leaf with felt hairs. Yellow autumn colouring. In May, light green flowers in 8-10 cm panicles appear. They are followed by black berries that smell after turpentine and are retained on the tree throughout the winter. Grows on all soils and is hardy and wind resistant. Park tree.

A genus that comprises around 60 species of deciduous and evergreen trees and shrubs. Originating from Europe, South East Asia, Himalaya, and West USA. The generic name is derived from the Greek word: *photeinos*, shining, and refers to the often glossy leaves.

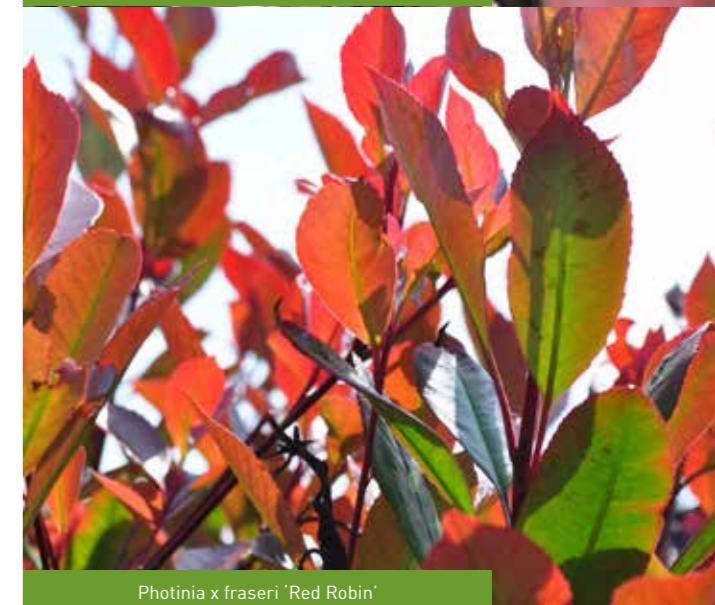
**x fraseri 'Red Robin'** Christmas berry  
(*Photinia glabra* x *Photinia serrulata*)



Duncan & Davies, New Plymouth, New Zealand, 1979. Rising large shrub, recently also cultivated as an evergreen standard tree. Height up to 5 m. Wide elliptical, leathery, shiny leaves. In spring, this evergreen buds attractively with red leaves that later turn green. Blooms in May-June with white flowers in umbels after which small red-black fruits appear. Grows in partial shade and full sun. Thrives on all soils, if not too calcareous. Hardy and tolerates onshore wind. Resistant to pollution. As a specimen shrub, hedge or tree. Also available in pleached shapes. For public gardens, parks and private gardens.



Photinia x fraseri 'Red Robin'



Photinia x fraseri 'Red Robin'

# Pinus

fam. Pinaceae

## Pine tree

A genus that comprises 110 species making it the largest genus among the conifers. Pinus only occur in the Northern Hemisphere. Most species are found in North America and Mexico. Of all conifers, Pinus has the greatest economic value. Their trunks are of great importance for correct species identification.

**nigra subsp. laricio** Corsican pine  
(syn. *Pinus nigra* var. *Corsicana*)



Naturally occurring in Corsica, southern Italy and Sicily. Moderately fast-growing pine up to 50 m high. Narrow and conical crown, straight trunk with horizontal vertical branches. Grey-green flexible needles, in pairs up to 12-18 cm long. The buds are 2 cm long and have a long tip without (paper-like) scales. Slightly fragrant, yellow flowers in bundles, appearing simultaneously with the emerging needles. 8-10 cm long cones, separate or in pairs. Decorative bark, grey-pink to dark brown with grooves. The red heartwood is clearly defined against the pale brown sapwood. Grows on all soils. Hardy and wind resistant.

**nigra subsp. nigra** Austrian pine  
(syn. *Pinus nigra* 'Austriaca')



Very tall, big tree, height 20-30 m. In its juvenile stage a pyramidal crown, later round and screen-like. Long, dark green needles in pairs. Dark grey-black deeply grooved bark. Very ornamental. Use as a specimen tree in parks.

**nigra 'Pyramidalis'**



In its juvenile stage, straight and pyramidal, later more conical. An addition for narrower streets and coastal planting. Can be pruned easily.

**pinea** Umbrella pine



Originally from Greece and spread around the Mediterranean by the Romans. Height up to 30 m with a broad spherical, later flattened crown. Orange to red-brown bark with deep grooves and scales. From the resin, turpentine can be made. The outward-growing buds are red-brown with white fringes. Dark green needles, in pairs of 12-20 cm with a sharp tip. Shiny brown, spherical 10-15 cm large cones that ripen after 3 years. Bears edible pine nuts. Can be planted on dry soils and is quite heat resistant.

*Pinus nigra* subsp. *laricio*

# Pinus

fam. Pinaceae

**strobis** Weymouth pine, White pine



Eastern North America. Imported in Europe after 1600. Initially narrow and pyramidal, later growing wider. Height 25-30 m. The needles are 5-10 cm long, blue-green to white in colour. Narrow 15 cm long thin cones that are slightly bent. Very hardy and wind resistant pine. Tolerates air pollution. Use as a specimen tree.

**sylvestris** Scots pine



Tall, rising tree 15-30 m, widely known for its presence in pine forests. In its juvenile stage, a pyramidal habit, later more capricious. Needles in pairs, slightly twisted and bluish-green. Striking orangey-brown bark that peels off in large strips. Use as a specimen tree in parks or in the forestry.

**sylvestris 'Norska'**

(syn. *Pinus sylvestris* 'Norske Typ', *Pinus sylvestris* 'Norwegian')



Origin: Norway. Slow-growing, capricious pine up to 12 m high. Forms a wide conical crown. Stiff, short, 4-6 cm grey-green needles. Orange-brown twigs and a grey-brown trunk. Lemon-yellow, fragrant flowers in bundles appearing simultaneously with the emerging needles. Hanging cones, 1-5 together, 3-7 cm long and 2-3 cm wide. Thrives on dry soils. Wind resistant, also in coastal areas.



*Pinus nigra* subsp. *nigra*



*Pinus nigra* subsp. *nigra*



*Pinus sylvestris*

# Platanus

fam. Platanaceae

## Plane, plane tree

A genus that comprises 7 species. The generic name is derived from the Greek word *platanos*, and refers the species *Platanus orientalis*. Plane trees are fast-growing, impressive trees that reach heights up to 20-30 m. Best known for their peeling bark and large palmate, more or less deeply lobed leaves. A plane tree endures dust and exhaust fumes well, which makes it ideal for planting in urban areas. *Platanus* grow on all fertile well-drained and damp soils, preferably loamy sandy soils.

**x hispanica** London plane  
(*Platanus orientalis* x *Platanus occidentalis*)  
(syn. *Platanus* x *hybrida*, *Platanus* x *acerifolia*)



Cultivated for a long time. Street, park, avenue and square tree of large dimensions. Bark peels off in larger plates than *Platanus orientalis*. Large, palmately moderately lobed leaf, 10-25 cm, bright green, with 3-5 lobes. Centre lobe approximately just as wide as it is long. Grows on all soil types, but needs enough space. Very strong tree and resistant to pollution. The most commonly known and planted plane.

**x hispanica 'Alphen's Globe'**



A cultivar selected by André van Nijnatten, Zundert, the Netherlands. This slow-growing plane is always top grafted onto a *Platanus* x *hispanica* stem and has a regular and compact crown. Beautiful avenue and street tree with large bright green leaves that are deeply lobed and palmate, turning in autumn to bright golden-yellow. Thrives on heavy clay soils and in urban environments. A tough tree, tolerant of hard pruning and capable of excelling in most soil conditions.

**x hispanica 'Bloodgood'**



London, UK, 1640. Tall tree with a height of 20-24 m and a width of 15-16 m. The olive-coloured, peeling bark has a spotted brown to cream-coloured bark pattern, very attractive. Supposed to be resistant to plane canker. Hardy. Leaf size is species-specific, leathery, fresh green and very healthy. Yellow to yellowish-brown autumn colour. Fruits 20-25 mm, often in pairs. Attractive tree for wide avenues, boulevards, squares and parks.

*Platanus* x *hispanica*

# Platanus

fam. Platanaceae

**x hispanica 'Columbia'**



US National Arboretum, Washington D.C., USA, 1988. Selected because of its high resistance to plane canker and its attractive foliage. Habit and size similar to 'Bloodgood'. Very beautiful, deeply indented leaves, resembling those of *Platanus orientalis*. Bright green, yellowish-brown autumn colour. Hardy. Recommended as an avenue tree for wide avenues, squares and boulevards in the USA. Susceptible to frost damage.

**x hispanica 'Exclamation'**<sup>TM</sup>

(syn. *Platanus* x *hispanica* 'Morton Circle')



Morton Arboretum, Lisle, Illinois, USA, 1994. Anthracnose resistant. Height 20 m, width 15 m. Peeling trunk, already at a young age. Protruding trunk, densely branched. Soft green, deeply incised leaves. Turns from yellow to brown in autumn. Sparsely bears fruits. Grows on all soils. Avenue tree for wide avenues and squares.

**x hispanica 'Latifolia'**



Habit is species-specific. Leaf shinier and slightly deeper indented. It grows substantially slower than *Platanus hispanica*. Avenue tree for wider avenues, squares, boulevards. Also beautiful as a specimen tree.

**x hispanica 'Liberty'**



US National Arboretum, Washington D.C., USA, 1994. Selection that develops into a straight rising tree, slightly resembling 'Columbia'. The trunk is greyish-green. Leaves usually 5-lobed with wide lobes. The leaf is substantially wider than it is long, shiny mid-green. Susceptible to frost. Avenue tree for wide avenues, squares, boulevards and such (like 'Columbia' and 'Bloodgood').

**x hispanica 'Louisa Lead'**



Ton van den Oever, Haaren, the Netherlands, 2000. Was selected as a seedling because of unusual growth and crown shape. Fast and beautiful upright compact growth. Height 20-25 m. Beautifully branched crown with a straight central leader. This tree has a nice, somewhat more compact habit and is extremely wind resistant. An asset among plane trees. For streets and avenues.

**x hispanica 'Malburg'**



Selected by Naktuinbouw in 1981 from an approximately 40-year-old avenue in Huissen, the Netherlands. Develops into a well-growing, rising tree shape with a narrow crown and central leader. Fresh green foliage. Tolerates pavement well. Avenue and street tree in urban areas for wide streets and avenues. Also a beautiful park tree.

*Platanus* x *hispanica*

*Platanus* x *hispanica* 'Louisa Lead'

# Platanus

fam. Platanaceae



Platanus x hispanica 'Pyramidalis'



Platanus x hispanica 'Tremonia'



Platanus orientalis 'Digitata'

## x hispanica 'Mirkovic'



Mirkovic Nursery, Former Yugoslavia, 1965. Slower growth than the species. Height 15-20 m. Has green to yellow-green leaves in summer that turn purple-red in autumn. The leaves are dust-free. Anthracnosis and mildew resistant. Very hardy, grows on all soils. For avenues and squares or as a specimen tree.

## x hispanica 'Paloc'®



Jozsa Miklos, Hungary. Fast-growing, up to 25 m high and 15 m wide. Large, palmate leaves, 15-20 cm. Yellow-brown autumn colouring. Greenish-yellow flowers in April. Dark brown fruits in clusters, 2 cm in size, which ripen until October. Light brown trunk with light yellow, olive-green and grey-brown spots, peeling. Good tree for the urban environment. Drought and heat resistant.

## x hispanica 'Pyramidalis'

(syn. Platanus x hispanica 'Erecta')



France, before 1850. Medium-sized tree. The lower branches spread horizontally, the higher branches are usually more upright, but in older trees they often spread again. Develops a round to wide ovate crown. The bark does not peel as strongly as the species and quickly becomes uneven and rough. The leaf is bright green and shiny usually with 3 (rarely 5), rather short and wide, sparsely serrated lobes. Park tree or an avenue tree with smaller dimensions than Platanus hispanica.

## x hispanica 'Tremonia'



Botanical Garden Dortmund, Germany, 1951. Pyramidal crown shape and a straight trunk. Height 10-15 m. Susceptible to frost in its juvenile stage. Street and avenue tree. Limited availability.

## x hispanica 'Schalk's Favourite'



Schalk Brothers, Gouda, the Netherlands, 1990. A selection with the habit of an Italian poplar. Difficult to propagate and hard to transplant. Limited availability.

## occidentalis American plane, American sycamore



Origin: North America. Imported in Europe in 1636. Leaves less deeply indented. Centre lobe wider than it is long. For the rest it closely resembles Platanus x hispanica. Height 20-25 m. Use as a park, avenue and street tree. Limited availability.

## orientalis Oriental plane



Origin: Southeastern Europe, Asia Minor. Imported in Europe in 1548. Height 30-35 m. Distinguishes itself from the common plane by the deeper indentations of its palmately divided leaf, usually 5-7 lobed, with sharply serrated lobe points. Centre lobe longer than it is wide. Bark peels off in smaller plates, resulting in a more smudged coloured bark. Susceptible to frost damage in its juvenile stage. Park tree.

# Platanus

fam. Platanaceae

## orientalis var. cuneata



Imported in Europe in 1739. An oriental plane with usually 3-lobed, deeply indented leaf, the narrow leaf lobes of which are often slightly wavy. Height 25-30 m. Habit species-specific. Yellow-green trunk with grey, peeling bark. Ornamental fruits. Primarily a park tree.

## orientalis 'Digitata'

(syn. Platanus x hispanica 'Digitata')



Cambridge University Botanic Garden, UK, before 1872. Beautiful cultivated variety with deeply indented lobes, usually 5 wide finger-shaped. Height 30-35 m. Susceptible to frost in its juvenile stage. When (trans)planted late, the shoots and later vulnerable leaf are susceptible to drought. So it is recommended to plant this cultivar in time and in moist soil. Yellow-green trunk with grey bark. Bark peels off in small plates. Ornamental fruits that are retained on the tree for a long time. Park tree, can also be planted as an avenue tree on wide green verges.

## orientalis 'Minaret'



Leenderheim boomkwekerij, the Netherlands, 1981. A selection from Platanus orientalis 'Digitata'. This small-leaf Platanus orientalis has a columnar growth. Height 10-15 m. Very striking compact growth. The petioles and the timber are purplish-red. Towards autumn, the wide bark plates also turn red, while the leaves turn yellow. Completely hardy and retains its healthy leaf for a long time.



Platanus orientalis 'Digitata'



Platanus orientalis 'Minaret'

# Poliothyrsis

fam. Salicaceae

## Chinese pearlbloom

A monotypic genus from China. The name is derived from the Greek words: *polios*, grey-white and *thyrsus*, cluster, which refers to the grey-white flowers in clusters that grow on Poliothyrsis. Imported in Europe in 1908.



Poliothyrsis sinensis



Poliothyrsis sinensis

### sinensis



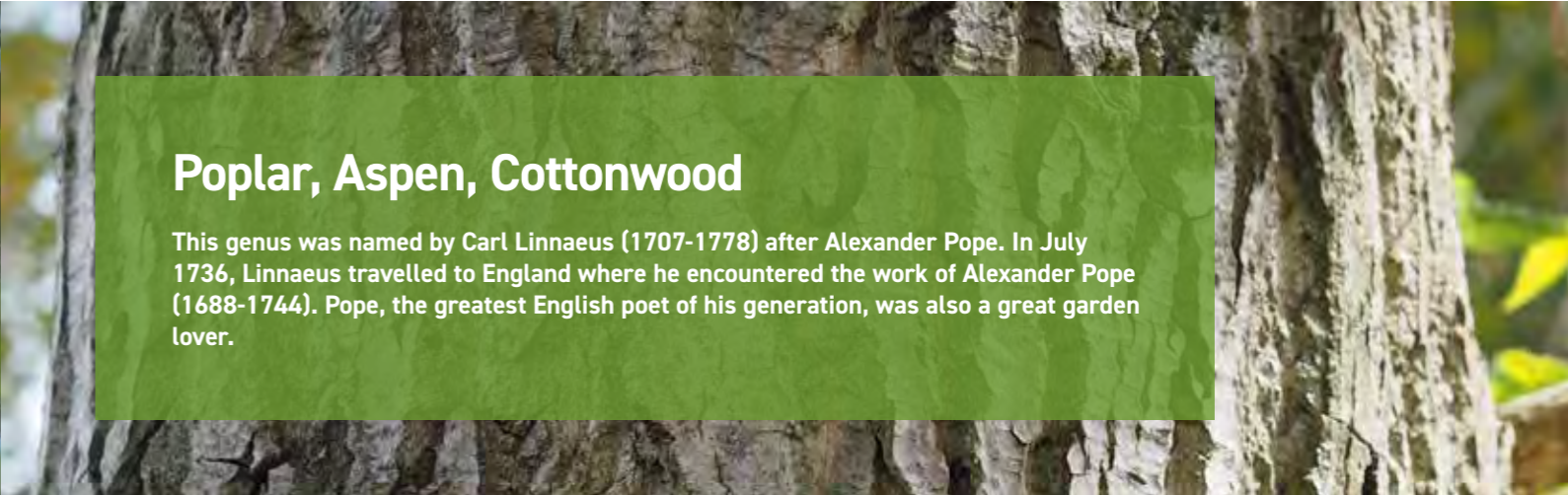
Deciduous, narrow upright shrub or tree with a dense crown. Wide oval-shaped, 15 cm long, alternate leaves with a hairy underside, 3-4 cm long petiole and a roughly serrated leaf margin. Fragrant cream-coloured flowers in clusters up to 20 cm. Flowers on young wood in late summer. Winged capsules with 3-4 valves. Older specimens develop a beautiful, ornamental grooved trunk. Requires a sheltered location on soils that are not too calcareous.

# Populus

fam. Salicaceae

## Poplar, Aspen, Cottonwood

This genus was named by Carl Linnaeus (1707-1778) after Alexander Pope. In July 1736, Linnaeus travelled to England where he encountered the work of Alexander Pope (1688-1744). Pope, the greatest English poet of his generation, was also a great garden lover.



Poplars are of great significance for the landscape in the Low Countries. They have been planted extensively since the early 1900s. During this period, many new species found their way to our region. In the 1800s, forestry arboreta were planted with newly discovered species to examine all their properties in our climate. Due to their superior growth rate, poplars met all the selection criteria of good, fast-growing wood producers and coupled with the fact that they have few soil requirements, poplars were planted en masse. The demand was very high and several forestry nurseries were founded. In our region for example, the Van Iersel family from Udenhout, the Netherlands, established a nursery that later became widely known as Boomkwekerij Udenhout. The establishment and continuing success of our nursery is therefore partly due to the popular poplar.

Unfortunately, pure forestry selections were also selected for avenue planting. Due to their fast growth rate and unaltered maintenance, poplars were then considered trees with a high susceptibility to breakage and seed hair producers. That is why the right tree in the right place most definitely applies to Populus.

Poplars are closely related to Salix, but show some different characteristics. Populus buds are sticky and covered by many bud scales; Salix buds only have 1 bud scale. Populus has hanging catkins, Salix has upright catkins. Populus branches have a terminal bud and the buds are scattered, Salix almost never grows a terminal bud.

Poplars are fast-growing, deciduous trees, usually higher than 12 meter. The single, triangular to rhombic and sometimes oval leaves have a serrated or toothed margin. The laterally compressed petioles often have crimped or incised bracts.

Cultivars are either female or male. Poplars are often dioecious and have unisexual flowers in hanging catkins. Male catkins have many anthers, overwinter naked, and flower red before the leaves emerge. Female catkins also flower before the leaves emerge and have 1 style and 2-4 stigmata with cup-shaped ovaries. Seed capsules burst open when they are ripe and then release fluff-covered seed. This fluff strongly resembles cotton, that is why Poplars are also called Cottonwood.

The Populus genus comprises around 35 species that occur in Europe, Asia, North Africa and North America and is divided into the following sections:

Populus	White poplars, Aspen, Quaking aspen, Trembling aspen
Leucoides	Bigleaf poplars, Swamp poplars
Tacamahaca	Balsam poplars
Aigeiros	Black poplars, Cottonwood
Turanga	(Sub)tropical poplars (not suitable for our climate, not described in this chapter)
Abaso	(Sub)tropical poplars, Mexican poplars (not suitable for our climate, not described in this chapter)

Furthermore, there are also a lot of crosses (mainly balsam hybrids) and poplar trees that have recently been discovered or propagated and that have not yet been classified.

# Populus

fam. Salicaceae

Section Populus



Populus alba



Populus alba 'Pyramidalis'

## White poplars, Aspen, Trembling poplars, Quaking aspen

These poplars initially have a smooth trunk, sometimes grooved at the base. Smooth or hairy twigs. The leaves are smooth or hairy, lobed and with a serrated or toothed leaf margin. Petioles are round or compressed. Winter buds are sticky or hairy.

**alba** White aspen, White poplar



Origin: Europe, North Asia and North Africa. Tree or large shrub. Capriciously growing, strongly branched with a wide ovoid to round crown, 10-12 m high. Silver-grey-coloured trunk with diamond-shaped black pits or bands, later grooved. Leaves glossy dark green on top with a white felty, hairy underside, early emerging. Yellow autumn colouring, late leaf drop. Leaves vary in shape and size, 4-10 cm with a 2-9 cm long petiole. They are triangular to ovoid, deeply lobed, on young fast-growing shoots. Established trees have ovate to slightly palmate and unlobed leaves. Resistant to onshore wind and road salt. Grows on drier soils. Thrives on moist, loamy, and open humus soils. Rarely cultivated as a tree. More often a colonizer plant along roads and canals. Pollution resistant.

**alba 'Nivea'** ♂



UK, 1789. Pyramidal to columnar habit with a straight trunk. Height 10-15 m. Foliage is 5-lobed, shiny dark green on top with a white, felt-like and hairy underside. Buds early, white-silver and very conspicuous. Yellow autumn colouring, late leaf drop. Easy to propagate and often used as rootstock for Populus x canescens cultivars. Endures onshore winds and grows on drier soils. Thrives on moist, loamy and open humus soils. Resistant to road salt. Best planted along roads and canals. Pollution resistant.

**alba 'Pyramidalis'** ♂

(syn. Populus alba 'Bolleana', Populus alba 'Fastigiata', Populus bolleana, Populus alba var. bolleana)



France 1749, available in the Netherlands since 1872. Strongly upright columnar to conical habit. Very similar to Populus nigra 'Italica', but opens at a later age. Leaf 5-lobed and emerging early. For the rest species-specific. Short shoots are more roughly serrated. White trunk. Grows on all soils. As a specimen in parks and sometimes as a street tree. Hardly or not cultivated.

**alba 'Raket'** ♀



The Netherlands, 1956, in production since 1972. Pyramidal to columnar growth, better than 'Pyramidalis'. Branches initially upright, later more spreading. Straight trunk. 5-lobed dark green leaves. Very suitable for windbreaks or as a park tree. Not susceptible to leaf diseases. Often used as rootstock. Grows on virtually any soil type. Resistant to pollution and road salt.

# Populus

fam. Salicaceae

Section Populus

**'Astria'** ♀



A hybrid of a tetraploid Populus tremula and a diploid Populus tremuloides. Tree with a beautiful dark brown, olive-coloured very straight trunk. Pyramidal crown, height 12-15 m. Large and shiny dark green leaf. Is propagated on its own roots by means of tissue culture. Resistant to pollution and road salt. As a park or avenue tree.

**x canescens** Grey abele

(Populus alba x Populus tremula)



Tall, fast-growing tree with a wide, loose crown and a height up to 20-25 m and a slightly crooked trunk. Leaves 4-8 cm in size, round / triangular, sometimes lobed, cordate at the leaf base with a grey and felty underside. Petiole 2-5 cm. Twigs and buds are initially hairy, later more felty. Leaf emerges later than the leaf of Populus alba. Endures onshore winds, which makes it suitable for roadside planting in coastal areas. Best not to plant on acidic soils.

**x canescens 'Bunderbos'** ♀



The Netherlands, 1967. The mother tree can be found in the southern part of the province Limburg. Initially it has a narrow and ovoid habit, later it becomes more ovate. Leaves relatively small, dark green. Use species-specific. This cultivar is maintained in multiplication fields.

**x canescens 'De Moffart'** ♂



Baron de Moffarts, Kasteelpark Gasterbos, Herk-de-Stad, Belgium, 1968. Develops a straight and upright trunk. Dense, regular, wide conical crown, later more round. Triangular / ovoid leaves that emerge dull green with a bronze hue. Slightly susceptible to bacterial canker (Xanthomonas populi), but hardly susceptible to rust (Melampsora medusae). Develops less root suckers. Good wind resistance, grows on all soil types. For landscape planting.

**x canescens 'Enniger'** ♂

(syn. Populus x canescens 'Limbricht', Populus x canescens 'Münsterland')

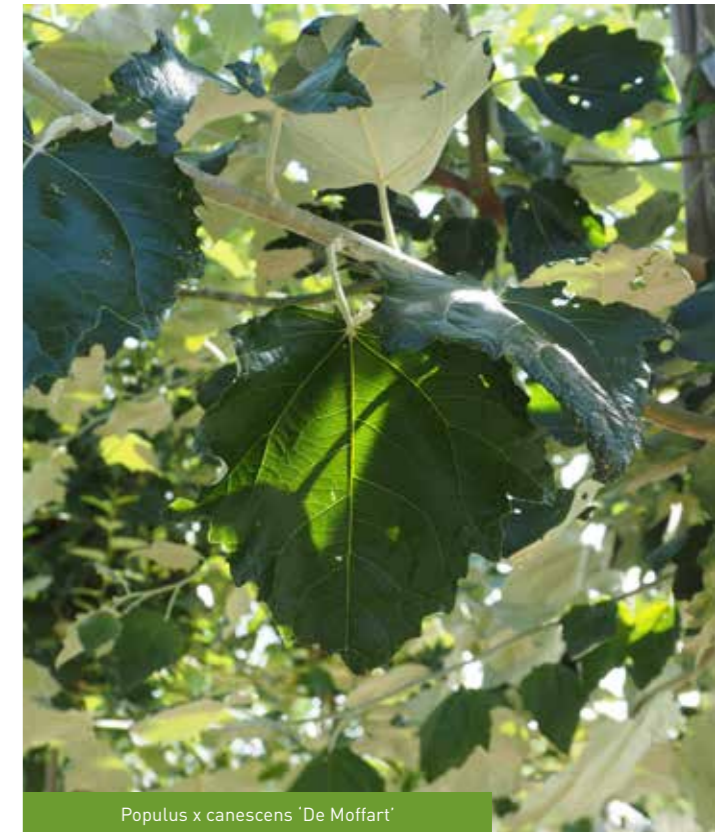


Zoo Berlin, Germany, 1867. Develops a straight, forking trunk and a regular, narrow conical crown that later becomes more wide oval to round. Large, shiny grey-green to yellowish leaves. Petiole slightly longer than half the lamina. Very hardy. Slightly susceptible to bacterial canker, but hardly susceptible to rust.

**x canescens 'Honthorpa'** ♂



Germany, 1955. Straight, smooth and grey trunk. Initially a narrow pyramidal crown, later more ovate to round. Inclining to upright branches. Leaves are longer than they are wide and greyish-white on the underside. High resistance to rust, but moderately resistant to bacterial canker. Develops a lot of deadwood. Very hard wood. Good wind resistance, suitable for landscape planting.



Populus x canescens 'De Moffart'



Populus x canescens 'De Moffart'



# Populus

fam. Salicaceae

Section Populus



Populus x canescens 'Schubus'



Populus x canescens 'Schubus'

## x canescens 'Schijndel' ♂



Schijndel, the Netherlands, 1954. Develops a regular, rather narrow crown that later becomes more wider. Leaves are green, triangular / ovoid and lobed. Use for avenue and roadside planting. No longer cultivated.

## x canescens 'Schubus' ♂



Germany. Wide upright to oval crown and slightly crooked trunk. Height 20-25 m. Wide ovoid leaves with a truncate leaf base, strongly resembling Populus tremula. Good resistance to rust, but moderately resistant to bacterial canker. For avenue planting. Still in production in small quantities.

## x canescens 'Tatenberg' ♀



Germany. Moderately fast-growing large upright oval crown. Very straight, green-grey rather smooth trunk. 'Tatenberg' is recognisable by the 'muscle bundles' on the trunk. Upright, thin branches. Glossy, dark green leaves emerge quite late. Fairly large leaves. Produces minute seeds with an apical tuft of white hairs. Hardly cultivated anymore.

## x canescens 'Witte van Haamstede' ♀



Slot Haamstede, Haamstede, the Netherlands, 1957. Develops a regular crown. The unlobed leaves emerge dull greyish-green with a brown hue and rather late. The petiole is somewhat shorter than half the lamina. Normally this tree is sterile, but can develop tufted fruits when it is in bad condition. Little susceptibility to rust, moderately resistant to bacterial canker. High resistance to wind and salt. Suitable for landscape planting.

## tremula Aspen, Common aspen, Quaking aspen



Tree or shrub. As a tree, it forms a conical crown, which is later open and more oval. Height 20-30 m. Smooth light grey trunk with diamond-shaped pits. Almost round leaves 3-8 cm wide and long, wavy margin, sometimes roughly serrated with a rounded top. Larger at the top shoots. Young leaves are green with a brown haze, later green with a light blue-green, slightly felt-like hairy underside. Buds very late. Male catkins are silvery-white, hairy, 8-10 cm long. The bracts with long upstanding hairs do not fall during flowering. Female, light pink catkins. Flowers very early, before the foliage emerges in March-April. A very wind resistant tree. Park tree for lawn strips. Develops a very extensive root system from which suckers easily sprout. Propagation by root cuttings.

## tremula 'Erecta' ♂

(syn. Populus tremula 'Columnaris')



Västergötland, Sweden, 1847. Tightly upright-growing, remains narrow, 12-15 m high. Ovoid to round dull green leaves, 8 cm. The leaves on top shoots are noticeably larger. Grows on all soils. Good resistance to frost and road salt. For planting in avenues, streets and parks. Can also be used in coastal areas.

# Populus

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Section Populus

## tremula 'Tapiou' ♀



Braunschweig, Germany. Triploid selection. Strongly growing narrow upright, later somewhat wider. Height 12-15 m. Good central leader. Dark green ovoid to round leaves, 5-9 cm in size. Flowers in April with catkins 3 cm in size. Grows on all soils. Good resistance to frost and road salt. For planting in avenues, streets and parks. Also suitable for coastal areas.

## tremuloides American aspen, Quaking aspen, Trembling aspen, Trembling poplar



Canada to Mexico. Shrub or tree, upright oval form, 15-20 m high. Reddish-brown twigs. The leaf is matte green on top and grey-green on the underside, as long as it is wide, 4-7 cm, serrated with a short, pointed tip. Pale yellow autumn colouring. Male catkins 5-8 cm. Grows on all soils. Good resistance to frost and road salt. For planting in avenues, streets and parks. Also suitable for coastal areas.



Populus x canescens 'Witte van Haamstede'



Populus tremula 'Erecta'

# Populus

fam. Salicaceae

Section Leucoides



Populus lasiocarpa

## Bigleaf poplars, Swamp poplars

The trees in this section have a rough bark, which later peels off into small loose plates. Hairy or smooth twigs. Large, usually cordate leaves with a single serrated margin. Round petiole. Buds are hairy at the base and sticky on top. Bigleaf or swamp poplars are very difficult to propagate through cuttings and are therefore often grafted.

**lasiocarpa** Chinese necklace poplar



Indigenous to China, available in Europe since 1904. Wide, round crown, height 20-25 m. Very large, shiny green, cordate foliage, 15-30 cm in size with a cordate leaf base. Sticky buds. Just like the petiole, the leaf veins are red or reddish spreading. Long, monoecious catkins 8-10 cm. Requires nutritious, damp soils. Sensitive to wind. Use as a specimen tree in parks and public gardens.

# Populus

fam. Salicaceae

Section Tacamahaca

## Balsam poplars

Trees in this section have a roughly grooved trunk once established. Medium-sized, dark green, leathery leaves, with a slightly lighter underside and a ciliate leaf margin. Round or rectangular petiole. Very fragrant (balsam scent) and sticky winter buds. Strong growth in the juvenile stage.

**balsamifera** Balsam poplar, bam, bamtree, hackmatack



Alaska, Canada, North-eastern USA. Forms an oval to round crown and a final height of 30 m, but in cultivation only 18-20 m. Smooth, grey-green bark, older specimen have a dark grey and furrowed bark. The emerging leaves spread a typical balsam fragrance. The resin surrounding the buds is used by bees to make propolis. Large, ovoid to cordate, dark green, shiny foliage with an olive-green underside. Yellow autumn colouring. Inconspicuous flowering in March, red male catkins and yellow-green female catkins. Thrives on nutritious, moist soils. Endures temporary flooding. For landscape planting.

**simonii** Simon's poplar



Indigenous to North China, available in Europe since 1862. Upright growth, oval habit. Grey-green trunk. Reddish-brown angular, sometimes round twigs. Obovate, bright green, ovate to oval leaves with a blunt pointed tip and cuneate leaf base. Grows on all soils. Use in parks and public gardens.

**simonii 'Fastigiata'**



USA, 1915. Columnar narrow oval growth. Grey-green stem. Has obovate leaves with a short petiole 4-8 cm. Grows on all soils. Use as avenue and street tree or specimen tree in parks.

**trichocarpa** Western balsam poplar, Black cottonwood



Western North America. Very large tree, usually with a straight trunk, which forks when the trees mature. Wide, open, irregular round crown. The trunk is initially green-yellow and smooth, later green-grey and shallowly fissured. The buds are sticky and emit a strong balsam fragrance. Dark green, elliptical oblong to ovate leaves, 20-25 cm long, with a grey-green underside and a finely serrated margin. Buds early. Flowers very early. Red, male catkins, 6-8 cm. Female trees have smaller green catkins, 4-6 cm. Female seed catkins bear hairy, 3-valved capsules. As a park tree on all soils.

**trichocarpa 'Blom'** ♂



G. Blom, Vancouver, British Columbia, Canada, 1962. The Netherlands, 1972. Height up to 12-15 m. Moderately wide crown. Crooked trunk, many water sprouts. Flowers very early. Reasonably resistant to rust and leaf spot disease (Marssonina brunnea) and very resistant to bacterial canker. Not suitable for avenue planting. Hardly cultivated.



Populus simonii 'Fastigiata'



Populus trichocarpa

# Populus

fam. Salicaceae

Section Tacamahaca



Populus trichocarpa 'Columbia River'

## trichocarpa 'Columbia River' ♂



Canada, 1962. Available in the Netherlands since 1972. Cultivar with a strong growth, columnar habit and upright branches. Wind resistant. Hardly or not susceptible to diseases. Park tree, but because of its brittle branches not suitable for avenue planting.

## trichocarpa 'Heimbürger' ♂



C. Heimbürger, Port-Coquitlam, British Columbia, Canada, 1963. Available in the Netherlands since 1972. Has a straight trunk and pyramidal crown. The branches are short and slightly spreading. Very resistant to bacterial canker, rust and Marssonina brunnea. No longer cultivated.

## trichocarpa 'Trichobel' ♂



A cross between Populus trichocarpa 'Fritzi Pauley' from Washington, USA as the mother and Populus trichocarpa 'Columbia River' from Oregon, USA as the father. Very strong grower with a straight trunk. Wind resistant. Specially developed for timber production.

# Populus

fam. Salicaceae

Section Aigeiros

## Black poplars, Cottonwood

Trees in this section have a grooved trunk once established, with a more or less reticulate grain pattern. Round twigs. Leaves are green and smooth on both sides, with a translucent leaf edge. Serrated or toothed leaf margin. The hairless sticky winter buds are slightly fragrant. Often used for forestry. The UNAL clones are also included in this section. The abbreviated name UNAL comes from the Belgian match factory, Union Allumetièrre. Many poplars from this section can be grown under contract. All poplars that originated from a crossing of a Populus deltoides ♀ x Populus trichocarpa are listed under the name Populus x generosa. The last couple of years, many new, very good hybrids have come onto the market.

## x berolinensis 'Berlin' ♂ Siberian balsam poplar



Zoo, Berlin, Germany, 1865. A hybrid of Populus laurifolia x Populus nigra 'Italica'. Broad columnar to ovoid crown. Height 20-25 m. Straight-growing grey, roughly grooved trunk. Ovate, glossy, dark green leaves with a grey-green underside. Yellow autumn colouring. Good wind resistance, susceptible to Marssonina brunnea. Requires nutritious, moist soil. For parks, public gardens and landscape planting.

## x canadensis 'Agathe F.' ♀



Maine, USA, 1925. In the Netherlands in production since 1972. Tree with a straight growth and a moderately wide crown and a forking trunk when matured. Suffers a lot from branch breakage. Rhombic / triangular leaf with a red petiole. Produces a lot of seed hair. Very susceptible to rust, but good resistance to Marssonina brunnea and bacterial canker. Forest tree. No longer cultivated.

## x canadensis 'Albelo' PBR ♂



Alterra (Wageningen Environmental Research), Wageningen, the Netherlands, 2006. Good straight-growing tree. Buds quite late. Prefers loamy soils. Resistant to Marssonina brunnea and bacterial canker. Good tolerance to rust.

## x canadensis 'Dano' PBR ♂

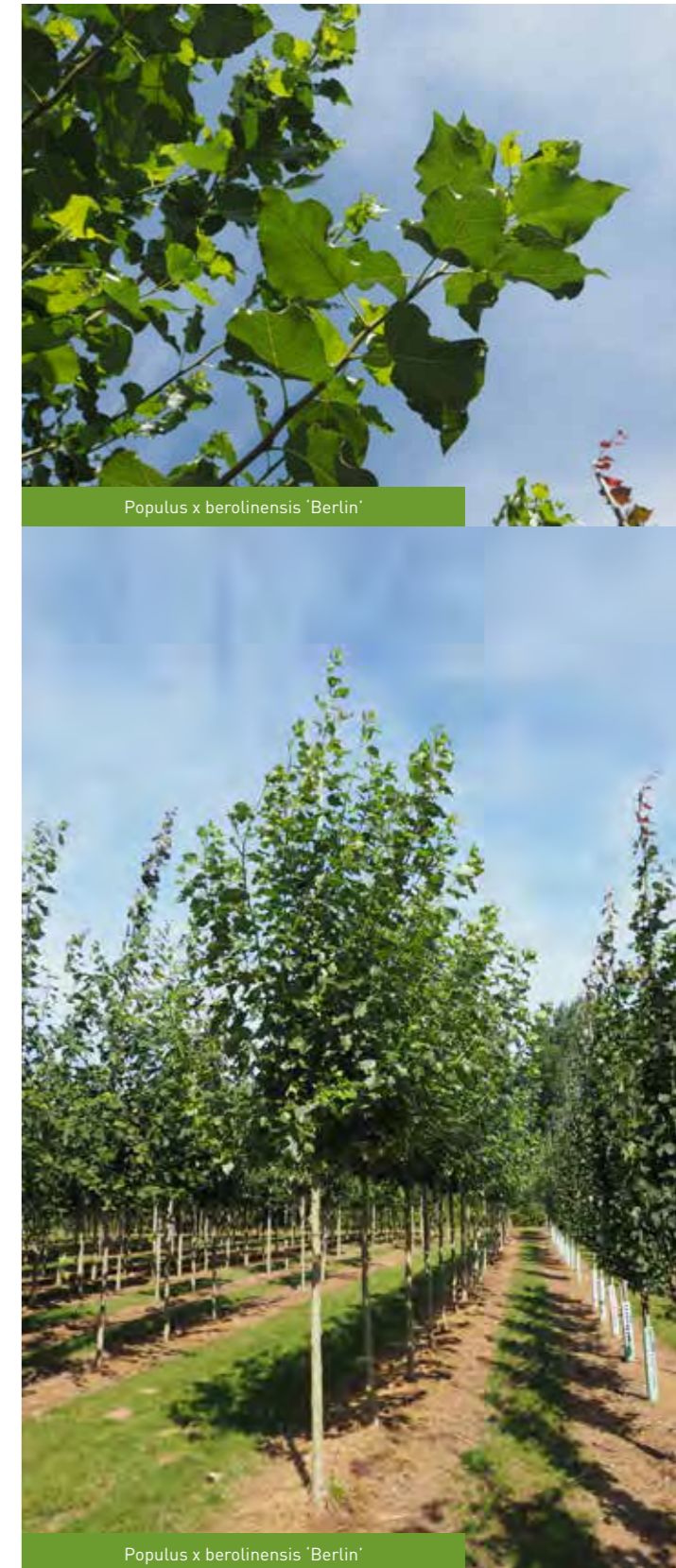


France, 2012. Good straight-growing tree. Buds quite late. Grows on all soils. Resistant to Marssonina brunnea and bacterial canker. Good tolerance to rust.

## x canadensis 'Degrosso' PBR ♂



Alterra (Wageningen Environmental Research), Wageningen, the Netherlands, 2006. Hybrid of a Populus deltoides from Ohio, USA and a Populus nigra from Voorst, the Netherlands. Forms a straight trunk with a central leader and upright branches. Brown-green leaves emerge mid-April. Wind resistant. Suitable for coastal areas. Good resistance to rust, bacterial canker and Marssonina brunnea. Under plant breeder's right. Very good newcomer.



Populus x berolinensis 'Berlin'

# Populus

fam. Salicaceae

Section Aigeiros



Populus x canadensis 'Ellert'



Populus x canadensis 'Hees'

## x canadensis 'Dorschkamp' ♂



Research Institute for Forestry and Landscape 'De Dorschkamp', Wageningen, the Netherlands, 1966. Very fast-growing hybrid. Has a wide crown and a crooked trunk. Good resistance to rust and Marssonina brunnea, low susceptibility to bacterial canker. Forest tree. No longer cultivated.

## x canadensis 'Ellert' PBR ♂



Alterra (Wageningen Environmental Research), Wageningen, the Netherlands, 1991, ('De Dorschkamp', 1984). Develops a straight trunk all the way to the top. Irregularly branched. Buds late. Wind resistant. Suitable for coastal areas and roadside / landscape planting. High resistance to rust, bacterial canker and Marssonina brunnea.

## x canadensis 'Flevo' ♂



Research Institute for Forestry and Landscape 'De Dorschkamp', Wageningen, the Netherlands, 1966. A fast grower with a rather straight trunk and a wide crown. Good resistance to rust and Marssonina brunnea; low susceptibility to bacterial canker. Moderately wind resistant. Forest tree.

## x canadensis 'Florence Biondi' ♀



Maine, USA, 1925. In production in the Netherlands since 1972. Florence Biondi was the wife of E.J. Schreider, one of the creators of this hybrid. Fairly straight trunk, sometimes slightly twisting. Initially narrow crown, later wider. Leaves emerge brown-red, then dark green. Produces minute seeds with an apical tuft of white hairs. Very susceptible to rust, less so to Marssonina brunnea and bacterial canker. No longer cultivated.

## x canadensis 'Gaver' ♂



Belgian Research institute Nature and Forest, INBO, Geraardsbergen, Belgium, 1970. A UNAL-selection. Has a very straight trunk, but tends to develop heavy branches in the lower part of the crown. Is bacterial canker resistant and fully resistant to rust and Marssonina brunnea. Because of its heavy branches, it is less suitable for avenue planting. This variety is maintained in multiplication fields.

## x canadensis 'Gelrica' ♂



J. Kok, Gelderland, the Netherlands, 1865. Cross between Populus x canadensis 'Marilandica' and Populus x canadensis 'Serotina'. An older clone with a slightly crooked trunk and a wide, open crown. Light bark colour with dark horizontal stripes. Slow grower in its juvenile stage, but grows well at a later age. Rather susceptible to rust, susceptible to Marssonina brunnea and very sensitive to trunk scab disease. Relatively good resistance to bacterial canker. Moderately wind resistant. This variety is maintained in multiplication fields.

# Populus

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Section Aigeiros

## x canadensis 'Ghoy' ♀



Belgian Research institute Nature and Forest, INBO, Geraardsbergen, Belgium, 1970. A UNAL-selection. Has a very good trunk shape and forms few heavy branches in the crown. Low susceptibility to bacterial canker and Marssonina brunnea, little resistance to rust. Is suitable for avenue plantings, minor branch breakage. Not suitable for coastal areas.

## x canadensis 'Gibecq' ♂



Belgian Research institute Nature and Forest, INBO, Geraardsbergen, Belgium, 1970. Has a very good trunk shape, but develops heavy branches. Therefore it is less suitable for avenue planting, but like 'Gaver' appropriate for forestry planting on uncontaminated sites. Bacterial canker resistant and fully resistant to rust and Marssonina brunnea. Hardly or not cultivated.

## x canadensis 'Hees' PBR ♀



Alterra (Wageningen Environmental Research), Wageningen, the Netherlands, 1991. Has a rather straight trunk with a straight leader and long upright branches; develops a rather wide crown. Shows good growth and better characteristics than 'Robusta'. Buds moderately late. The young leaf is light green. Good wind resistance, excellent resistance to rust and bacterial canker, and good resistance to Marssonina brunnea. Can be planted under conditions that also apply to 'Robusta' and 'Spijk'. No problems planting near larches in view of its excellent resistance to rust. Because of its excellent wind breaking qualities, this tree can be planted in coastal areas without any difficulties.

## x canadensis 'Heidemij' ♂



USA, 1891. Available in the Netherlands since 1937. Has a straight trunk and a rather narrow crown. Cordate leaf with a green petiole. Once established, difficult to distinguish from 'Robusta'. Very low resistance to rust, susceptible to late frost, moderate resistance to Marssonina brunnea and not susceptible to bacterial canker. Good wind resistance. No longer cultivated.

## x canadensis 'Isières' ♀



Belgian Research institute Nature and Forest, INBO, Geraardsbergen, Belgium, 1970. A UNAL-selection. Has a very good trunk shape and few heavy branches. Is bacterial canker resistant, moderately susceptible to rust and has a low susceptibility to Marssonina brunnea. 'Isières' is very demanding with regard to planting location and is therefore more suitable for planting on sites with good soil conditions than for random avenue planting in soils of unknown quality. This variety is maintained in multiplication fields.



Populus x canadensis 'Hees'



Populus x canadensis 'Isières'

# Populus

fam. Salicaceae

Section Aigeiros



Populus x canadensis 'Koster'



Populus x canadensis 'Marilandica'

## x canadensis 'I 214' ♀



G. Jacometti, Italy, 1929. Available in the Netherlands since 1955. There was quite a lot of interest in the 'I 214' for a while, but due to its high susceptibility to *Marssonina brunnea* this fast-growing variety has almost completely lost its significance in the Netherlands. Planting is only recommended in areas south of the rivers Rhine and Meuse and only under perfect conditions. This variety is maintained in multiplication fields.

## x canadensis 'Koster' PBR ♂



The Netherlands, 1988. 'Koster' has a straight, round trunk. Young trees generally have a closed, wide pyramidal crown. Rather thin branches. The leaf is relatively small. Some individual trees have forked trunks. A good grower, better than 'Robusta'. Buds rather late from end-April to mid-May; the young leaf is light green. Good wind, rust and bacterial canker resistance, low susceptibility to *Marssonina brunnea*. Same planting conditions that apply to 'Robusta' and 'Spijk'. No problem planting near larches in view of its excellent resistance to rust. Because of its excellent wind breaking qualities, this tree can be planted in coastal areas without any difficulties.

## x canadensis 'Marilandica' ♀



France, 1800. Has a crooked trunk and a wide, strongly branched crown. Light green, wide cuneate foliage with a green petiole that emerges late. Susceptible to rust, very susceptible to *Marssonina brunnea*, but sufficiently resistant to bacterial canker and trunk scab disease. Rather sensitive to wind. Still being planted regularly. Characteristic landscape tree.

## x canadensis 'Ogy' ♂



Belgian Research institute Nature and Forest, INBO, Geraardsbergen, Belgium, 1970. A UNAL-selection. Has a very good trunk shape and develops few heavy branches. Is bacterial canker resistant, moderately susceptible to rust and has a low susceptibility to *Marssonina brunnea*. Suitable for avenue planting because of the regular and upward-growing crown shape, which more or less resembles that of 'Robusta'.

## x canadensis 'Polargo' PBR ♀



Alterra (Wageningen Environmental Research), Wageningen, the Netherlands, 2003. Forms a straight trunk to the top with upright branches. The light brown-green leaves emerge early. Very good tree for forestry. Good resistance to rust, *Marssonina brunnea* and bacterial canker. Best not to plant in neighbourhoods, because 'Polargo' forms considerable amounts of fluff.

# Populus

fam. Salicaceae

Section Aigeiros

## x canadensis 'Primo' ♂



Belgian Research institute Nature and Forest, INBO, Geraardsbergen, Belgium, 1970. A UNAL-selection. Form a straight and upright trunk, no heavy branches. Good wind resistance. Fully resistant to bacterial canker and rust, and has a low susceptibility to *Marssonina brunnea*. Its habit makes it also suitable for avenue planting.

## x canadensis 'Robusta' ♂

(syn. *Populus x canadensis* 'Zeeland')



Metz, France, 1885. A slender tree with a straight trunk and a rather narrow, regularly branched crown. A good grower. Low susceptibility to bacterial canker and *Marssonina brunnea*, susceptible to rust, late winter frosts and trunk scab disease. Very good wind resistance. Perfect for forest stands and particularly ideal for row and roadside planting.

## x canadensis 'Rona' PBR ♀



France, 2012. Good straight-growing tree. Quite late budding. Grows on all soils. Resistant to *Marssonina brunnea* and bacterial canker. Good tolerance to rust.

## x canadensis 'Serotina' ♂



France, 1750. Has a slightly crooked trunk and a wide, open crown at a later age. Young trees however, have a narrow crown. Slow growth in its juvenile stage, which improves as the tree matures. Very susceptible to rust and late frosts, moderately susceptible to *Marssonina brunnea* and trunk scab disease, fully resistant to bacterial canker. Moderately wind resistant. Planting is not recommended because of branch dieback, sometimes followed by the loss of the entire tree, which can occur as a result of late winter frost or other causes.

## x canadensis 'Serotina de Selys' ♂

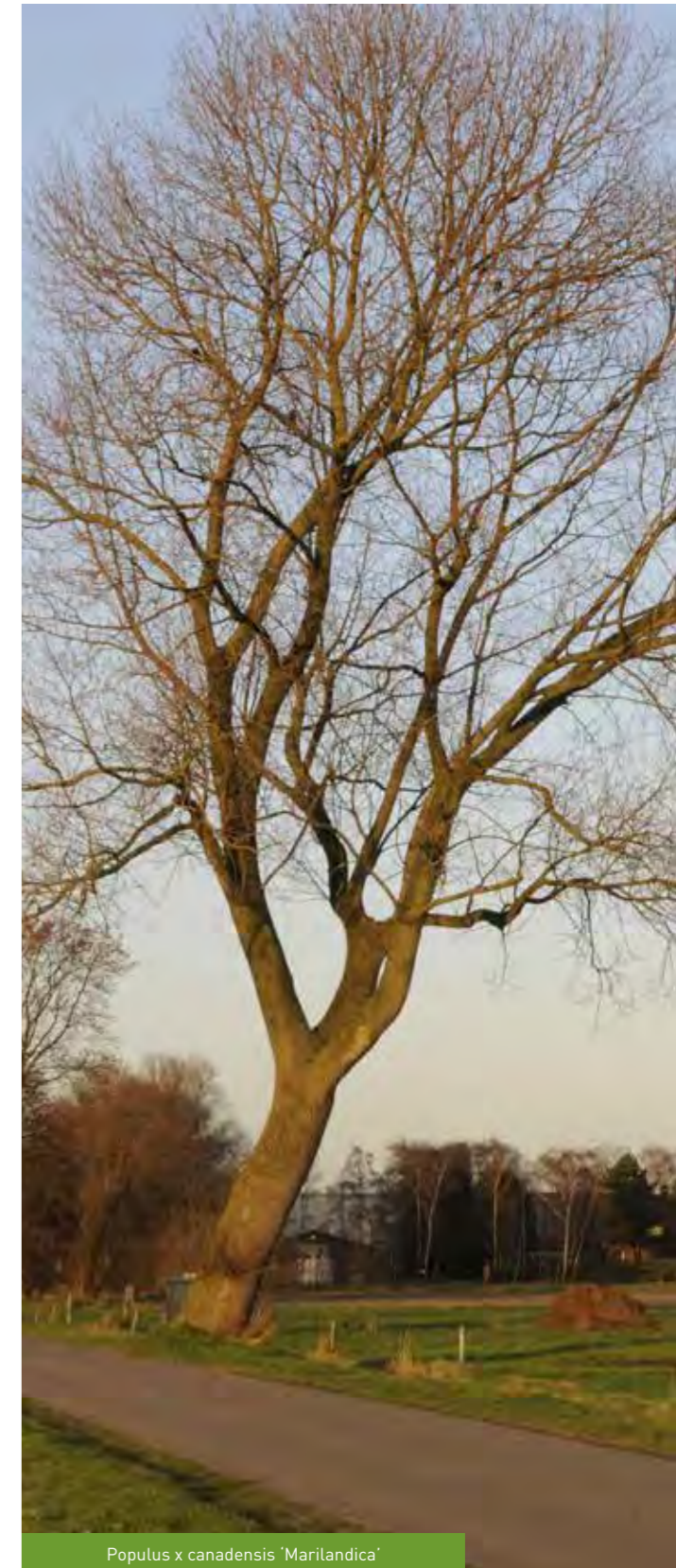


Belgium, 1864. Available in the Netherlands since 1963. Very similar to *Populus nigra* 'Italica', but it has a round trunk and a more open crown. Buds late. Slightly sensitive to rust, but hardly susceptible to *Marssonina brunnea* and bacterial canker. Suitable for avenues and wide streets. Hardly or not cultivated.

## x canadensis 'Spijk' ♂



Province Flevoland, the Netherlands, 1972. Named after an old topographic place in Flevoland: 'Het Spijk'. A straight, sometimes slightly crooked trunk and a wide crown. Leaves emerge late, brown-green. Good resistance to bacterial canker, *Marssonina brunnea* and rust. Relatively good resistance to wind. Still in production in small quantities.



Populus x canadensis 'Marilandica'

# Populus

fam. Salicaceae

Section Aigeiros



Populus x canadensis 'Serotina de Selys'



Populus nigra

## x canadensis 'Tardif de Champagne'

(syn. Populus x canadensis 'Keppel's Glorie')



France, 1890. Available in the Netherlands since 1969. Very similar to Populus x canadensis 'Serotina'. Forms a round wide crown. Late emerging. Very wind resistant. Susceptible to rust, quite resistant to Marssonina brunnea and bacterial canker.

## deltoides Eastern cottonwood, Necklace poplar



Wide, open and loose crown, up to 30 m high. Grey-green trunk, later darker and slightly grooved. Yellow-brown pointy and sticky buds. Triangular leaves 4-10 cm long, 4-11 cm wide. Male and female catkins, 7-10 cm long, buds before the leaves emerge. Then 12-20 cm long fruits appear. They contain capsules with 2-4 valves that release tufted seeds (the white 'cotton' seen at dispersal time).

## deltoides 'Purple Tower' PBR



Green Road Import and Export Co., Beijing, China, 2008. An upright, strong-growing dark-leaved selection. The cordate foliage turns from deep purple-red to almost black, and then turns purple-green. Orange-red autumn colouring. Forms some deadwood. Prune in winter. Grows on all soils.

## deltoides 'Siouxland' ♂



South Dakota State University, Brookings, South Dakota, USA. Seedless selection, which initially forms a narrow crown that later becomes pyramidal with a rounded top. Very fast-growing. Leaf species-specific, yellow autumn colouring. In addition, it forms deadwood in the crown. Prune in winter. Grows on all soils.

## x generosa 'Barn' ♀

(syn. Populus x interamericana 'Barn')



Has a straight trunk and a fairly wide crown. The growth has proven to be good. Very good resistance to bacterial canker and rust, good resistance to Marssonina brunnea. No longer cultivated.

## x generosa 'Beaupré' ♀

(syn. Populus x interamericana 'Beaupré')



Has a straight trunk and a fairly wide crown. The growth has proven to be good. Very good resistance to bacterial canker and rust, good resistance to Marssonina brunnea. No longer cultivated.

# Populus

fam. Salicaceae

Section Aigeiros

## x generosa 'Boelare' ♀

(syn. Populus x interamericana 'Boelare')



Belgian Research institute Nature and Forest, INBO, Geraardsbergen, Belgium, 1970. Good growing clone. Resistant to bacterial canker, slightly susceptible to Marssonina brunnea. No longer cultivated due to sensitivity to rust.

## x generosa 'Donk' ♀

(syn. Populus x interamericana 'Donk')



Has a moderately straight trunk. The crown is slightly thinner than 'Barn'. The growth has proven to be good. Resistance to bacterial canker and rust is very good; to Marssonina brunnea good. No longer cultivated.

## x generosa 'Hazendans' PBR ♀

(syn. Populus x interamericana 'Hazendans')



Spectacular growth, comparable to 'Beaupré'. Rooting capacity very high. Resistant to bacterial canker, moderately sensitive to Marssonina brunnea and sensitive to rust. Still in production in small quantities.

## x generosa 'Hoogvorst' PBR ♀

(syn. Populus x interamericana 'Hoogvorst')



Spectacular growth, comparable to 'Beaupré'. Rooting capacity very high. Resistant to bacterial canker, moderately susceptible to Marssonina brunnea and sensitive to rust. Still in production in small quantities.

## nigra Black poplar



Europe, North Africa, Central and West Asia. A large tree with heavy branches and often a wide, irregular crown. Leaf is rhombic to broad elliptical with a pointed tip; shoots are round, glabrous 4-10 cm. Buds late. Suitable for coastal areas. The tree has an excellent tolerance to onshore wind. Susceptible to rust.

## nigra 'Ankum' ♂



Research Institute for Forestry and Landscape 'De Dorschkamp', Wageningen, the Netherlands, 1962. Tree with a moderately wide crown and slightly crooked trunk. The verticil branches are thin, slightly wavy and grow distinctively upright. Low resistance to rust, reasonable resistance to Marssonina brunnea and hardly susceptible to bacterial canker. No longer cultivated.

## nigra 'Brandaris' ♂



Research Institute for Forestry and Landscape 'De Dorschkamp', Wageningen, the Netherlands, 1964. Hybrid of a Dutch and an Italian Populus nigra. Young trees have a straight trunk and a rather narrow crown. Suitable for landscape (roadside) planting. Generally grows well in coastal areas as well.



Populus nigra 'Brandaris'



Populus nigra 'Brandaris'

# Populus

fam. Salicaceae

Section Aigeiros



Populus nigra 'Italica'

**nigra 'Italica'** ♂ Italian poplar  
(syn. *Populus nigra* var. *pyramidalis*)



The well-known columnar poplar that is planted primarily in windbreaks, but is also used as a specimen tree in parks and public gardens. Because of its rather early deterioration plus its fragile leader and branches, it is unsuitable for roadside and street planting. Especially in paved surfaces, the deterioration can become visible after 25-30 years. Susceptible to rust, *Marssonina brunnea* and late frosts.

**nigra 'Loenen'** ♀  
(syn. *Populus nigra* 'Terwolde')



Research Institute for Forestry and Landscape 'De Dorschkamp', Wageningen, the Netherlands, 1959. Has a somewhat crooked trunk and a moderately wide crown. Susceptible to rust and *Marssonina brunnea*; low susceptibility to bacterial canker. Because of its good resistance to wind, this tree is recommended for planting in coastal areas. No longer cultivated.

**nigra 'Schoorlдам'** ♀



Research Institute for Forestry and Landscape 'De Dorschkamp', Wageningen, the Netherlands, 1976. Hybrid of two Dutch *Populus nigra* clones: 'Loenen' and 'Vereecken'. Has a straight trunk and a rather narrow round/ovate crown. Straight and protruding trunk with deep grooves. Very wind resistant. Suitable for landscape (roadside) planting. This variety is maintained in multiplication fields.

**nigra 'Vereecken'** ♂



Belgium, 1910. Tree with a straight trunk and narrow crown, but wider than 'Italica'. Height up to 25 m. Moderate grower. Very susceptible to rust, but unlike 'Italica', less susceptible to *Marssonina brunnea* and late frosts. Low susceptibility to bacterial canker and bark scorch. Not sensitive to wind. Among other uses, it is suitable for large windbreaks as a replacement tree for *Populus nigra* 'Italica'. Is widely used in the fruit cultivation areas of the Dutch province of Zeeland in heavy windbreaks that surround orchards.

**nigra 'Wolterson'** ♀



Research Institute for Forestry and Landscape 'De Dorschkamp', Wageningen, the Netherlands, 1960. A clone with a rather straight trunk and a moderately wide crown. Reasonable tolerance to rust, low susceptibility to *Marssonina brunnea* and bacterial canker. Produces fluff. Suitable for landscape (roadside) planting. Can also be planted in coastal areas.

# Populus

fam. Salicaceae

Unclassified crosses

Other poplars that have recently been discovered or created and which have not yet been classified are listed below. They are often complex crossings.

**'Bakan'** ♂



Belgian Research institute Nature and Forest, INBO, Geraardsbergen, Belgium, 1997. Hybrid of *Populus trichocarpa* and *Populus maximowiczii*. Moderately straight-growing, pale trunk. Oblong, ovoid crown. Light side branches. Grows very well on acidic soils, best not to plant on heavy soils. Resistant to bacterial canker, not particularly susceptible to *Marssonina brunnea*, tolerates rust. For forestry, planting, biomass.

**'Bellebeek'** ♂



Belgian Research institute Nature and Forest, INBO, Geraardsbergen, Belgium, 1997. Good straight growth. Grows on all soils. Resistant to bacterial canker, not particularly susceptible to *Marssonina brunnea*, tolerates rust. Used for biomass, not for log production.

**'Bello'** ♂



Alterra (Wageningen Environmental Research), Wageningen, the Netherlands, 2003. Selected from seedlings of a 1970 hybrid of *Populus deltoides* from Ohio, USA as the mother and *Populus nigra* from Saumur, France as the father. Has a straight trunk with a central leader and upright branches. Buds early. Wind resistant, thus suitable for coastal areas. Resistant to rust, *Marssonina brunnea* and bacterial canker.

**'Dender'** ♂



Belgian Research institute Nature and Forest, INBO, Geraardsbergen, Belgium, 1997. Named after the river De Dender that originates in France and flows into the Scheldt in Dendermonde, Belgium. Hybrid of *Populus deltoides* x (*Populus trichocarpa* x *Populus maximowiczii*). Straight-growing, sometimes slightly twisting, smooth, pale bark. Oblong ovoid crown. Verticil branching. Buds early. Grows best in rich and moist soil types. Resistant to bacterial canker, not particularly susceptible to *Marssonina brunnea*, tolerates rust. For forestry planting.

**'Grimminge'** PBR ♂



Belgian Research institute Nature and Forest, INBO, Geraardsbergen, Belgium. The genetic background of this new clone is very complex. The mother is already an artificial hybrid of *Populus deltoides* from Michigan, USA and *Populus deltoides* from Connecticut, USA. The father is known as the 'Unal' clone. Buds very late. This clone is resistant to bacterial canker. 'Grimminge' is susceptible to a certain type of rust. A good and fast grower, grows on variable planting locations. Very suitable for wood production (timber), less suitable for veneer.



Populus 'Bakan'

# Populus

fam. Salicaceae

Unclassified crosses



Populus 'Suwon'

## 'Grosso' PBR ♂



Alterra (Wageningen Environmental Research), Wageningen, the Netherlands, 2003. Selected from seedlings of a 1969 hybrid of *Populus deltoides* from Ohio, USA as the mother and *Populus nigra* from Voorst, the Netherlands as the father. Has a straight trunk with a central leader and upright branches. Buds early. *Populus* 'Grosso' is male. Wind resistant, therefore suitable for coastal areas. Good resistance to rust, *Marssonina brunnea* and bacterial canker.

## 'Largo' ♂



Alterra (Wageningen Environmental Research), Wageningen, the Netherlands, 2003. Selected from seedlings of a hybrid made in 1973 of *Populus deltoides* from Belgium and *Populus nigra* from Italy as the mother, and a *Populus nigra* from Heesselt, the Netherlands as the father. Has a straight trunk with a central leader and upright branches. Buds early. Good wind resistance and suitable for coastal areas. Good resistance to rust, *Marssonina brunnea* and bacterial canker.

## 'Marke' ♀



Belgian Research institute Nature and Forest, INBO, Geraardsbergen, Belgium, 1997. Hybrid of *Populus deltoides* x (*Populus trichocarpa* x *Populus maximowiczii*). Straight-growing, sometimes slightly twisting, smooth, pale bark. Oblong ovoid crown. Verticil branching. Grows on all soils. Bacterial canker resistant, not particularly susceptible to *Marssonina brunnea*, tolerates rust. For forestry planting, biomass.

## 'Muur' PBR ♂



Belgian Research institute Nature and Forest, INBO, Geraardsbergen, Belgium, 1997. The mother is a descendant from a crossing between *Populus deltoides* from Iowa, USA and *Populus deltoides* from Illinois, USA. The father is *Populus nigra*. *Populus* 'Muur' has a good straight trunk shape and dark, coarse bark. Small ovoid crown. Verticil branching, upright. Male clone. Buds late, which is positive in view of spring frosts. Very resistant to bacterial canker. Less susceptible to rust. Not as suitable for wood production (timber). Perfect for use as veneer.

## 'Oudenberg' PBR ♀



Belgian Research institute Nature and Forest, INBO, Geraardsbergen, Belgium, 1997. The mother is a descendant from a crossing between a *Populus deltoides* from Iowa, USA and a *Populus deltoides* from Illinois, USA. The father is *Populus nigra*. Very straight trunk shape. Smooth light grey bark. Wide ovoid crown. Verticil branching. Female clone. Buds late, which is positive in view of spring frosts. Very resistant to bacterial canker. Less susceptible to rust. Suitable for wood production (timber) and can be used for veneer. Landscape tree.

# Populus

fam. Salicaceae

Unclassified crosses

## 'Sanosol' PBR ♀



Alterra (Wageningen Environmental Research), Wageningen, the Netherlands, 2003. Selected from seedlings of a crossing made in 1976 with a *Populus deltoides* from Belgium and *Populus nigra* from Italy as the mother and a *Populus nigra* from Brommen, the Netherlands and *Populus nigra* from Italy as father. Has a straight trunk with a central leader and upright branches. Buds early. Good wind resistance and suitable for coastal areas. Good resistance to rust, *Marssonina brunnea* and bacterial canker.

## 'Suwon' ♀



Research Institute for Forestry and Landscape 'De Dorschkamp', Wageningen, the Netherlands, 1968. Crossing between a *Populus deltoides* and *Populus maximowiczii* for which pollen found in the city Suwon in Korea, were selected. It has a straight trunk with smooth bark. Nice horizontal branch position in the lower part of the crown, which is more upright higher in the crown. Displays fairly good growth, but not as good as 'Robusta'. Buds very early, end of March; the young leaves are light green. From early spring (before 31 March) to late autumn (after 15 October), a beautiful, fully leafed tree. The resistance to wind, rust, *Marssonina brunnea* and bacterial canker is reasonable. This variety is maintained in multiplication fields.

## 'Vesten' ♀



Belgian Research institute Nature and Forest, INBO, Geraardsbergen, Belgium, 1997. The mother is a descendant from a crossing between *Populus deltoides* from Iowa, USA and *Populus deltoides* from Illinois, USA. The father is *Populus nigra*. *Populus* 'Vesten' has a good straight trunk shape. Smooth and light grey bark. Wide ovoid crown. Verticil branching. Female clone. Buds late, which is positive in view of spring frosts. Very resistant to bacterial canker. Less susceptible to rust. Very suitable for wood production (timber). Suitable for veneer, but has a lot of heartwood.



Populus 'Vesten'



# Prunus

fam. Rosaceae

## Cherry, Plum, Peach

A genus that comprises over 200 species. Plum (*domestica*), Peach (*persica*), Almond (*amygdalus*), Apricot (*armeniaca*), Cherry (*cerasus*), Bird cherry (*padus*) and other species. Many books have been written about Prunus and rightly so. The Prunus genus includes tall and medium-sized trees, high shrubs and creepers of all kinds and inflorescences. In its various forms, Prunus usually has more characteristic shapes than Malus. Since there is a multitude of varieties, it is a good thing that the dendrological yearbook *Dendroflora* offers a selection. As is the case with Malus, blossoming periods of Prunus vary widely.

### 'Accolade'

(*Prunus subhirtella* x *Prunus sargentii*)



Knap Hill Nurseries, Woking, UK, 1930. Small tree with a wide, loose crown, 7-8 m high. Thin, overhanging branches and twigs. Blossoms early with half-double, pink flowers in suspending bunches. Orange-yellow to red autumn colouring. Good street tree.

### x *amygdalopersica*

(*Prunus dulcis* x *Prunus persica*)



Small tree with a rather round, loose crown. Lancet-shaped leaves that look like peach leaves. Blossoms in March-April, pure pink. Rather large edible, peach-like fruits. Specimen tree for parks and gardens in sunny locations on fertile soil.

### *avium* Sweet cherry, Wild cherry

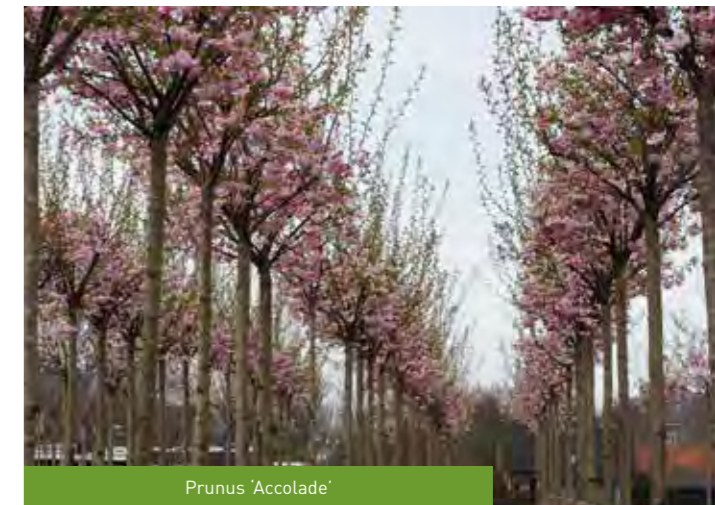


Tall tree with a wide pyramidal crown, 15-20 m high. In the wild, often a multi-stem shrub. Single, white flowers in April-May. Round, red often almost blackish-red cherries on long stalks. Primarily a park tree, for woodland parks and such. Ideal for landscape use. May also be used as an avenue tree on open green verges. The 'Plena' variety is used more often as an avenue and street tree.

### *avium* 'F12-1'



This clone of *Prunus avium* is often used as a rootstock. This clone grows better on heavier soils and has a good resistance to bacterial canker. Growth species-specific.



Prunus 'Accolade'



Prunus 'Accolade'

Prunus 'Kanzan'



Prunus cerasifera 'Nigra'



Prunus cerasifera 'Nigra'

## avium 'Landscape Bloom'



Research Institute for Forestry and Landscape 'De Dorschkamp', Wageningen, the Netherlands, 1989. Initially the tree is rather narrow pyramidal, later it develops a wider crown, with a straight central leader and relatively light branching. Can reach heights up to 15-20 m. Leaf species-specific, strikingly bright green. Blossoms species-specific end of April with pure white flowers 25 mm in size. Small fruits, sparse and non-edible. Soil requirements species-specific, but also grows on poor and drier sandy soils. Park and landscape tree for rural roads.

## avium 'Plena' Wild cherry



France, 1700. Species-specific growth, 12-15 m high. Blossoms abundantly with double white flowers in early May. Not fruit-bearing. Orange-yellow autumn colouring. For moist, fertile, calcareous, loamy soils. Avenue and street tree for wide street profiles. Also excellent for parks.

## x blireana



Victor Lemoine (1823-1911), Nancy, France, 1906. Shrub or small tree, oval shape, height 4-6 m. Bronze to purple coloured, ovate leaves, 4-6 cm in size. Blossoms pink in April. Fruitless hybrid. Requires humus-rich and well-drained soil. Garden and park tree.

## x blireana 'Moseri'



J. Moser, Versailles, France, 1895. Often a wide, upright-growing shrub. Sometimes a small tree. Bright red leaves. Small, pink flowers in April. For parks and gardens.

## cerasifera 'Crimson Pointe'®

(syn. Prunus cerasifera 'Cripoizam')



Lake County Nursery, Perry, Ohio, USA, 2007. Selection from Prunus cerasifera 'Newport' seedlings. Narrow, columnar growth. Shiny, dark brown to purple-brown trunk. Elongated to ovate leaves, 8-10 cm, dark red-brown. Blossoms in abundance with pink, single 2.5 cm flowers from March until mid-April, just before the leaves emerge. Dark red fruits, 2-3 cm. Prefers moist humus-rich soils and can be planted along narrow streets and lanes.

## cerasifera 'Nigra'

(syn. Prunus pissardii, Prunus cerasifera 'Woodii')



France, 1875. Tree with a round, rather dense crown, 4-7 m high. Relatively large dark auburn leaf that keeps its colour. Blossoms very abundantly in early April, with single pink flowers. Bears some red fruits. Park tree, may also be used as an avenue tree on open verges, also on loamy soils.

## cerasus 'Rhexii'



Switzerland, 1623. Small tree with a half-open, regular, spherical crown. Green leaf, species-specific. Blossoms at the same time as the leaf development with filled, cream-white flowers, 3 cm that have a green heart with yellow anthers and are spreading to upright. Blossoms relatively long from early to late May. Beautiful avenue tree for smaller avenues on open verges; also for private and public gardens. Hardly cultivated.

## cerasus 'Umbraculifera'



Späth'sche Baumschulen, Berlin, Germany, 1884. Cultivar with a round, densely branched and rather compact crown with small, dark green leaves. Small white flowers and dark red fruits. Park tree and avenue tree on open green verges in slightly wider road profiles.

## dulcis 'Balaton' Common almond

(syn. Prunus amygdalis 'Balaton')



A columnar selection of the Prunus dulcis imported from the Balaton Lake region in Hungary. Inflorescence species-specific, light pink. For public and private gardens. May be planted on green verges in lanes in rural areas. No longer cultivated.

## eminens 'Umbraculifera' Globe cherry

(syn. Prunus fruticosa 'Globosa')



UK, 1597. When top grafted developing a beautiful spherical crown of around 1 m wide and high. Small, shiny dark green leaf. Blossoms species-specific in April-May with small (up to 15 mm) white flowers in small bunches. Red, round fruits, 10 mm. Beautiful little tree with minimal soil requirements. For narrow streets, small squares, residential areas, small gardens and such.

## fruticosa Steppe cherry



Origin: Central and Eastern part of Europe, Siberia. By nature a low, round shrub, 1 m wide and high. The bark is dark brown with yellow lenticels. The leaves are oblanceolate to obovate, about 12-6 mm, dark green and turning yellow in autumn. This species thrives on almost any soil type, but prefers loamy soils. Requires a planting location in full sun.

## x gondouinii 'Schnee' Duke cherry

(Prunus avium x Prunus cerasus)

(syn. Prunus 'Schnee', Prunus x effusa 'Schnee', Prunus cerasus 'Schnee')



Wilhelm Pfitzer, Stuttgart, Germany, 1920. Small, densely branched tree with an oblate spherical crown, 4-5 m high. Thin twigs. Large, pure white single flowers, late April early May. Splendid tree for parks and gardens, when top grafted, it is also an attractive, small street tree for narrower streets.



Prunus x gondouinii 'Schnee'



Prunus x gondouinii 'Schnee'

# Prunus

fam. Rosaceae



Prunus laurocerasus 'Caucasica'



Prunus lusitanica

## 'Hally Jolivette'

(Prunus x subhirtella x Prunus x yedoensis)



Karl Sax, Arnold Arboretum, Boston, USA, 1940. Shrub or small tree with thin twigs. Small, oval, sharply serrated leaves. Blossoms in April-May with white filled flowers with a pink heart. Crown thinning is recommended. Use in small gardens. Grows on all soil types, if not too wet.

## incisa Fuji cherry



Origin: Japan. Imported in Europe in 1912. Small tree with a densely branched, ovoid crown, height 5 m. Blossoms abundantly with small, white single flowers that have a purple-red calyx and flower base. Very early. Ovate leaf, 4-5 cm. Yellow to orange autumn colouring. Unripe fruit is green, turning black in 24 hours in warm weather. For larger gardens and parks, also as an avenue and street tree on open green verges.

## incisa 'Louisa Leo'



Ton van den Oever, Haaren, the Netherlands. Narrow upright tree. Height 6 m, width 2 m. Own-root propagation. Blossoms profusely with small, single, light pink flowers with a purplish-red cup and flower receptacle. Blossoms very early. Oval leaf, 4-5 cm. Autumn colour orange to red. Unripe fruit green, turning black in 24 hours in warm weather. Monilinia resistant (brown rot). For narrow streets and small gardens.

## laurocerasus 'Caucasica'



France, 1852. Originally a shrub, recently also cultivated in a tree shape. Height 5-6 m, width 2.5-3 m. Upright branches with narrow elliptical, bright green, shiny leaves, 13-17 cm in size. Flowers with spikes of white flowers in May-June. Dark grey to black trunk. Hardy.

## laurocerasus 'Genolia'®

(syn. Prunus laurocerasus 'Mariblon')



Genolier Pépinières, Genolier, Switzerland. Over the past years, this evergreen selection has been cultivated as a small tree. Very narrow growth. 3.5-4 m high, 0.8-1 m wide. Dark green long, narrow lancet-shaped leaves. White flowers in April-May. Very hardy. Small gardens and narrow streets.

## lusitanica Portuguese laurel cherry



Very dense, wide rising shrub. Height up to 5 m. Width up to 6 m. Also cultivated as an evergreen tree. Retains its leaves. Leaves narrow to wide elliptical (6-9 cm). White flowers in rising 12-15 cm long bunches. Flowering period: June. Easy to prune. To be used both as a specimen and in groups.

# Prunus

fam. Rosaceae

## maackii Manchurian cherry



Origin: Korea, Manchuria. Introduced in Europe 1910. Named after the Russian botanist Richard Maack (1825-1886). Fast-growing, medium-sized tree with a height of 8-15 m. Wide conical crown. Bark of the trunk and older branches is strikingly golden-brown, very beautiful. Later peeling. Small, white, fragrant flowers in bunches, does not flower profusely. A beautiful specimen tree for parks because of the striking trunk colour.

## maackii 'Amber Beauty'



The Netherlands. Good-growing variety of the species with bright green leaves. Wide-rising, closed crown. Height 8-12 m. Flowers species-specific. A striking tree because of the copper colour of its trunk and older branches. Bark peels off later. Specimen tree for parks.

## maackii 'Honey'



A cultivar imported from Sweden by Boomkwekerij Udenhout. Grows slightly better than 'Amber Beauty'. Branches more delicate than the species, which ensures a better crown shape development. Shiny, copper-coloured trunk and branches. Peeling bark. Small fragrant flowers in bunches. Beautiful park and specimen tree.

## mahaleb Mahaleb cherry, St. Lucie cherry



Origin: The Middle East and Southern Europe. Up to 8 m in height, oval to ovoid shaped crown. Round to oval leaves with a pointed tip. Blue-green underside. White, fragrant single 3-10 flowers in umbels. Ovoid drupes, 1 cm in size, black when ripe, sour in taste. Mahleb or Mahalepi is an aromatic spice made from the seed (kernels) of this species. Bitter in taste, mainly used in Turkey, Iran, Syria and Greece.

## 'Mahogany Lustre'

(syn. Prunus nigra 'Mahogany Lustre')



Very fast-growing tree with a wide-rising crown. Height 8-10 m. Shiny, dark brown to mahogany-coloured bark at a later age. Healthy, green leaf that keeps its colour far into autumn. Relatively striking white flowers. 2-3 flowers combined. Beautiful yellow and red autumn colouring. Its disadvantage is that it gums, as a result of which it is hardly cultivated. Attractive as a specimen tree in parks.

## mume 'Beni-chidori' Japanese apricot

(syn. Prunus mume 'Beni-shidare')



Origin: China and Korea. Imported in Europe in 1844. Should be considered a plume, rather than an apricot. In the Far East, this Prunus symbolises a long life. In Japan, more than 300 cultivars occur. Height 6-8 m. Its fruits are very fragrant and have a sharp taste. In our region, fruits rarely appear. Wide, round to ovoid foliage, 5-10 cm in size, shiny dark green and slightly lighter in colour on the underside. Fine, doubly-serrate leaf margin. Hardy, for use in small gardens.



Prunus maackii 'Amber Beauty'



Prunus maackii 'Amber Beauty'



Prunus maackii 'Amber Beauty'

# Prunus

fam. Rosaceae



Prunus padus 'Tiefurt'



Prunus 'Pandora'

## 'Okame'

(Prunus incisa ♀ x Prunus campanulata ♂)  
(syn. Prunus x incamp 'Okame')



Captain Collingwood Ingram of England, Moris Arboretum, Benenden, UK, 1930. Rather compact, relatively narrow-rising shrub, 3-5 m high. However, when top grafted a rising tree with a height of 5-7 m and a width of 4-5 m. Relatively small and narrow leaf. Shoots slightly bronze-coloured, later turning green, and then turns red and orange in autumn. Blossoms with dark pink flowers 2-3 combined, 20 mm. Blossoms abundantly in late March early April. Beautiful ornamental cherry for private and public gardens. However, for good growth, flowering and crown development it needs to be planted in a sunny, warm and sheltered location. Sufficiently frost resistant in the Netherlands.

## padus Bird cherry



Origin: Europe, Eastern Asia. In the Netherlands also indigenous to woods, wooded banks and such on fertile, moist soils. Moderately tall tree, 15-17 m. Dense crown with slightly overhanging branches. Large elliptic to obovate leaf, 6-12 cm long. Blossoms in April-May with small white flowers in spreading to overhanging flower bunches. Pea-sized black fruits. Endures shade. For fertile soils that are not too dry. Primarily for landscaping, parks, etc. For avenue and street planting, the cultivars of Prunus padus are often used.

## padus 'Albertii'



Victor Lemoine (1823-1911), Nancy, France, 1900. Tree with a rather compact, oval crown that is much more closed than the species and 'Watereri'. Height 8-10 m. Flowering period: April and May. Very fragrant, white flowers in abundance. Avenue tree on green verges for wide avenues or streets.

## padus 'Colorata'



Klevshult, Sweden, 1953. Introduced in 1960. Closely related to Prunus virginiana. Medium-sized tree. Reasonably round crown with a height of 6-8 m. Young leaf is auburn-coloured. Blossoms pink in bunches, April-May. Specimen tree for parks.

## padus 'Nana'



A small cultivar with a height of 3-4 m and a densely twigged spherical crown. Leaf species-specific, slightly smaller. Blossoms species-specific and abundantly with white bunches in April-May. Fruits species-specific. For public gardens, shopping centres, residential areas, pedestrian areas, etc. Also for narrow streets and lanes.

## padus 'Tiefurt'

(syn. Prunus padus 'Schloss Tiefurt')



Schlosspark Tiefurt, Weimar, Germany. Forms a closed narrow conical crown. Height 9-12 m, width 3-4 m. Elongated, elliptical leaves with a finely serrated leaf margin. Flowering time: April-May. White fragrant flowers in bunches that are 10-15 cm long. Does not bear many fruits. Yellow-orange autumn colouring. Deeply rooting. Grows on all soils. For narrow streets.

# Prunus

fam. Rosaceae

## padus 'Watereri'

(syn. Prunus padus 'Grandiflora')



Waterer Sons & Crisp, Bagshot, UK, 1914. Good-growing, medium-sized tree, 15-17 m high, with a wide, loose crown. Up to 20 cm long white flower bunches. Street and avenue tree for wider profiles, preferably on green verges because of its relatively low crown. Also used as a park tree.

## 'Pandora'

(Prunus x subhirtella 'Rosea' x Prunus x yedoensis)



Waterer Sons & Crisp, Bagshot, UK, 1939. If top grafted, it is a small tree with a height of 4-5 m, with a rising, more or less columnar crown. The young leaf emerges auburn. Many light pink, single flowers in April. For gardens. Suitable for narrower streets on open verges.

## pensylvanica 'Auburn Splendor'



Auburn University, Alabama, USA. Up to 8 m tall tree with a chestnut brown bark. Rather long narrow leaf, 6-11 cm long, bright green. Blossoms late April-early May with bright white flowers, 15 mm, in bunches of 3-6 together. Round, bright red fruits, 5-7 mm.

## sargentii Sargent's cherry



Origin: Japan. Medium-sized tree with a wide, rising crown and a height up to 8-12 m. Shiny, dark brown bark, very attractive. Young leaf is auburn-coloured, later turning green. Blossoms before leaf development with rather, large pink flowers in bunches. Many trees develop a beautiful, red autumn colour. Park tree.

## sargentii 'Charles Sargent'



Named after Charles Sargent (1841-1927), the first director of the Arnold Arboretum, Oregon, USA. Tree with a height of 8-10 m and a round to oblate crown. Trunk with a beautiful, shiny, chestnut brown bark. Buds bronze-coloured, turning green in summer. Orange-red autumn colouring. Blossoms abundantly early April before the leaf emerges with light pink flowers, 30-35 mm, 2-4 combined. Blossoms for three weeks, hardly losing colour. Dark red, small fruits. For parks, avenues and streets.

## sargentii 'Rancho'



Scanlon & Associates, Olmsted Fall, Ohio, USA, 1961. Narrow-rising to columnar crown, 8-10 m high and 3-4 wide. Leaves species-specific, but its flowers are larger and darker pink. Very abundant flowering. Reddish bark. Specimen tree for parks and gardens. In addition, an avenue and street tree for narrower profiles, preferably on green verges.



Prunus sargentii 'Charles Sargent'



Prunus sargentii 'Rancho'

# Prunus

fam. Rosaceae



Prunus serrula



Prunus serrulata 'Amanogawa'



Prunus serrulata 'Amanogawa'

## x schmittii

(Prunus avium x Prunus canescens)



Arnold Arboretum, Boston, Massachusetts, USA, 1923. This fast-growing, narrow, conical tree is suitable for public green spaces. Height 10 m. Also endures pavement well and requires little or no pruning. The flowers are white with a light pink hue. Its ornamental value lies in its yellow-orange autumn colouring and striking auburn trunk with horizontal lenticels.

## serrula Tibetan cherry

(syn. Prunus tibetica, Prunus serrula var. tibetica)



Origin: West-China. Imported in Europe in 1908. A 6-8 m tall tree with a rather wide, loose crown. The bark is shiny mahogany-coloured with thin bark strips. Bark peels off in established trees. Lance-shaped, pointy leaf with a red autumn colour. Blossoms modestly with light pink to white flowers, 19 mm. Late July, red fruits occasionally appear. Ornamental park tree, also available as a shrub.

## serrula 'Branklyn'®



Branklyn Botanical Garden, Perth, Scotland, UK. Growth similar to the species, but it has a nicer mahogany-red bark, strongly peeling. Also keeps its leaves better in the summer than the species.

## serrulata Japanese cherry, Oriental cherry, Hill cherry



The Japanese cherry comprises a wide range of valuable ornamental trees for parks, public and private gardens mainly because of its rich and striking spring blossoms. Several cultivars with strong straight trunks and good crowns are also used as avenue and street trees; in that case however, they prefer a spot on wide green banks and verges. Especially in pavement (lighter soil types), its growth is often not as good or even weak, and quite often the top of the central leader may die, as well as older branches. In such conditions, its life is shorter than when planted in open soil types. Some smaller varieties can also be of great value to smaller gardens.

## serrulata 'Amanogawa'

(syn. Prunus serrulata 'Erecta')



Japan, 1830. Introduced in Europe by Ernest Wilson (1876-1930) in 1916. In Japanese, 'Amanogawa' means *the galaxy or river of the heavens*. Well-known, narrow columnar, upright-growing ornamental cherry, 5-6 m high. The young leaf is yellowish-bronze in colour. Blossoms abundantly, with dense bunches of single to half-double, soft pink flowers along the rising branches and twigs. Very suitable for smaller gardens.

# Prunus

fam. Rosaceae

## serrulata 'Asano'

(syn. Prunus serrulata 'Geraldine')



Japan, introduced in 1929. Named after the Japanese samurai warrior Naganori Asano (1665-1701), hero in the historical tragedy of the 47 Ronin. Small, upright and thinly branched shrub or small tree. Buds light bronze during flowering. Flowers are deep pink, almost all of them with double petals, 35 mm. Closely resembles the well-known Weeping cherry. Park tree, also suitable for smaller gardens because of its rising growth and rich blossoms.

## serrulata 'Fugenzo'

(syn. Prunus 'Shirofugen', Prunus serrulata 'Jas. H. Veitch')



Japan, 1500. Tree with a wide-spreading, rather open crown, 5-6 m high. Buds deep bronze during its blossoming period in mid-May. Blossoms for 14 days. Flowers in loose, long-stalked bunches. Well-filled flowers, pink buds, pure white when opening then turning light pink. Attractive contrast between the fresh leaf and the flowers. Beautiful park tree, avenue tree for wide profiles.

## serrulata 'Hokusai'

(syn. Prunus serrulata 'Roseoplenta')



Japan, imported in the Netherlands in 1866. Named after the Japanese artist Hokusai Katsushika (1760-1849). Wide grower, initially more upright. Buds almost green, slightly bronze-coloured. Blossoms with light pink, half-double filled flowers, 45 mm. Park tree and good street tree for wide profiles.

## serrulata 'Ichiyo'

(syn. Prunus serrulata var. speciosa)



Origin: Japan. Ernest Henry Wilson (1876-1930) imported this variety in Europe in 1916. Forms a wide, vase-shaped crown, 5-6 m high. Buds brown-green, then turns green and changes colour from yellow to orange in autumn. Blossoms light pink in April. Grows on all soils, if not too moist. Does not tolerate pavement. Very hardy. Can be planted in open verges or gardens.

## serrulata 'Jo-nioi'

(syn. Prunus serrulata 'Affinis')



Strong grower with a wide crown. Numerous pure white, single flowers in long-stalked bunches. Fragrant flowers in abundance. *Jo-nioi* means supreme scent / fragrance in Japanese. Good park tree, also suitable as an avenue tree on wider green verges.



Prunus serrulata 'Fugenzo'



Prunus serrulata 'Fugenzo'



Prunus serrulata 'Jo-nioi'

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Prunus serrulata 'Kanzan'



Prunus serrulata 'Kanzan'



Prunus serrulata 'Pink Perfection'

## serrulata 'Kanzan'

(syn. Prunus serrulata 'Kwanzan', Prunus serrulata 'Sekiyama')



The name refers to the poet and monk Kanzan (in Chinese: Hanshan) who lived in a temple on China's sacred Mount Tiantai. This variety is sometimes incorrectly referred to as 'Hizakura', but that variety has single flowers. Strong grower with a wide vase-shaped crown, 10-12 m high. Width 5-8 m. Buds bronze-coloured at the same time as the flowers develop. Flowering period: April-May. The most widely used Japanese ornamental cherry with dense bunches of double pink flowers. Specimen tree for parks and public gardens, also used as an avenue and street tree on green verges in wide street profiles. Very valuable and vigorous.

## serrulata 'Kiku-shidare' Weeping cherry

(syn. Prunus serrulata 'Shidare-zakura')



Well-known, double-flowered Weeping cherry. The branches suspend in large arches. Can be top grafted on half standard and standard trees. Densely filled, deep pink flowers in abundance. Beautiful specimen tree on park lawns, in public gardens and in larger private gardens.

## serrulata 'Pink Perfection'



Waterer Sons & Crisp, Bagshot, UK, 1935. Its habit and growth resemble 'Kanzan'. Big tree with a wide crown. Young leaf is less auburn. Flower buds are pinkish-red, pure deep pink when opening, 45 mm. Blossoms richly in dense bunches. Application similar to 'Kanzan'. Very beautiful in large groups in parks, when planted together with 'Kanzan' and 'Jo-nioi'.

## serrulata 'Royal Burgundy'



Frank Parks, Speer and Sons Nursery, Woodburn, Oregon, USA, 1990. An ornamental cherry with a wide, more or less vase-shaped crown and deep purple foliage. Height 6-8 m. A selection from the well-known Prunus serrulata 'Kanzan'. Leaf reddish-orange in autumn. Park tree and avenue tree on open green verges.

## serrulata 'Shirotae'

(syn. Prunus serrulata 'Mount Fuji')



Origin: Japan. Shirotae means *snow white* or *snowflake* in Japanese. Very wide growth because of horizontally spreading branches. Height 4-6 m and width 8-10 m. Foliage emerges green. Blossoms abundantly at a young age. Half double, sometimes single snow-white flowers, in suspending bunches. Beautiful park tree. Because of its wide crown and overhanging branches, less suitable as an avenue tree.

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## serrulata 'Shogetsu'

(syn. Prunus serrulata 'Shimidsu', Prunus serrulata 'Miyako')



Japan, 1800. Introduced in Europe in 1916. When this variety is top grafted, it has a very wide, oblate crown with a height of 2-3 m at a total tree height of 4-5 m. Leaf emerges copper-red. Pink flower buds, pure white when opening, 5 cm, double. Park tree. Because of its horizontally spreading branches, it is only suitable as an avenue tree on wide green verges.

## serrulata 'Sunset Boulevard'



Arboretum Kalmthout, Belgium, 1988. Introduced by Boomkwekerij Udenhout. Rather narrow, rising selection with slightly outward bending branches. Height 8-10 m. Blossoms with disc-shaped, single flowers, white with a pink edge, in pairs. Strong grower. Beautiful park tree.

## serrulata 'Tai-Haku'

(syn. Prunus serrulata 'Taihaku')



Origin: Japan. Tai-Haku means *big white* in Japanese. This selection has been cultivated since 1700. Half-open, round to fan-shaped growing shrub or tree, up to 8 m. The dark green elliptical leaves emerge bronze-coloured, are 10-15 cm long and have a serrated margin. Yellow-orange autumn colouring. Grey-brown, slightly grooved trunk. White to pale pink flowers 5-6 cm, in April. Almost never bears fruit. Grows on all soils, except on wet soil types. Not suitable for pavement. Good frost resistance.

## serrulata 'Ukon'



Ukon means *yellowish* in Japanese. When top grafted, it has a big, open crown. Height 6-8 m. Width up to 10 m. Leaves emerge bronze-coloured, later turning green, yellowish red to brown autumn colours. A striking tree because of its yellowish-white to greenish-yellow flowers that contrast attractively with the fresh foliage. Half-double, 45 mm flowers in suspending bunches. Beautiful tree for parks and public gardens.

## 'Snow Fountains'®

(syn. Prunus x 'Snofozam')



Lake County Nursery, Perry, Ohio, USA, 1985. Weeping variety among the hybrid ornamental cherries. Graciously weeping with a finely and beautifully branched crown, 3-4 m high and almost the same width, with overhanging branches that touch the ground. Narrower than other Weeping cherries. Small dark green leaves with golden-yellow to orange autumn colour. White flowers in suspending bunches, in abundance like a 'white waterfall'. Ornamental tree for private and public gardens. Hardly cultivated.



Prunus serrulata 'Shirotae'



Prunus serrulata 'Shogetsu'



Prunus serrulata 'Sunset Boulevard'

# Prunus

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Prunus x subhirtella 'Autumnalis'



Prunus x subhirtella 'Autumnalis Rosea'



Prunus x subhirtella 'Autumnalis Rosea'

## 'Spire'

(Prunus sargentii x Prunus x yedoensis)  
(syn. Prunus hillieri 'Spire')



Hillier Nurseries, Ampfield, Romsey, UK, early 1920s. Small, columnar tree with a height up to 7 m and 2 m width. Straight upward, rising branches. Blossoms very early with small, pink, single flowers. For small gardens and green verges in narrow streets.

## x subhirtella 'Autumnalis'

(syn. Prunus x subhirtella 'Jugatsu-Zakura')



Takagi Nursery, Japan, 1904. Large shrub or medium-high tree, with a height of 5-7 m and a wide, relatively open crown. Inclining, later more overhanging branches and thin twigs. The leaf has yellow to orange-yellow autumn colours, which slightly "veils" the late flowering: the tree blossoms in autumn just before the leaves drop. Half-double, white or light pink flowers, late November-early December. Continued blossoming, to a lesser degree, in April. Because of its remarkable flowering period, a striking park tree or large shrub.

## x subhirtella 'Autumnalis Rosea'



Oyama City, Japan, 1954. One of the most beautiful 'Autumn cherries'. Growth and habit somewhat similar to 'Autumnalis', height 6-8 m, with strong branches and twigs. Blossoms in autumn with half-double and light pink flowers. Continued blossoming in mid-April, slightly later than (the white) 'Autumnalis'. High-class park tree or shrub.

## x subhirtella 'Dahlem'

(syn. Prunus subhirtella roseoplana)



Tree with a more or less round crown, 6 m high and 7 m wide. Leaves species-specific. Blossoms in April, very abundantly with pink, half-double flowers, 20-25 mm. Very beautiful park tree.

## x subhirtella 'Fukubana'



Generally an upright shrub with a height of 5 m, densely branched, somewhat sagging at a later age. Leaf species-specific, emerging slightly bronze-green. When top grafted, it can reach a height up to 7 m then develops a wider, dense crown. Blossoms very abundantly in April, flower buds are purplish-red, later turning dark pink, half-double, 18 mm. Tree for parks, public gardens and larger gardens in sunny, wind-sheltered locations.

## x subhirtella 'Pendula Plena Rosea'

(syn. Prunus pendula 'Yae-beni-shidare')



Japan, 1600. Introduced in Europe in 1928. An arched weeping cherry, top grafted. Has many branches suspending in arches. Blossoms very abundantly late March-early April with numerous pale pink to white flowers. Specimen tree for parks, public gardens and large private gardens.

# Prunus

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## 'The Bride' PBR



Arboretum Kalmthout, Kalmthout, Belgium, 1989. Wide, vase-shaped, half-open crown. Narrow, green, ovate leaves with a pointy top. In autumn, the foliage changes colour to orange and red-purple. Pure white flowers with pink anthers in April. Dark red fruits 1 cm in size. Requires well-drained, humus-rich soils. Garden and park tree.

## 'Trailblazer'®

(Prunus cerasifera 'Pissardii' x Prunus salicina 'Shiro')  
(syn. Prunus cerasifera 'Hollywood')



Private Garden, Oregon, USA, 1954. Tree with a big, round crown, 6-7 m high and 4-5 m wide. Large leaf, 6-10 cm, initially green, later turning bronze-coloured auburn. Blossoms in March-April, pink buds, later white single flowers, 15-20 mm. Rather big red fruits. Grows on rich, sandy soils, clay or marshy ground and even on loess. A good tree for parks and streets.

## 'Umineko'

(Prunus incisa x Prunus serrulata var. 'Speciosa')



Collingwood Ingram, UK, 1928. A hybrid with a height up to 6-8 m and 2-3 m wide. Tree with a narrow columnar habit. Blossoms very profusely after mid-April with white, single flowers, 2-3 together. The flower diameter is approximately 2.5 cm. The flowers appear simultaneously with the light green emerging leaves. Smooth, grey-brown bark, which also has ornamental value in winter. Dark green foliage, sharply serrated and oval in shape and is approximately 7 cm. Beautiful yellow-orange to red-brown autumn colouring. Few soil requirements, but prefers soils that are not too wet. Wind resistant, but does not like to be exposed to onshore wind. Ideal for avenues and street planting.

## virginiana 'Canada Red' Red chokecherry



Bailey Nurseries, St. Paul, Newport, Minnesota, USA, 1985. A red-leaved tree with green shoots. This variety is a small tree, 6-8 m high and 4-6 m wide. A beautiful oval crown which becomes rounder as it matures. Broad/elliptical leaves that emerge light green, then surprisingly turn to a dark purple-red. Close resemblance to 'Shubert'. Blossoms with small white flowers in suspending bunches and later produces small fruits (8 mm). Very hardy. A colourful park tree because of the colour contrast between young shoots and the older purple-red leaf. The red-purple small fruits are poisonous. Requires well-drained soil.

## virginiana 'Shubert' Chokecherry



Oscar H. Will & Company, Bismarck, North Dakota, USA, 1943. When top grafted, a small tree with a height of 5-8 m and an ovate, later round crown. Wide-elliptical leaf, 5-12 cm long, emerges light green, later turning to dark crimson. Small, white flowers in May, in elongated bunches. Fruits 8 mm, crimson to almost black. Colourful park tree because of the colour contrast between the fresh shoots and the older purplish-red leaves. Very hardy.



Prunus 'Umineko'



Prunus virginiana 'Canada Red'

# Prunus

fam. Rosaceae



Prunus x yedoensis



Prunus x yedoensis



Prunus x yedoensis

**x yedoensis** Yoshino cherry  
(*Prunus speciosa* x *Prunus x subhirtella*)



Rather tall tree with a height of 10-15 m and rising branches of which the ends are slightly overhanging. As a result, it has a wide, flat crown. The fresh leaf is yellowish-green. Blossoms very abundantly in April with initially pink and later white, fragrant and single flowers, 3 cm in size. Dark red to almost black fruits. Yellow autumn colouring. Beautiful park tree, also for green verges in wide avenues.

**x yedoensis 'Akebono'**  
(*Prunus speciosa* x *Prunus x subhirtella* 'Pendula')



W.B. Clarke & Co, San Jose, California, USA, 1920. When top grafted, a beautiful variety with an irregular, round spreading crown that is relatively open and oblate. Height 7 m and almost equally wide. Shiny, bright green leaf with a yellowish autumn colour. Blossoms very abundantly in mid-April, buds are purplish-pink, they open to lighter purplish-pink flowers, hanging in branched bunches. Ornamental park tree, because of its wide crown it can only be used as an avenue tree on wide, open green verges.

**x yedoensis 'Ivensii'**



Hillier Nurseries, Ampfield, Romsey, UK, 1929. Weeping variety, wide shape, often top grafted. Broad, green, ovate leaves, 6-12 cm, with a yellow autumn colour. Light pink flower buds, then pure white, fragrant flowers, 2.5 cm in size, appear. Sterile. Grows on all soils, if not too moist. Does not tolerate pavement. Use as a specimen tree.

**x yedoensis 'Melstar'**



Arboretum Kalmthout, Belgium. Selected from *Prunus x yedoensis* seeds. Develops into a narrow, vase-shaped to almost columnar-rising, 10-12 m tall tree shape, more narrow ovoid at a later age. Blossoms from late March to mid-April with single, star-shaped, light pink, 35 mm flowers in umbels, 2-4 together. Suitable as a specimen tree for public gardens and large private gardens.

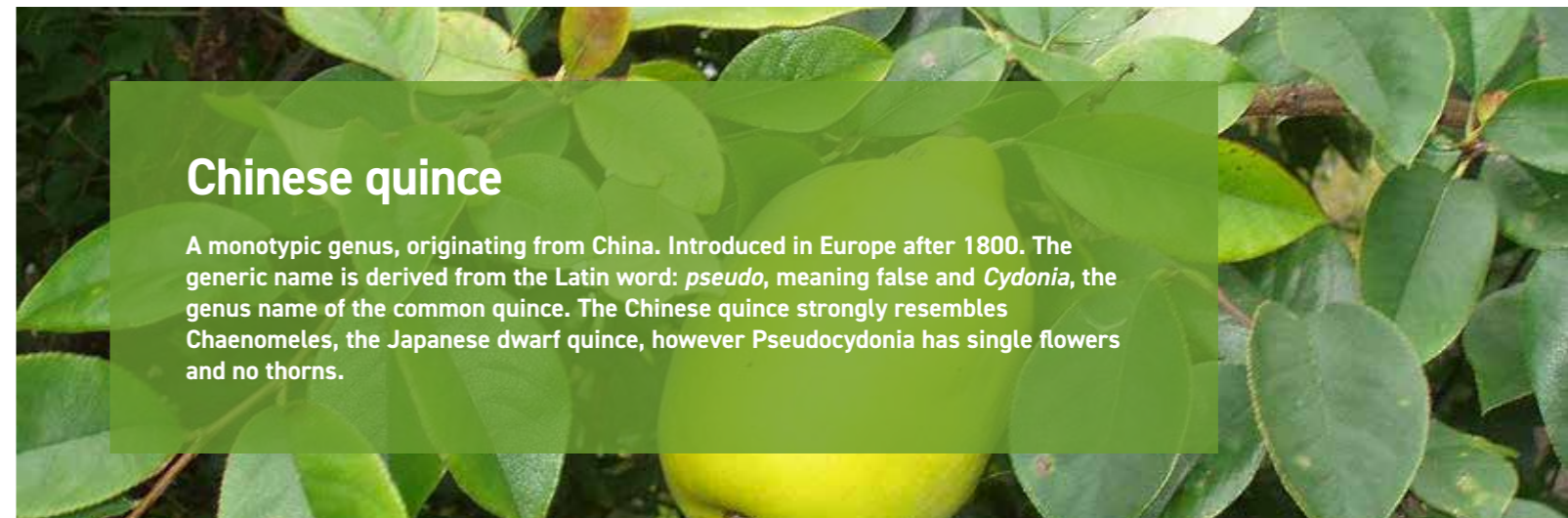
**x yedoensis 'Shidare-Yoshino'**  
(syn. *Prunus x yedoensis pendula*)



Introduced in Europe in 1916 by Ernest Henry Wilson (1876-1930). Small, American weeping variety with elegantly arching branches, often touching the ground. Height 2 m, width up to 3 m. Leaf species-specific. Blossoms early April with very light pink buds, almost white when opening, 20 mm. Specimen for small gardens, also suitable for low walled planting beds in shopping centres and pedestrian areas. Perfectly suited for growth along lattices to create arbours.

# Pseudocydonia

fam. Rosaceae



## Chinese quince

A monotypic genus, originating from China. Introduced in Europe after 1800. The generic name is derived from the Latin word: *pseudo*, meaning false and *Cydonia*, the genus name of the common quince. The Chinese quince strongly resembles *Chaenomeles*, the Japanese dwarf quince, however *Pseudocydonia* has single flowers and no thorns.

**sinensis**



Forms a narrow upright shrub or tree shape up to 18 m. Semi-evergreen. Peeling bark. Shiny green, elliptical to oval leaves, rounded towards the leaf base. Foliage is 5-8 cm long, 3-5 cm wide and slightly hairy on the underside. Yellow-red autumn colouring. Single, soft pink flowers 2.5-3 cm in size, in April-May. Edible fruits 10-15 cm in size, oval, pale to dark yellow that only ripen during really warm summers. Requires a sunny, sheltered location on well-drained, fertile soil. Wind resistant. Does not endure pavement.



Pseudocydonia sinensis



# Ptelea

fam. Rutaceae

# Pterocarya

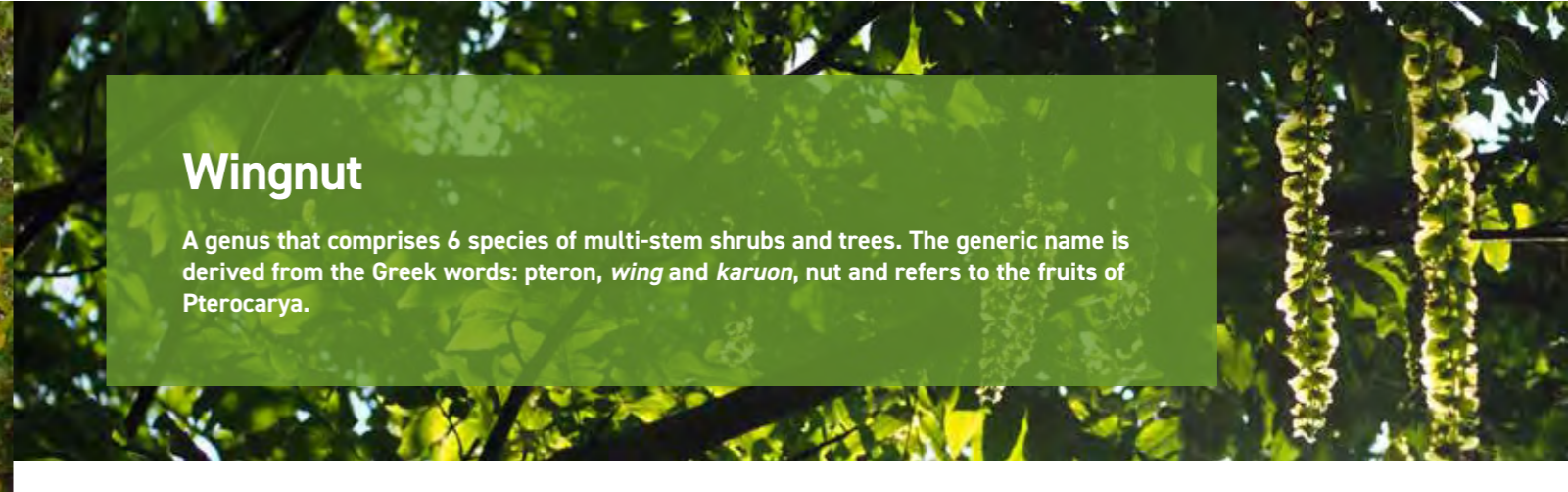
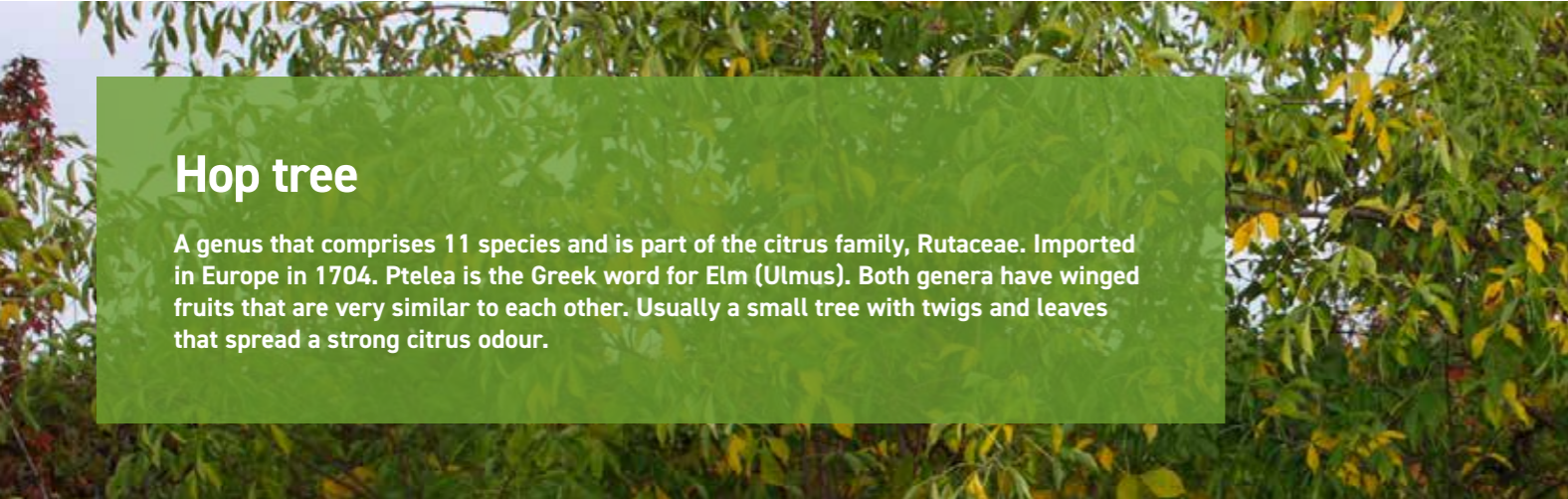
fam. Juglandaceae

## Hop tree

A genus that comprises 11 species and is part of the citrus family, Rutaceae. Imported in Europe in 1704. Ptelea is the Greek word for Elm (Ulmus). Both genera have winged fruits that are very similar to each other. Usually a small tree with twigs and leaves that spread a strong citrus odour.

## Wingnut

A genus that comprises 6 species of multi-stem shrubs and trees. The generic name is derived from the Greek words: pteron, *wing* and *karuon*, nut and refers to the fruits of Pterocarya.



Ptelea trifoliata

**trifoliata** Common hop tree, Stinking ash



Origin: Eastern part of North America. Tall shrub or a small, usually half-standard tree with a height of 5-8 m. Few branched twigs. Relatively open loose crown. Trifoliate, leathery leaf, shiny deep green. Blossoms with large bunches of yellowish-green flowers. The twigs and leaves spread a strong, aromatic odour when they are bruised or crushed. Ptelea has many oil glands. Flat, winged fruits in bunches that are more striking than the flower colour. The fruits dry beautifully and are retained on the tree a long time. Requires lots of light. Specimen tree for parks and larger gardens on loamy, sandy soils.

**fraxinifolia** Caucasian wingnut



Origin: Caucasus, Asia Minor, Northern Iran. Imported in Europa in 1782. Reasonably fast-growing tree with a height of 15-20 m. Wide-spreading and heavy crown. Deeply grooved bark. Develops lots of root suckers around the trunk, especially in moist soils. Has thick, yellowish-brown twigs and rusty brown, bare buds. Leaf odd-pinnate, fresh green, 25-45 cm long with 8-12 cm leaflets. Especially the 20-40 cm long fruit catkins with their two-winged nutlets are very decorative. Park tree for damp, fertile soils. Not suitable for coastal planting. As an avenue tree in paved surfaces that allow deep rooting. When planted in avenues, the low suspending branches need to be pruned in time.

**fraxinifolia var. dumosa**



Cultivar that resembles the species, but stays smaller. Densely branched, closed, rather regular round crown. Height 7-10 m, width 8-10 m. Leaf only 25-30 cm long, with less and shorter leaflets, 4-7 cm in size. Avenue and street tree for wider profiles, as well as a specimen tree for squares. Not suitable for coastal planting.

**fraxinifolia 'Heereplein'**



Dutch selection with a more regular growth than the species. Grows wider than high. The dark grey trunk is grooved. Avenue and street tree for wider profiles, or as specimen and square tree. Not suitable for coastal planting. Grows well on moist soils, resistant to flooding.

**x rehderiana 'Fern Leaf'**



Boomkwekerijen Brands, the Netherlands, 1989. Tree with a dense, wide ovate crown, 15-20 m high. Large, dark green, odd-pinnate, 20-50 cm leaves. Each leaf segment is very deeply incised and has a bronze-coloured leaf edge and gives the leaf its typical fern-like appearance. Flowers in May with 20 cm long, green, female catkins and 8 cm long male catkins. Then winged nuts appear. Grows on all soils, does not tolerate pavement. Does not develop root suckers. Good wind and frost resistance. Garden and park tree.



Pterocarya fraxinifolia



Pterocarya fraxinifolia

# Pterocarya

fam. Juglandaceae



Pterocarya stenoptera

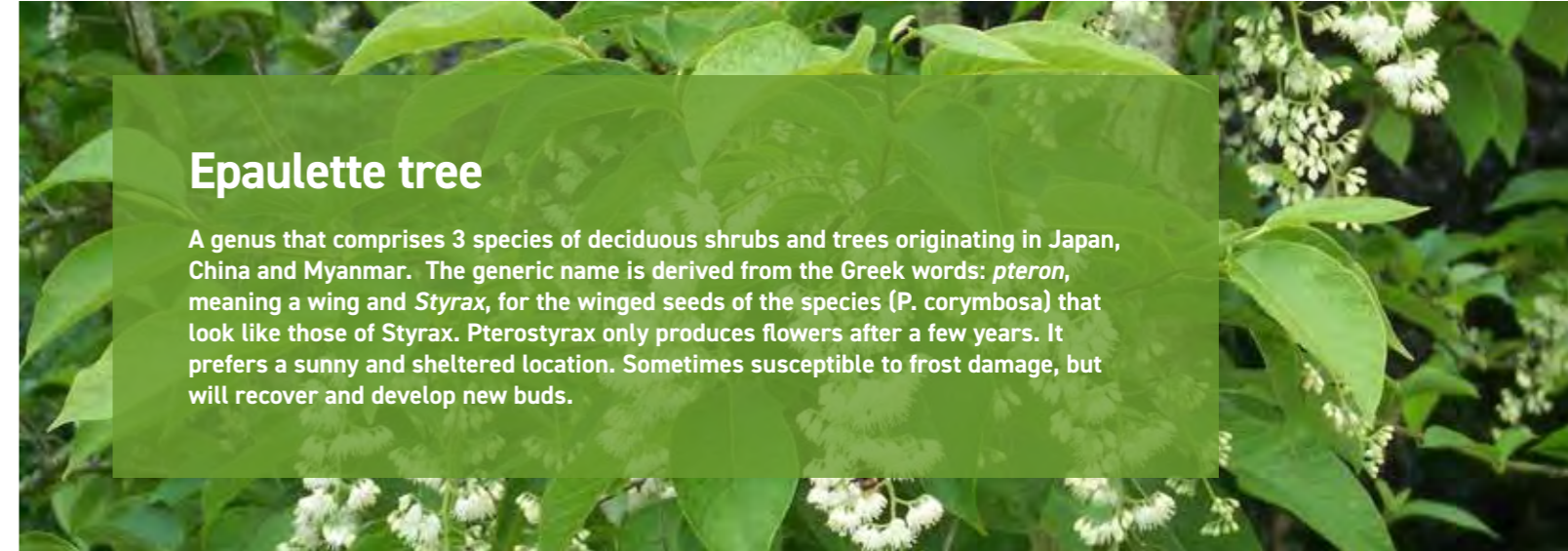
## stenoptera Chinese wingnut



Indigenous to China. Imported in Europe in 1860. In our climate it is a medium-high, wide- and fast-growing tree, with a height up to 15 m. Similar in appearance to Pterocarya fraxinifolia however, the leaf rachis of stenoptera is winged whereas the rachis of fraxinifolia is cylindrical. Slightly blackish-brown twigs with brownish-yellow lenticels in winter. Dark green, odd-pinnate leaf, however sometimes the terminal leaflet is absent. Fruit catkins only 20-30 cm long. Not suitable for coastal planting. Park tree.

# Pterostyrax

fam. Styracaceae



## Epaulette tree

A genus that comprises 3 species of deciduous shrubs and trees originating in Japan, China and Myanmar. The generic name is derived from the Greek words: *pteron*, meaning a wing and *Styrax*, for the winged seeds of the species (*P. corymbosa*) that look like those of *Styrax*. Pterostyrax only produces flowers after a few years. It prefers a sunny and sheltered location. Sometimes susceptible to frost damage, but will recover and develop new buds.

## corymbosa Little epaulette tree



Origin: Japan and Eastern China. Final height 15 m. The word 'little' does not refer to the tree, but to its small-sized fruits. This species occurs both in Japan as China. It has bright green, pointed, oval leaves 15 x 10 cm that turn yellow in autumn. Emerging leaves are slightly pilose on both sides, later on turning dark green with a smooth top. Grey-brown trunk. 8-10 cm hanging clusters of small, fragrant, white flowers appear in June-July, followed by drop-shaped, pilose, five-ribbed stone fruits. Grows on all soil types.

## hispida



Small tree or large shrub. Height 5-10 m. Leaves 6-20 cm, light green. Flowers abundantly with white, suspending panicles (10-20 cm long). Flowering period: June-July. Very fragrant. After flowering, the tree develops 1 cm large green fruits. The fruits are felty and hairy. A very important difference between Pterostyrax hispida and Pterostyrax corymbosa is the number of wings or ribs on the fruits. Pterostyrax corymbosa has fruits with 5 narrow wings, while the Pterostyrax hispida has no wings but has 10 narrow ribs.



Pterostyrax corymbosa

Pterostyrax hispida



## Pear

A species that comprises 30 species. The common European pear, *Pyrus communis*, is a fruit tree first and foremost. The wild species, from which the cultivated pears originate, is indigenous to Southern Europe, but the species also occurs in more northern areas. Some ornamental pear trees descend from Asian/ Chinese species. *Pyrus calleryana* was discovered in China in 1858 by the French missionary Joseph-Marie Callery (1810-1862). The pear is the largest and longest living of all fruit trees. Far more than the Apple, a pear has remained a primitive fruit tree, with a beautiful characteristic shape at a later age. The trees described below are all ornamental pears.



*Pyrus calleryana* 'Aristocrat'

### *betulifolia*



Origin: Northern China. A narrow pear tree with a betula-like, serrated, light green leaf. Leaves rustle gracefully in the wind. White flowers in spring followed by pears, hanging in clusters of 3. Pears are retained on the tree for a very long time. Very fast grower, height 5-7 m. Frequently visited by bees. Beautiful tree for parks and gardens.

### *calleryana* 'Aristocrat'®



William Straw, Kentucky, USA, 1969. Introduced by Cole Nursery, Circleville, Ohio, USA, 1974. Fast grower with a pyramidal crown and a height up to 13 m and horizontal branches. The crown widens, but is still more upright than the crown of 'Bradford'. Blossoms abundantly white in umbels. Brown fruits 5-6 mm, sparse. Shiny, dark green foliage with long petioles and beautiful autumn colouring to red, orangey-red and purple. Beautiful tree for parks and gardens.

### *calleryana* 'Autumn Blaze'



Mel Westwood, Oregon State University, Westwood, Oregon, 1969. Cultivar with a pyramidal upright crown. Height 9-10 m with well-spreading branches, moderately wide. The fresh leaf has a reddish hue, later turning to shiny dark green. Blossoms with white flower bunches. Brown fruits 5-6 mm, sparse. Typically, this tree drops its bright red coloured leaves early in autumn. Resistant to insects and fire blight, hardy. Specimen tree for public and private gardens, or as a moderately tall street tree on green verges. Susceptible to frost damage in Europe.

### *calleryana* 'Bradford'®



The species was brought to Maryland, USA in 1918 as rootstock for cultivated pears. A non-spiny seedling was selected and introduced in 1963 by the USDA. Tree with a rather wide, ovoid crown, 12 m high. Shiny, green leaf with a slightly purplish autumn colour. Blossoms with numerous white flowers before the leaves emerge. Inconspicuous fruits 5-6 mm. Park tree for sheltered locations. In the Netherlands, less hardy than 'Chanticleer'.

### *calleryana* 'Capital'



National Arboretum, Washington D.C., USA, 1969. Develops a columnar, rising, compact crown. Height 8-10 m and 3 m wide. Shiny, intensely green foliage with a purple-red autumn colour. Blossoms in white bunches. Brown fruits 5-6 mm, sparse. Resistant to fire blight and hardy. Application as 'Chanticleer' and 'Red Spire', especially in narrow street profiles.

### *calleryana* 'Chanticleer'®

(syn. *Pyrus calleryana* 'Glen's Form' / 'Cleveland Select' / Stone Hill')



Scanlon & Associates, Olmsted Falls, Ohio, USA, 1956. Named after the cock Chanticleer, a character from the Dutch poem Van den vos Reynaerde. Height 8-12 m, narrow ovoid to conical crown. Broad elliptical and shiny, healthy green leaves. Striking yellow, orange and red autumn colours. Old bark is rough, grey-brown and peels off in small plates. Blossoms from March to mid-April, white, approximately 2 cm. Sometimes small, brown, inedible fruits appear after flowering. Not sensitive to fire blight and almost never suffers from infestation by insects. Prefers fertile, loamy soil. Tolerates paving very well. Highly resistant to heat, drought and strong winds. Very hardy. Beloved street tree, also for narrow streets and certainly suitable as a specimen in gardens or for use as an espalier.

### *calleryana* 'Early Red'



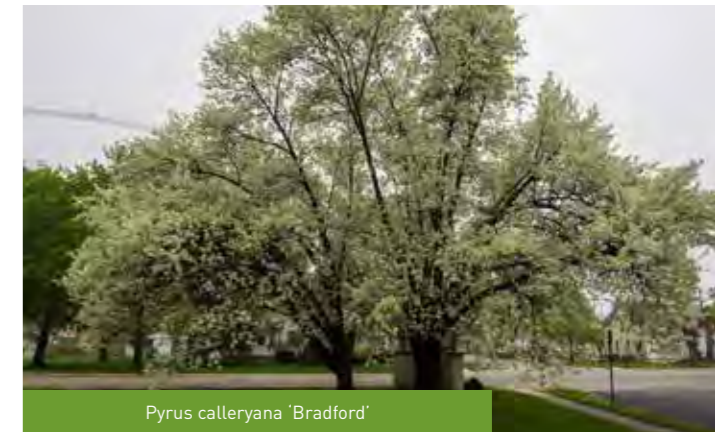
Bob Simpson (1936-1995), Simpson Nursery Company, Vincennes, Indiana, USA. A selection from seedlings of 'Bradford'. Has a more compact habit and turns colour earlier in autumn. Application similar to *Pyrus calleryana* 'Bradford'. Beautiful park tree.

### *calleryana* 'New Bradford'®

(syn. *Pyrus calleryana* 'Holmford')



Holmford Nurseries, USA. An improved selection of 'Bradford', habit resembles 'Bradford' but it is even more compact and has a higher wind resistance. Height 10 m, width 8 m. Wide round variety. Blossoms abundantly with white blossoms in spring. Healthy, shiny green leaf with beautiful autumn colouring from yellow to red. Park tree or tree for wide street profiles.



*Pyrus calleryana* 'Bradford'



*Pyrus calleryana* 'Capital'



*Pyrus calleryana* 'Chanticleer'



*Pyrus calleryana* 'Chanticleer'



*Pyrus calleryana* 'Chanticleer'



*Pyrus calleryana* 'Chanticleer'



*Pyrus communis* 'Beech Hill'

### *calleryana* 'Redspire'



Princeton Nurseries, Kingston, New Jersey, USA, 1975. Narrow, compact rising, dense crown. Remains slightly narrower compared to 'Chanticleer'. Height 8-12 m. Blossoms abundantly with large white flower umbels. Sporadically bears fruits. Leaves shiny green with beautiful, red to purple autumn colours. In the Netherlands, more hardy than 'Bradford'. Good street tree. Endures pavement and air pollution very well.

### *calleryana* 'Trinity'



J. Frank Schmidt & Son Co., Boring, Oregon, USA, 1980. Imported by Boomkwekerij Udenhout. Narrow, ovoid crown. Leaves large and shiny green with an orangey-red autumn colour. White blossoms, dark brown fruits, 1 cm in size. Good street tree.

### *calleryana* 'Valzam'

(syn. *Pyrus calleryana* 'Valiant')



Lake County Nursery, Perry, Ohio, USA, 1975. Shorter in size and with a compact habitus. Height 7-9 m. Width 4-6 m. Upright, pyramidal tree with attractive hunter-green leaf. Blossoms abundantly with white blossoms; small sparse brown fruits. Autumn colouring starts early and leaves turn to purplish-red. Excellent street tree.

### *calleryana* 'Whitehouse'



US National Arboretum, Washington D.C., USA, 1977. Named after botanist William E. Whitehouse (1893-1982), with the nickname 'The Pistachio Man'. Selection from seedlings of 'Bradford'. Grows faster in the juvenile stage. Blossoms five days later and has deep green shiny foliage. Application similar to 'Bradford' on sheltered, sunny planting locations. In the Netherlands, susceptible to frost damage.

### *x canescens*

(*Pyrus nivalis* x *Pyrus salicifolia*)



Rising, moderately tall tree with greyish-white, lancet-shaped leaves with a serrated leaf margin. Height 8 m. Fresh foliage is shiny green on top, very white on the underside. Blossoms with bunches of snow-white flowers. Small, round, pale green fruits. Specimen tree for parks and gardens.

### *communis* 'Beech Hill'



George Rowland Jackman (1902-1976), Jackman Nursery, Woking, UK. Tree with a narrow pyramidal crown, 9-12 m high. Bright green foliage. Blossoms profusely in April with bright white flowers. Large, hard, pear-shaped 3-5 cm big fruits. Very beautiful orange-red autumn colour. Park tree, but also suitable for narrow streets on green verges or in pavement.

### *communis* subsp. *caucasica*

(syn. *Pyrus caucasica*)



Tree with an ovoid crown. Height 15-20 m. Shiny, dark green leaf. Blossoms white in May. Pear-shaped, 4-10 cm big fruits in autumn. Specimen tree for parks. Can also be used as an avenue tree on green verges and in pavement.

### *elaeagnifolia* *kotschyana* Silver pear tree

(syn. *Pyrus elaeagnifolia* 'Silver Sails', *Pyrus elaeagnifolia* 'White Sails')



In the wild existing from Albany to Ukraine. Its leaves closely resemble *Elaeagnus*. 15 m high thornless species. Leaves 6-8 cm long and 2-4 cm wide and silver-grey pilose on both sides. Blossoms white in April-May with single flowers. Small, yellow-green, round to pear-shaped, hard fruits. This silver pear tree grows well on most soils, if not too wet.

### *nivalis* Snow pear



Origin: Central and Southeastern Europe. A small tree in our region, 6-8 m high, with a wide, loose crown. Twigs whitish felty. Elliptical, greyish felty leaf. Blossoms late April in felty, pilose umbels with 2-3 cm flowers. Small, yellowish-green fruits. Beautiful park tree with a striking habit.

### *nivalis* 'Catalia'



A cultivar of *Pyrus nivalis* imported from Hungary by Boomkwekerij Udenhout. Shiny, grey leaves. Blossoms species-specific with white flowers. Smaller fruits than *Pyrus nivalis*. Application also species-specific, beautiful park tree.

### *regelii*



Origin: Eastern Turkestan. Small tree with a height up to 10 m. Young twigs have white velvety hair and stay this way into the winter. The leaves are variable in shape, with two extreme leaf types: either ovate with a rounded leaf base, pointed apex and coarsely serrated, or deeply incised up to the midrib with 3-7 narrow, linear lobes, which are finely toothed. There are several intermediate shapes. Blossoms white with many little, 18-24 mm, flowers in small bunches. The small fruits are regularly pear-shaped. A rare wild pear for parks and gardens.

### *salicifolia* 'Pendula'



Wide tree shape, 4-6 m high, with wide, spreading to suspending branches and thin, grey pilose suspending twigs, which creates more or less a weeping variety. Lancet-shaped, grey felty leaves. Blossoms simultaneously with the emerging leaf, with cream-white flowers in umbels. Park tree.

### *serrulata*



Indigenous to Central China. Small, rising tree with 5-11 cm long leaves. White flowers, 25 mm. Almost round fruits, brown-coloured, 15 mm long. Park tree and street tree on green verges or in pavement. Not cultivated.



*Pyrus nivalis*



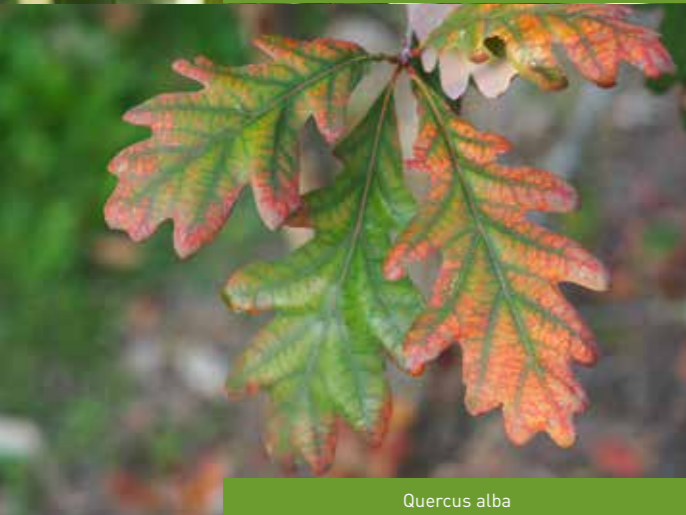
*Pyrus salicifolia* 'Pendula'

## Oak

A genus that comprises around 450 species. Approximately 60 to 70 species of this major genus are being cultivated into tall to medium-tall trees and occasionally into small trees and shrub-like varieties. Most species which have become rare are grown in specialist Quercus nurseries. Beside these nurseries, only a limited number of species, some cultivars and a few selections are cultivated for trade and practical use. The range in our region mostly consists of deciduous trees. Under ideal growth conditions and in the right climate, some oaks can reach ages of up to 1,000 years.



Quercus acutissima



Quercus alba

### acutissima Sawtooth oak (syn. Quercus serrata)



Origin: East Asia: China, Japan and Korea. Imported in Europe in 1833. Moderately tall tree, in cultivation 6-12 (20) m high, with a broad ovoid crown and a slender trunk. Leaves highly variable in size, 10-20 cm long and 2.5 to 5 cm wide, usually elongated to lanceolate, sometimes narrow ovoid, with a pointy serrated (needle-like) leaf margin. Leaf slightly resembles the leaf of Castanea sativa, shiny green. Approximately 2 cm long acorns, brown and half-enclosed. Red autumn colouring. Grows on all soil types. Its hard wood is used for constructions and tools and can serve as bed-log for shiitake mushroom cultivation. Rare, very beautiful park tree.

### alba White oak



Origin: Western USA. Imported in Europe in 1724. A tall tree, in cultivation up to 20-30 m high. Pyramidal in its juvenile stage, later wide spreading. Width 15-25 m. Oblong, ovate green leaves with 7-10 round finger-shaped lobes. Turns auburn in autumn. Brown leaf sometimes retained on the tree in winter. White to ash-grey bark. The older the tree, the deeper the grooves in the bark, almost block-shaped. Beautiful park tree.

### alba 'Wieting'



M. Wieting, Westerstede-Giesselhorst, Germany. Species-specific growth. Very large leaves, up to 20 cm in size. Dark pink to red autumn colour. Leaves are retained on the tree in a dried state for a long time. Mildew resistant. Suitable for larger gardens, public gardens and parks.

### bicolor Swamp white oak



Origin: Northwest USA. Imported in Europe in 1800. A distinct oak of which the botanical name is based on the different colours that are found on the underside and top of the leaf. The leaf is 12-18 cm long and 7-11 cm wide. Approximately two-thirds of the length has shallow lobes. The top is shiny green, the underside striking grey-green to grey-white and softly haired. In autumn, the foliage turns yellow-brown, sometimes orange-red. Final height up to 20 m, but grows slowly. Acorns are enclosed to almost a third. Young shoots are red-brown, slightly hairy, later bald and smooth and have many lenticels. Once established, the grey-brown scaly bark peels off in elongated plates. Naturally, it grows in damp places such as riverbanks and near swamps. Prefers locations with a normal to moderately dry soil near running water. A beautiful park tree that stands out.

### x bimundorum 'Crimson Spire'®

(syn. Quercus x bimundorum 'Crimschmidt')



J. Frank Schmidt & Son Co., Boring, Oregon, USA, 1994. Bi Mundo, the best of 2 worlds: hybrid of the European Quercus robur with the American Quercus alba. Forms a strong upright tree. Height 12-14 m, width 3-4 m. Simple, obovate, alternate leaves with 2-5 pairs of round lobes, 9-15 cm long and 5-9 cm wide. Dark green leaf, which changes colour from top to bottom, purple-red to rust brown in autumn. Mildew resistant. For small gardens and narrow streets.

### buckleyi Texas red oak, Buckley oak (syn. Quercus texana)



Southcentral Texas to northcentral Oklahoma, USA. Named after Samuel B. Buckley (1809-1884), botanist and geologist for the state of Texas. Small- to medium-sized tree, 12-15 m. Dark grey, smooth bark, furrowed into ridges on lower trunk and older branches. Leaves alternate, elliptical or obovate, 6-12 cm long and 5-10 cm wide, deeply divided into 5-9 lobes, which are usually broadest towards the top and end in several bristle-tipped teeth. Foliage is shiny dark green on top, pale green with tufts of hairs in vein axils on the underside. In autumn, it changes colour from red to brown. In April-May, white-green flowers. Acorns mature in the second year, 12-18 mm. Naturally grows on calcareous soils. Drought and heat resistant. Garden and park tree.

### x bushii 'Seattle Trident'

(Quercus marilandica x Quercus velutina)



Arnold Arboretum, Boston, Massachusetts, USA, 1937. The first plant was raised at Washington Park Arboretum, Seattle. Ovoid to round crown, 10-12 m wide. Shiny dark green, 3-lobed leaf, of which the middle lobe is the largest. Beautiful bronze autumn colouring. Foliage is retained on the tree in a dried state for a long time. Requires nutritious, moist and well-drained soils. Good wind resistance. For public gardens and parks.



Quercus bicolor



Quercus bicolor



Quercus buckleyi



Quercus castaneifolia



Quercus cerris 'Marvellous'



Quercus cerris 'Marvellous'

**castaneifolia** Chestnut-leaved oak



Indigenous to southern Russia and Iran. Imported in Europe in 1858. Grows into a large tree shape. Height 25-30 m, width 20-25 m. The leaves are very similar to those of *Castanea sativa*, but are slightly narrower and have longer petioles and a yellow vein. Turns from yellow to rust brown in autumn. Leaves are retained on the tree in a dried state for a long time in winter. Flowers in May, male hanging catkins 7-10 cm long, the small female flowers are in the leaf axils. 2/3 of the ovoid 2-3 cm acorns are in cupules, which have long pointy scales that bend back at the top, very similar to *Quercus cerris*. Has a dark grey bark that has shallow grooves. Highly wind resistant. Mildew resistant. Can withstand air pollution and road salt. For wider profiles or as a specimen.

**castaneifolia 'Greenspire'**



Hillier Nurseries, Ampfield, UK, 1948. Height 20-25 m, width 15-18 m. Grows more upright and has a crown that is more closed than the species. For the rest, the same characteristics.

**cerris** Turkey oak



Indigenous to Central and Southeastern Europe, Asia Minor. Imported in Europe in 1735. A fast-growing oak that can grow up to heights of 20-25 m. Has a straight trunk with shallow grooves in the dark bark. Wide conical crown. The buds are surrounded by bristles, whilst the acorn cupule is also covered in 'mossy' scales. Healthy tree, not susceptible to mildew. Relatively low soil requirements; dry, calcareous and slightly damp soils. Endures pavement and is wind resistant. Leaves 6-12 cm long, variable in shape, sometimes deeply lobed to sharply serrated, dark green. Endures onshore wind well. Beautiful park tree, also a very good avenue and street tree for wide profiles.

**cerris 'Marvellous'**



Nursery Mari van Els, Landhorst, the Netherlands, 1998. Boomkwekerij Udenhout, license holder since 2002. Origin: Southwest-Asia and southern and middle parts of Europe. Height 15-20 m. Narrow in its juvenile stage, more spreading when maturing. Beautiful shape, thanks to the broad, pyramidal crown with central leader. Retains its leaves until the first frost and sometimes even longer. Leaves emerge very light green, later turning shiny dark green on top and grey-green on the underside. The foliage varies strongly in size and shape; 6-12 cm in size, sometimes deeply lobed to sharply serrated. Highly wind resistant, hardy and almost never suffers from mildew. A healthy tree, free from pests and diseases. Relatively low soil requirements, application species-specific. Is often planted for its ornamental value and shadow offering quality. A beautiful, semi-evergreen park tree and excellent street and avenue tree for wider profiles.

**coccifera** Kermes oak, Grain oak



Evergreen oak from the Mediterranean region. Shrub or tree shape. Height 5-6 m, width 2-3 m, the shape is quite variable, round, oval, upright. Simple, ovoid to oval leaves, dark green on top, lighter in colour on the underside, with 5 serrations on each side. Very similar to holly. Dark grey, smooth trunk. Male catkins. Acorns 1-2.5 cm in size. Grows on all soil types, does not tolerate high groundwater levels. Use as a specimen.

**coccinea** Scarlet oak



Origin: Central and Eastern parts of the USA. Imported in Europe in 1691. Tree with a regular and loose crown, up to 25 m high. Yellowish-red twigs. Pinnately lobed, wide leaf with a roughly serrated margin, 8-15 cm long, shiny deep green. Scarlet red autumn colour. Beautiful park and avenue tree for damp, non-calcareous soils.

**coccinea 'Splendens'**



Knap Hill Nursery, Woking, UK, 1900. Tree with a wide pyramidal habit. Height 20-25 m. Larger leaf than is common to the species, with intense scarlet red autumn colouring. Brown leaves are retained on the tree deep into winter. Difficult to propagate. Park and avenue tree.

**'Columna'**

(syn. *Quercus petraea* 'Columna', *Quercus sessiliflora* 'Columna')



Herman Albrecht Hesse (1852-1937), Weener, Germany, 1935. Columnar growth with spreading branches. Leaf oblong, rather narrow, with shallow and irregular lobes. Leaf colour somewhat greyish-green. Hardly susceptible to mildew. Slower growth than *Quercus robur* 'Fastigiata' and less tall, 10-14 m. Cultivated in limited quantities.

**dentata** Japanese emperor oak



Origin: Korea, Japan, China. Imported in Europe in 1830. Striking appearance because of its large leaves. Foliage up to 25-30 cm long and 15 cm wide. Grows relatively slow, round crown. Height 15 m. The name for this species is a strange choice, because the tree does not have serrated (dentate) leaves, but lobed leaves, similar to *Quercus robur*. Beautiful specimen tree, also suitable for gardens.

**dentata 'Carl Ferris Miller'**



Robert (1921-1995) and Jelena de Belder (1925-2003), Arboretum Kalmthout, Belgium, 1976 and named after Carl Ferris Miller (1921-2002), a South Korean Botanist. Oval to round half-open, irregular crown, up to 15 m high. Dark green, matte, obovate leaves with shallow lobes, 15-25 cm in size. Yellow autumn colouring, dried leaves are retained on the tree for a long time. Yellow catkins in May. Ovoid to round acorns in bundles in a cupule with somewhat protruding scales. Grows on all soil types, including moist soils. Quite hardy, road salt resistant.

**dentata 'Sir Harold Hillier'**



Sir Harold Hillier (1905-1985) Arboretum and Gardens, Ampfield, UK. Growth and habitus similar to *Quercus dentata* 'Carl Ferris Miller'. This cultivar has a yellow to orange-red autumn colour. Leaves are retained on the tree in a dried state for a long time.



Quercus coccinea



Quercus dentata 'Carl Ferris Miller'



Quercus frainetto



Quercus frainetto



Quercus x hispanica 'Fullhamensis'

**ellipsoidalis** Northern pin oak



A tree from the Northeast of the USA. Height 15-18 m. Closely resembles *Quercus palustris*, which explains its common name. Wide ovate to round crown. Simple leaf with sharp lobes. Beautiful autumn colouring ranging from orangey-red to reddish-brown. Park tree or for wide avenues.

**frainetto** Hungarian oak

(syn. *Quercus conferta*)



Origin: Southeastern Europe (Balkans). Since 1800 making its appearance in the Netherlands. Fast-growing tall tree, with a height of 20-25 m, with a short, robust trunk and inclining branches. The crown is wide ovoid and rather regular. Slightly more open than *Quercus robur*. Large leaf, 10-20 cm, regularly pinnately lobed, matte, shiny dark green on top. Attractive park tree and very good avenue or street tree on damp soils. As an avenue tree in urban areas, often shows better growth than *Quercus robur*. Very wind resistant.

**frainetto 'Trump'**



Naktuinbouw-selection from the Hungarian Oak, Ede, the Netherlands, 1979. Named after the street (Trompstraat) where this cultivar was selected from the mother tree. Develops a closed, ovoid crown, rather straight rising with branches growing at an angle of 45°. Leaves species-specific. Ideal for avenue and street planting, produces a uniformly growing line of trees.

**x hispanica** Spanish oak

(*Quercus cerris* x *Quercus suber*)



Jean-Baptiste de Lamarck (1744-1829) described the first natural crosses which occurred in Spain, 1780. A half to fully leaf-retaining hybrid of the hardy Turkey oak and the less hardy, leaf-retaining Cork oak from Southern Europe. Occurs in both tree and shrub shape. Height 10-15 m. Leaf is leathery, shiny green, greyish-green on the underside.

**x hispanica 'Ambrozyana'**



Josef Misak & Istvan Ambrozy-Miggazzi, Arboretum of Count Ambrozy-Miggazzi, Mlynany, Slovakia, 1909. Round, half-open crown. Evergreen. Small leaves, rather thick, smooth, dark green on top. Inconspicuous yellow flowers in May. Bears little or no fruits. Thrives on all well-drained soils. Road salt resistant, but does not tolerate pavement. Very hardy and wind resistant. Garden and park tree.

**x hispanica 'Fullhamensis'** Fulham oak



Nursery of Whitley and Osborne, Fullham, London, UK, 1760. Evergreen upright tree. Height 12-14 m, width 5-6 m. Ovoid leaf. Has a beautiful cork trunk. The young twigs are felty and hairy. Leaves are 8-10 cm long and 4-5 cm wide, shiny dark green on top, grey-green on the underside. Acorns 3-4 cm in size, half-enclosed in small cupules that are set with short, narrow, grey, hairy scales that are bent back at the end. Good wind resistance.

**x hispanica 'Lucombeana'**



William Lucombe (1720-1785), Exeter, UK, 1763. William Lucombe chopped down and planked the mother tree, intending to have his coffin made from the wood. Lucombe stored the planks beneath his bed, but when he passed away at 102 years old, the timber was rotten. Another batch had to be sourced from one of his trees. Forms a rather, dense, spherical crown. Evergreen. The green foliage emerges bright green, with a white-grey underside, leathery feel and serrated leaf margin. Inconspicuous flowering in May with yellow flowers. Bears little or no fruits. Grows on all well-drained soils. Road salt resistant, but does not tolerate pavement. Very hardy and wind resistant. Garden and park tree.

**x hispanica 'Wageningen'**



Naktuinbouw-selection, Wageningen, the Netherlands, 1979. (Semi)-evergreen, highly dependent on location and climate. Flattened spherical crown. Height 15-20 m, width 14-18 m. The young twigs are felty and hairy. Leaves are 8-10 cm long and 4-5 cm wide, shiny dark green on top, grey-green on the underside. Acorns 3-4 cm in size, half-enclosed in small cupules that are set with short, narrow, grey, hairy scales that are bent back at the end. Prefers calcareous soils.

**x ilex** Holm oak



Evergreen shrub or tree. In its indigenous environment, the Mediterranean, it can reach heights up to 20 m. Wide, round densely branched crown on a thick robust trunk. Grey smooth bark. Leathery, elliptical or lancet-shaped, sharply serrated leaf. Leaf shiny green with a grey and woolly pilose underside. To be planted in sheltered locations.

**imbricaria** Shingle oak



Origin: Eastern North America. Imported in Europe in 1766. Tall tree with heights up to 20-25 m. Initial growth rather pyramidal, later the crown widens to almost spherical. Generally, it has a relatively straight trunk. Elliptical to lancet-shaped leaf, 8-16 cm long, with a more or less wavy leaf margin. Shiny, dark green with an auburn midrib. Very beautiful and strong park tree.

**libani** Lebanon oak



Indigenous to Asia Minor. Imported in Europe in 1855. A deciduous oak with a rising growth, 8-10 m high. The young twigs are angular and covered with a woolly down. Leaf oblong lancet-shaped, shiny deep green. Use as a park tree.

**'Macon'**

(*Quercus macranthera* x *Quercus frainetto*)



Arboretum Trompenburg, Rotterdam, the Netherlands, 1961. Robust tree, in its juvenile stage narrow conical, with upward branches, developing a wider conical crown later. Height 10-15 m. Leaves resemble the leaves of *Quercus frainetto*, but they are more reversed ovoid. Relatively long acorns. Beautiful park tree, also an avenue tree in urban areas. Soil requirements similar to those for *Quercus robur* and *frainetto*.



Quercus x ilex



Quercus x ilex



Quercus imbricaria



Quercus macrocarpa



Quercus macrocarpa



Quercus palustris

**macranthera** Persian oak



Indigenous to the Caucasus up to North Iran. Imported in Europe in 1873. Very ornamental park tree with a very wide, round crown and a height up to 20 m. The matte, dark green, large leaf resembles that of Quercus frainetto, but it is bigger, 15-18 cm, and less deeply lobed. Dull dark green. Rather slow grower. Suitable for drier soils.

**macrocarpa** Bur oak



Origin: Eastern USA and Canada. Imported in Europe in 1811. A medium-sized, deciduous tree. Grows to heights up to 15 m. Bark greyish-brown and scaly. The leaf resembles Quercus bicolor leaf, but is twice as big. Leaf dark green, thick greyish-green on the underside. Almost sitting, ovate acorns, up to 3 cm long. Perfect park tree.

**'Mauri'**

(Quercus rubra x Quercus palustris)



Vivai Francesco Mauri, Italy, 1962. Narrow, pyramidal crown, height 20-25 m. Long, narrow, green, deeply lobed leaves, 10-16 cm. In May, golden male catkins appear. Cylindrical-shaped acorns, 1.5-2 cm. No specific soil requirements. Autumn colouring similar to Quercus palustris. Use as park tree and avenue tree for wider profiles.

**myrsinifolia** Bamboo leaf oak



Evergreen oak. Large shrub or small tree. Height up to 6 m. Smooth green leaves. Variable in shape, lancet-shaped to elliptical, 6-12 cm long and 2-4 cm wide. Fresh leaves are reddish, light green on the underside. As a specimen tree/ shrub in parks and gardens.

**nigra** Water oak



South-East USA. Height 20-25 m with a round crown. Initially a smooth, brown trunk that later becomes more brownish-black and chequered. Shiny, bluish-green leaves with a leathery appearance. 10-15 cm long and 1.5-6 cm wide, extremely variable in shape. Smooth-edged to 3-5 lobed leaf margin. Yellow autumn colouring. Golden-yellow male catkins in May and small acorns that ripen the same year. Grows on all soils, including wet soil types. Does not prefer a location in full shadow. Semi-evergreen specimen for parks and public gardens.

**palustris** Swamp oak, Pin oak



Origin: Northeastern part of the USA. Imported in Europe in 1770. Tree with a height up to 20 m, with a strikingly straight main trunk and a bark with shallow furrows, sometimes almost smooth. Branches almost horizontally spreading with many short side branches. The crown is wide conical. Pinnately lobed leaf with a roughly serrated leaf margin, 8-12 cm long. Striking red autumn colour. In its juvenile stage, the leader often grows crooked to almost horizontal: if it does, do not prune or tie up, it will grow upwards again by itself. By nature, it grows on damp soils, but as a park, avenue and street tree in our areas it also grows on drier sandy soils. Also endures paved surfaces.

**palustris 'Green Dwarf'**



W. de Vroom, Gemonde, the Netherlands, 1977. Top grafted and develops a spherical crown. Height 6 m (depending on the grafting height). Very slow-growing. The leaf is lobed to around halfway along the leaf blade with a roughly serrated leaf margin, 8-10 cm long. Shiny dark green on top, yellow-green on the underside. Turns from red to bronze-red, later brown. For small gardens and narrower streets in green verges. Wind sensitive, resistant to road salt.

**palustris 'Green Pillar'®**

(syn. Quercus palustris 'Pringreen')



Princeton Nurseries, Kingston, New York, USA. Introduced in Europe by Boomkwekerij Udenhout. This variety remains, in contrast to the species, very narrow. It grows very uniformly and its branches do not sag. Eventually this columnar tree can get 3 m wide and 12-18 m high. A fast grower that can easily reach 300 years of age in the right location. Dark green, glossy leaves that turn deep red in autumn, ideal to add a colour accent to the public space. Resistant to air pollution. Grows best on moist, well-drained, slightly acidic soil, but does not tolerate clay soils. A healthy, ornamental tree, which is extremely suitable as an avenue tree, especially in narrow streets due to its very slender habit. Amply planted in America and has proven itself as a very good, columnar street tree.

**palustris 'Helmond's Red Globe'**

(syn. Quercus palustris 'Helmond')



Helmond, the Netherlands, 2005. Selected from a row of Quercus palustris trees in the city Helmond because of its striking habit. In its juvenile stage, it is substantially narrower than is common to the species. Later wider ovoid. Beautiful autumn colouring. A real addition for avenue and street planting.

**petraea** Winter oak, Sessile oak

(syn. Quercus sessiliflora)



Originally indigenous to large parts of Europe, including the Netherlands. Height up to 25 m. Strongly resembles Quercus robur. However, it generally has a straighter main trunk and the branches are more inclining. As a result, it has a more regular crown. Leaf more regularly lobed with a yellowish midrib and petiole (10-20 mm). The buds are pointier and longer, especially the terminal centre bud. Buds two weeks later than Quercus robur, and retains its leaf longer. The acorns are sitting, almost stalkless. Slightly less demanding soil requirements than Quercus robur, slightly drier soils if not too poor. Tolerates acidic soils (pH 3-4), but does not endure flooding in riverbanks. For roadside and avenue planting in the countryside.

**petraea 'Eastcolumn'**



Arboretum Trompenburg, Rotterdam, the Netherlands. A columnar selection of Quercus 'Columna'. Park tree. May also be planted in narrow avenues on open green verges in spacious residential areas. Endures slightly drier soils. Cultivated in limited quantities.



Quercus palustris



Quercus palustris 'Green Pillar'

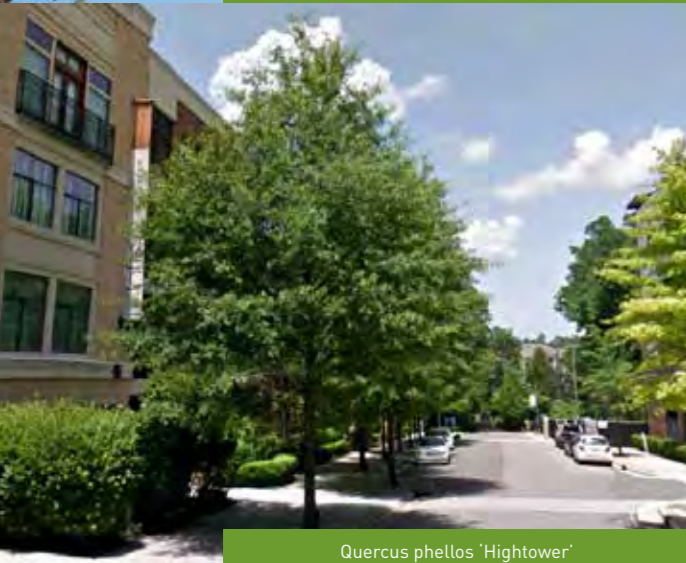


Quercus petraea

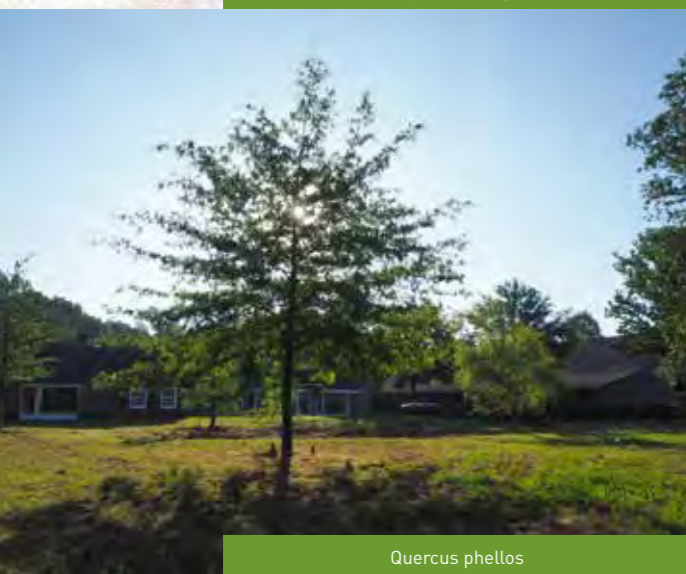




Quercus petraea 'Mespilifolia'



Quercus phellos 'Hightower'



Quercus phellos

### petraea 'Mespilifolia'

(syn. Quercus petraea 'Louettii')



France, 1843. Forms a round, half-open crown, height 15-20 m. Small, lance-shaped, green and unlobed leaves, 10-18 cm. In May, yellow-brown male catkins appear. Ovoid acorns, 2-2.5 cm in bundles. Grows on all soils, if not too moist. Tolerates road salt. For wide streets and avenues, park tree.

### phellos Willow-leaf oak



Origin: Eastern part of North America. Hardy tree with relatively regular crown, 15-20 m high. Smooth, dark grey trunk and dark green, narrow lance-shaped leaves, 6-10 cm long, matte shiny green. In warm areas, it is semi-deciduous, in our area, it sheds its leaves. Yellow to auburn autumn colours. Specimen tree or park tree.

### phellos 'Hightower'®

(syn. Quercus phellos 'QPSTA')



Tree Introductions Inc., Athens, USA, 2001. Introduced in Europe in 2003 by Boomkwekerij Udenhout. Wide pyramidal to round crown. Height 20 m, width 7-9 m. Grows faster than the species. Evenly branched. Grows on its own root. Dark grey to black bark and fine lance-shaped foliage, 10 cm long, 2.5 cm wide. Contrary to regular oaks which have a robust character and firm green leaf, the leafy canopy of 'Hightower' has a transparent glow. It has a phenomenal yellow-orange autumn colour. Deciduous and a big producer of acorns, a major food source for squirrels, birds and other wildlife. Acorn production start with 15 years already, which is sooner than with other oaks. A fast grower, very hardy and endures shady and sunny locations. It thrives on well-drained, moist and nutritious soil types and tolerates wet soils and occasionally flooding. The tree adapts itself to clay, loamy and sandy soils. Specimen or avenue tree for wider profiles.

### phellos 'Upperton'®



Ray Tate, Bishop, Georgia, USA, 1986. Introduced in Europe in 2003 by Boomkwekerij Udenhout. Narrow upright dense crown. Height 18 m, width 5 m. Grows on its own root. Dark green, long leaf. Beautiful yellow-orange autumn colouring. Suitable for narrow streets and avenues.

### pinus



Origin: East and Central USA. Imported in Europe in 1730. A medium-sized tree, height up to 15-25 m with pyramidal growth in its juvenile stage. Later slightly more egg-round. Leaf shiny yellowish-green. Underside is slightly duller in colour. Leaf turns from orangey-yellow to brown in autumn. Bark greyish-brown and very smooth in the juvenile stage, later a thick bark with sharp ribs. An ornamental tree for parks and small gardens.

### pubescens Downy oak, Pubescent oak



Native to Central and Southern Europe, the Caucasus and Asia Minor. Develops a round, flattened crown. Height 18-20 m, width 20-25 m. Grey-brown deeply grooved trunk. The slightly hairy leaf is dark green in colour; 10 cm in size with up to 7 round lobes on each side, the underside is grey-haired. It is often planted in southern Europe for truffle cultivation. Newly planted trees develop a fungal graft on the roots, which later forms the truffles. Grows on acidic to neutral, drier soils. Specimen tree.

### robur Common oak, European oak, English oak

(syn. Quercus pedunculata)



Originally indigenous to large parts of Europe, including the Netherlands. Well-known oak with a height of 25-30 m. Wide, heavy crown with crooked branches. Bark has deep grooves when matured. Leaf is variable in size and shape, irregularly pinnate. Often shoots auburn to bronze green. Leaf sitting to almost stalkless. Acorns in groups of 2-3 with stalks. Deeply rooting species for heavier nutritious and damp, loamy soils and marshlands. Endures some shade. When planted in stream and river valleys, temporary flooding with running muddy water is beneficial to the tree. High-class forest, avenue and park tree. Under perfect soil conditions, it can also grow in paved surfaces.

### robur 'Alpha'



Naktuinbouw, the Netherlands. A rising domestic oak with a pyramidal crown and branches inclining at angles of approximately 30° from the trunk and scaffold branches that are not too heavy. Hardly cultivated because of graft incompatibility.

### robur 'Beta'



Naktuinbouw, the Netherlands. Selection with a beautifully rising trunk and a more or less round crown. Branches inclining at an angle of approximately 30°. Robust grower with well-shaped, strong branches. Dark green leaf. Excellent trunk development in both length and thickness. Hardly cultivated because of graft incompatibility.

### robur 'Concordia'



Van Geert Nursery, Gent, Belgium, 1843. Forms an oval to wide, round crown, 6-8 m high. Rather open crown structure. Buds fresh yellow and holds its yellow colour throughout the entire growth season. In summer and when planted on dry soils, scorching may occur. Suitable for small gardens.

### robur 'Cupressoides'



Rather narrow-growing, columnar oak variety. Leaves slightly smaller and narrower than is common to the species. Nice tree when young because of the many thin, rather strongly rising branches; however, once established the spindly branches thin out into an 'untidy' columnar shape.



Quercus robur



Quercus robur



Quercus robur



Quercus robur 'Fastigiata Koster'



Quercus robur 'Regal Prince'



Quercus robur 'Regal Prince'

### robur 'Fastigiata'

(syn. Quercus robur 'Pyramidalis')



Babenhausen, Germany, 1874. Columnar to narrow conical crown with rising branches. Height 15-20 m. Width 3-4 m. Over time, the crown of this cultivar thins out. Planted only in limited numbers because of this.

### robur 'Fastigiata Koster'



D.A. Koster, Boskoop, the Netherlands, 1978. One of the better columnar oaks. Columnar to narrow conical crown with rising branches. This variety does not thin out. Height 10-15 m, width 3-5 m maximum.

### robur 'Gamma'



Naktuinbouw, the Netherlands. Selection with a wider crown than 'Alpha' and 'Beta', with heavy spreading branches. The branches are inclining in angles between 90° and 45° from the trunk. Very strong grower with substantial trunk growth. Especially suited for roadside planting in landscapes. Hardly cultivated because of graft incompatibility.

### robur 'Pectinata'

(syn. Quercus pectinata)



Germany, 1864, described by Carl Eduard Petzold (1815-1891) & Georg Kirchner (1837-1885) in Arboretum Muscaviense. Round, half-open crown, height 5-6 m. Deciduous. Its green, 7-14 cm long leaves are deeply indented (up to the midrib). Orange-yellow autumn colours. In May, 2-4 cm long, yellow-green male catkins. Oval acorns, 1.5-2.5 cm in bundles of 2 to 6. Requires nutritious, moist soil types. Good wind resistance and tolerates road salt. Park tree.

### robur 'Regal Prince'®

(Quercus robur 'Fastigiata' x Quercus bicolor)

(syn. Quercus x warei 'Long')



J. Frank Schmidt & Son Co., Boring, Oregon, USA. Columnar to narrow oval shape. Height 15 m, width 6 m. Dark green, glossy leaves with a grey and felty underside. Yellow autumn colouring, later brown, and leaves are retained on the tree in a dried state for a long time. Mildew resistant. For narrow streets and small gardens.

### robur 'Timuki'



Raimond Cinovskis, Riga, Latvia, 1946. Round, half-open crown, height 15-18 m. This cultivar buds green in spring. In summer and autumn, the foliage colours to red and dark purple. Has larger leaf than Quercus robur 'Purpurea'. In May, green-yellow male catkins. Requires nutritious, humus-rich, moist soils. Good wind resistance and tolerates road salt.

### rubra Red oak, American oak

(syn. Quercus borealis var. maxima)



Origin: Eastern part of North America. Up to 25 m tall tree with a wide, often somewhat oblate, round crown with strongly spreading, heavy main branches. Olive-brown twigs. Large, deeply lobed pinnate leaves with sharply pointed lobes and a strongly serrated margin, up to 16 cm long. Shiny dark green and rather tough with a relatively long petiole. Beautiful autumn colours with many hues, from yellowish-brown to orange-scarlet red. Endures shade, by nature deeply rooting. Relatively undemanding oak species for drier, poor, acidic soils. Does not endure onshore winds, susceptible to crown damage in heavy storms. Park tree, avenue tree on lighter soils on open verges. Primarily for landscape planting.

### rubra 'Aurea'



Van der Bom, Oudendbosch, the Netherlands, 1878. Growth is species-specific. Buds bright yellow. In summer, the foliage turns yellowish-green. Golden-yellow male catkins in May. Wide, ovoid acorns enclosed by a cupule with triangular scales. Does not tolerate pavement, application for the rest species-specific.

### rubra 'Boltes Gold'



M.M. Bömer, Zundert, the Netherlands. Wide oval to round, half-open crown. Golden-yellow leaves up to 25 cm. Does not suffer from scorching when planted in full sun. Colours to orange-red in autumn. Golden-yellow male catkins in May. Wide, ovoid acorns in a cupule with triangular scales. Does not tolerate pavement, application for the rest species-specific.

### rubra 'Magic Fire'



This cultivar buds yellow and turns green in summer. Yellow autumn colours. Stands out in winter because of its 1-year-old orange-red twigs. Golden-yellow male catkins in May. Wide, ovoid acorns in a cupule with triangular scales. Does not tolerate pavement, application for the rest species-specific.

### rysophylla 'Maya' Mexican oak, Loquat oak



M.M. Bömer, Zundert, the Netherlands. Origin: eastern Mexico and Guatemala. The leaves strongly resemble those of Eriobotrya, hence the name Loquat oak. Wide ovoid crown, height up to 18 m. Different foliage shapes may occur in 1 plant; from sharply serrated to slightly lobed on young shoots. Evergreen leaves, 16-20 cm long and 4-7 cm wide. Emerging leaves shoot red and are slightly felty. Later on, they become shiny dark green on top with deep venation, and more matte in colour on the underside. In its juvenile stage, it has a smooth, pale trunk, once established the trunk is chequered and has deep cracks. Male catkins are very small and there are hardly any noticeable female flowers, dioecious. Acorns 1.5 cm in size, which ripen on the tree for 1 year. Grows on all soil types. Park tree and avenue tree for wider street profiles.



Quercus rubra



Quercus rubra



Quercus rysophylla 'Maya'



Quercus texana New Madrid Group

### x sargentii 'Thomas'

(Quercus prinus x Quercus robur)



Rare hybrid of which the mother tree was planted by Thomas Lee on the Holm Lea Estate of the Sargent family in Massachusetts, USA, 1830. Can reach a height up to 30 m and an almost equally wide crown. Foliage strongly resembles that of Quercus robur, but has slightly deeper lobes and is shinier. Beautiful red autumn colour. The dark, smooth bark gets deep cracks as it matures. Very healthy and not infected by powdery mildew. Grows on all soil types.

### shumardii Spotted oak, Swamp red oak



Indigenous to the Southern and Southeastern parts of North America. Tall tree, by nature 18-24 m high and 12-18 m wide. Substantially smaller and less wide when cultivated. Initially, the tree develops a conical crown, later growing wider, wide ovate to ovoid with rising branches. Dark, greyish-green bark with furrows. Rather open crown. Leaves reversed ovoid to wide ovate, 12-20 cm long and 10-12 cm wide. Wide, pointy lobes, separated by deep indentations. A stately park tree, which requires full sun and a well-drained nutritious soil that allows deep rooting.

### texana New Madrid Group

(syn. Quercus nuttallii)



Cultivated trees originate from a specimen tree from the city New Madrid, Missouri, USA. Height up to 25 m, 20 m wide. Very hardy. Leaves are 15 cm long, 5-6 cm wide, elliptical shaped, shiny on top and bottom, slightly hairy where the veins split. 5-7 lobes ending in a pointy tip. Shiny petioles, 2-5 cm long. Leaves emerge dark burgundy. Grey-brown stem with fine fissures. Male catkins in April, very small female flowers. The acorns, 3 cm in size, ripen on the tree for 1 year. In the USA, a very important food source for rodents, deers, turkeys and ducks. Grows on heavy, wet soil types. Very beautiful red autumn colour. Closely related to Quercus palustris.

### x turneri 'Pseudoturneri'

(Quercus ilex x Quercus robur)



Spencer Turner (1843-1928), Royal Botanic Gardens, Kew, London, UK, 1880. Semi-evergreen, large shrub or small tree with a height up to 10 m maximum. Rather closed conical crown. Leaves oblong ovate, 6-10 cm long, with roughly serrated leaf margin, leathery, shiny dark green. Very hardy, even in the Netherlands. Requires nutritious, damp soils. Beautiful specimen shrub or tree for parks, public gardens and large private gardens. Also very ornamental because of its inflorescence and fructification.

### velutina 'Albertsii'



G.L. Alberts, Boskoop, the Netherlands, 1863. Forms a round and open crown, height 25-30 m. Straight, dark grey, smooth trunk. Large, grey and hairy leaf buds. Long ovoid to obovate, deeply lobed, dark green and very large (30-35 cm) leaves. In autumn, yellow to orange-brown colours. Golden, male catkins in May. Ovoid acorns 2 cm, single or in pairs. Requires dry, calcareous soils. Park tree.

### x warei 'Chimney Fire'®

(Quercus robur 'Fastigiata' x Quercus bicolor)



Guy Sternberg, Starhill Forest Arboretum, Petersburg, Illinois, USA. Columnar to narrow ovate growth. Height 15 m, width 6 m. Young foliage emerges red. Dark green, shiny leaves with a grey and felty underside. Rusty red autumn colour. The foliage is retained on the tree in a dried state for a long time. Mildew resistant. Grows on all soil types, very drought resistant. For narrow streets and small gardens.

### x warei 'Nadler'®

(syn. Quercus x warei 'Kindred Spirit')



JD Nadler, St. Peters, Missouri, USA, 2006. This selection comes from the mother tree of 'Regal Prince'. Very narrow, upright tree. Height 12-14 m, width 2-2.5 m. Mildew resistant and very wind resistant. Dark green, glossy leaves with a grey and felty underside. Yellow autumn colouring, later brown. For narrow streets and small gardens.

### x warei 'Windcandle'®



Guy Sternberg, Starhill Forest Arboretum, Petersburg, Illinois, USA. Columnar shape up to 12 m high. Green leaves with a white-green underside. Leaves are retained on the tree in a dried state far into winter. Mildew resistant. Not suitable for pavement. Grows on all well-drained soils. Hardy.



Quercus x warei 'Nadler'



Quercus x warei 'Nadler'

# Quillaja

fam. Quillajaceae

# Rhus

fam. Anacardiaceae

## Soap bark tree, Quillaja

A genus that comprises only 3 species. The name Quillaja is derived from the Chilean and Argentinian word: *Quillean*, to wash, and refers to the inner bark, which can be reduced to powder and used as a substitute for soap. The Soap bark tree has a long history of medicinal use. Normally as a tree or shrub and evergreen. Quillaja has attractive, shiny, thick leathery foliage and blooms with large, purple centred flowers in spring. Thrives on locations that are sheltered from cold, sunny locations and on well-drained, nutritious soils.

## Staghorn sumac

A genus that comprises around 200 species and is part of the cashew or sumac tree (Anacardiaceae) family. Occurring in North America, South Africa, subtropical regions in Asia and Northeast Australia. Known under the name Sumac, in South Africa under the name *Taibos*. The plant contains a lot of tannin, which can cause an allergic reaction upon contact with the plant. Within the Anacardiaceae family, staghorn sumac is not closely related to poison sumac (*Toxicodendron vernix*), although they share the name "sumac". *Toxicodendron vernix* gives stronger allergic reactions upon contact.

**saponaria** Soap bark tree, Quillay, Soap bush



Origin: Chile. Evergreen shrub or tree, which can grow up to 15-20 m. Thick dark bark. Shiny, leathery leaves, 3-5 cm. White, star-shaped flowers, 15 mm in size in dense corymbs. Fruits with five follicles each containing 10-20 seeds. Best to plant in full sun and / or a warm location on well-drained nutritious soil. Garden and park tree.



Quillaja saponaria

**potaninii** Chinese sumac  
(syn. *Rhus sinica*, *Rhus henryi*)

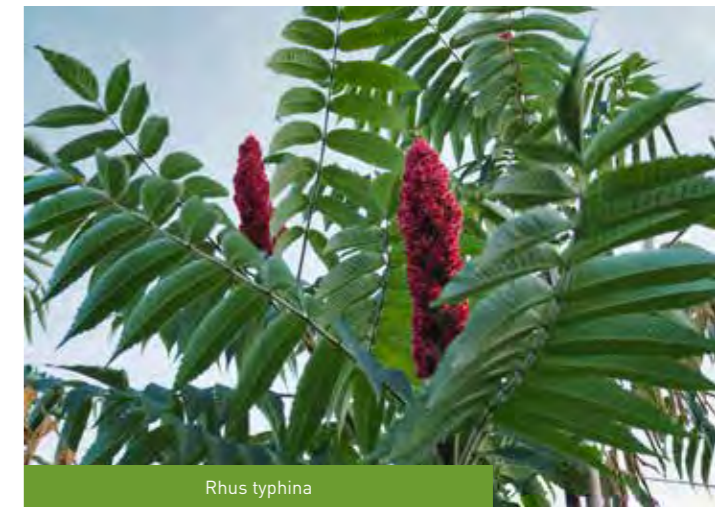


Origin: China. Small tree or large shrub with irregular growth. Height 10-12 m. Flowers in June-July. Dioecious flowers. The individual flowers are either male or female and an individual plant grows only one gender. Fertilisation is carried out by bees. Plant several plants together. *Rhus potaninii* has no subsoil preferences, but it must be planted in the sun on well-drained soil. Beautiful crimson autumn colouring. The sap of *Rhus potaninii* may cause skin irritations. Use in parks and large gardens.

**typhina** Staghorn sumac, Velvet sumac, Vinegar tree



Originating from North America. Shrub or small tree up to 10 m high, wide vase-shaped. Green, slightly shiny, odd-pinnate leaves, 15 cm long, with a serrated margin. Dioecious plant, flowers from the end of June to September with yellow-green, candle-like panicles. The female flowers are 10-20 cm long and feel velvety. The male flowers form larger, thinner panicles. The fruits are burgundy-coloured. Softly haired twigs. Develops root suckers. Very hardy. Sun or partial shade. Tolerates air pollution and onshore wind. Grows on all soil types.



Rhus typhina



Rhus typhina

# Robinia

fam. Fabaceae

# Robinia

fam. Fabaceae

## Acacia

A genus that comprises around 20 species and many cultivars, all indigenous to North America. *Robinia pseudoacacia* is by far the most important species within this genus. Since it was introduced in Europe in the early 17th century by the Frenchman Jean Robin (1550-1629), this lightwood acclimatized so well that it ran wild across large parts of Europe by means of dissemination. The Black locust has great adaptive power and certainly holds well on poorer grounds. Planting it therefore offers great opportunities, also in woods and on wooded banks. In the wild, the tree behaves like a colonizer plant. A disadvantage of the use of the Robinia for avenue, street or park planting is its susceptibility to wind damage. Although some cultivars are less susceptible to wind damage than others, this characteristic should nevertheless be taken into account when considering the tree for roadside planting. A benefit of the Acacia, however, is that it grows well in paved road surfaces.

### **x ambigua 'Decaisneana'**

(*Robinia pseudoacacia* x *Robinia viscosa*)  
(syn. *Robinia pseudoacacia* 'Decaisneana')



Joseph Decaisne (1807-1882), Villevieulle, Manosque, France, 1860. Develops into a medium-sized tree shape with a height of 8-10 m and a wide, open crown. The twigs only have a few thorns and are sticky. Leaves slightly smaller than the leaves of *Robinia pseudoacacia*. Generally straight trunk. Blooms in June-August with rather large flowers in suspending, light pink bunches. Street, avenue and park tree on wind-sheltered locations.

### **x ambigua 'Rozsaszin AC'**



A fast-growing Hungarian selection with strong and wide spreading branches. Dense crown, which provides a lot of shade. Auburn twigs with small thorns. Leaf medium-sized with ovate, elliptical dark green leaflets. Blooms profusely with many pink flowers that produce lots of nectar. Blooms late. Park tree and excellently flowering plant for bees.



*Robinia pseudoacacia*

### **x margaretta 'Pink Cascade'**

(syn. *Robinia x margaretta* 'Casque Rouge', *Robinia x margaretta* 'Purple Crown')



Princeton Nurseries, Kingston, New York, USA, 1934. Introduced in 1950. Good-growing cultivar. Height 6-10 m. Irregular round and slightly oblate crown. Hardly suffers from branches breaking off. Blooms very early with very beautiful, dark pink flowers. The fragrant flowers suspend in 15 cm long bunches. Park tree and excellent, melliferous plant.

### **pseudoacacia Black locust, False acacia**



Origin: Eastern and Central USA. Tree with a short robust trunk that branches out irregularly already in the lower part of the crown, height up to 20-25 m. Deeply grooved, greyish-brown bark. Very rustic appearance. Irregularly branched crown with rather short winding twigs with sharp, hooked thorns. Deeply rooting, partly spreading. Produces surface roots on hard soils and at high groundwater levels and therefore can be blown over. The crown is relatively open and translucent, which is a positive characteristic for avenue and street planting. The branches are susceptible to breakage in the wind. Odd-pinnate, soft green leaf, emerging relatively late. Blooms in June with white, fragrant flowers in suspending bunches. Park and avenue tree, also for estates and such. For the purpose of urban avenue and street planting mostly cultivars are used, as these are more wind resistant.

### **pseudoacacia 'Appalachia'**



Hopp, USA, 1945. Cultivar with a very straight trunk. Initial growth is rather narrow rising, later it develops a slightly wider crown. Height 15-20 m. Long, ovate leaf. Reasonably wind resistant tree that should not be pruned. Flowers in suspending bunches. Good avenue tree.

### **pseudoacacia 'Bessoniana'**



Germany, 1859. Big tree with a straight trunk and a closed, ovate crown, height up to 20 m. Spreading branches, almost thornless. Flowers rarely, cream-white in more compact bunches than common to the species. The closed crown is sensitive to wind. Valuable street and avenue tree for sheltered streets.

### **pseudoacacia 'Coluteoides'**



UK, 1765. Small tree, 6-8 m high, with a thin, round crown. Small, ovate leaves, 10-20 mm long. Blooms profusely with white flowers. Not cultivated.

### **pseudoacacia 'Frisia'**



W. Jansen, Zwollerkarspel, the Netherlands, 1935. Habit species-specific, but remains smaller, 10-15 m high. Fast-growing cultivar with short, irregular branches. The twigs have striking red thorns in spring. The odd-pinnate leaf remains bright golden-yellow during the entire growing season. Flowers rarely. Very ornamental park tree, especially against dark backgrounds.



*Robinia x margaretta* 'Pink Cascade'

*Robinia pseudoacacia* 'Bessoniana'



*Robinia pseudoacacia* 'Frisia'

# Robinia

fam. Fabaceae



Robinia pseudoacacia 'Frisia'



Robinia pseudoacacia 'Nyrsegi'



Robinia pseudoacacia 'Pyramidalis'

## pseudoacacia 'Lombarts'



Jacques Lombarts, Zundert, the Netherlands, 1950. When top grafted, it develops an ovate, dense crown with rising branches, height 35 m, width 23 m. Slow grower with a compact habit. Leaves deep dark green. The shape is somewhere between 'Bessoniana' and 'Umbraculifera'. Similar to the Umbrella black locust, to be used as a street tree for narrow street profiles. Hardly cultivated.

## pseudoacacia 'Myrtifolia'



1850. Characteristic, rising tree that is more horizontally spreading at a later age, which creates a spherical crown. Has small, ovoid, 10-15 mm long leaves with a round to dented leaf top. Does not flower, or rarely. Is often top grafted.

## pseudoacacia 'Nyrsegi'



Hungary, 1980. Selection with a straight trunk, introduced by Boomkwekerij Udenhout. Strongly rising branches. Propagated by root cuttings. Because of its impressive, lengthwise growth in the first year (3 m), it can be used ideally as a rootstock for the Umbrella black locust. Bright green leaves, typically odd-pinnate. Reasonably amount of relatively big thorns. Blooms white with short bunches of 16 flowers. Rather short flowering period of 8-12 days. Hardly produces seed. Good street and avenue tree.

## pseudoacacia 'Pyramidalis'

(syn. Robinia pseudoacacia 'Fastigiata')



France, 1839. Well-growing, narrow columnar tree, the habit of which slightly resembles the Italian poplar. Height 13-15 m, width up to 4-5 m. Branches straight upright, twigs virtually thornless. Leaf species-specific. Rarely flowers. Because of its narrow shape, it can be used as a street tree in narrower profiles, but usually it is planted as a park tree.

## pseudoacacia 'Rozynskiana'



Späth'sche Baumschulen, Berlin, Germany, 1903. Medium-sized tree with a wide, loose crown with spreading branches. The pinnate, up to 30 cm long leaf suspends perpendicularly. Small, light green side leaflets that are rather far apart. Very decorative when in foliage. Relatively big, white flowers, flowering richly once established. Attractive park tree, also very ornamental when loosely grouped in avenues on wide green verges. The lower branches and twigs with the hanging leaves are too low for the tree to be planted on paved surfaces.

## pseudoacacia 'Sandraudiga'



Jacques Lombarts, Zundert, the Netherlands, 1937. Named after the goddess Sandraudiga. A temple dedicated to her, was found in Zundert in 1842. Fast-growing variety with a wide rising, ovate to conical, relatively open crown. Height 13-15 m. Large leaves with 3-7 leaflets on densely thorned twigs. The leaf shape is somewhere between species-specific and the simple leaf shape of 'Unifoliola'. Flowers sparsely with cream-white to light pink flowers. Wind resistant variety for street and avenue planting.

# Robinia

fam. Fabaceae

## pseudoacacia 'Semperflorens'



France, 1874. Fast-growing variety with a rising, loose and open crown, later turning more oblate ovate. Height 18-20 m. In June, white flowers in abundance. Continues to flower until September but less richly. Wind resistant. Very suitable for street and avenue planting in wider profiles.

## pseudoacacia 'Tortuosa'



France, 1813. Shrub-like growing tree on a short trunk, 10-12 m high. Capricious winding and gnarling branches and short, twisting twigs. The small leaves are also slightly twisted and slightly hanging. Rarely flowers. Very characteristic park tree with an attractive winter silhouette.

## pseudoacacia 'Umbraculifera' Umbrella black locust (syn. Robinia pseudoacacia 'Inermis')



Austria, 1813. When top grafted, this tree develops a compact spherical crown. Is often pruned back again after a few years to develop a rejuvenated ball shape again. Because of this pruning method, it is suitable for narrow streets, little squares and such. If one allows the crown to grow out naturally, the tree will create a wide umbel-shaped habit, which looks very beautiful in older specimen.

## pseudoacacia 'Unifoliola'

(syn. Robinia pseudoacacia 'Monophylla')



Pépinières Deniaux, France, 1858. Strong grower with a straight trunk and short side branches. Height 12-15 m. Irregularly branched, conical crown. Leaves hanging with one very large (15 cm) terminal leaflet and 3-7 smaller side leaflets. Retains its leaves late into autumn. White flowers in abundance. Very suitable for street and avenue planting. Slightly sensitive to wind.

## x slavinii 'Hillieri'

(syn. Robinia x hillieri)



Hillier Nurseries, Ampfield, UK, 1933. A better-known cultivar of the hybrid Robinia x slavinii (Robinia kelseyi x Robinia pseudoacacia). Is generally top grafted and then grows into a small upright tree shape with an ornamental loose crown, height 6-8 m. Low in thorns. Leaf 10-20 cm long, with many leaves in pairs. As a young plant it flowers very richly with lilac-pink, fragrant flowers in bunches. Beautiful, small park tree, also for larger gardens. Under perfect soil and location conditions (sunny, warm and wind sheltered), it may also be a nice avenue tree on open green verges.

## viscosa Sticky locust

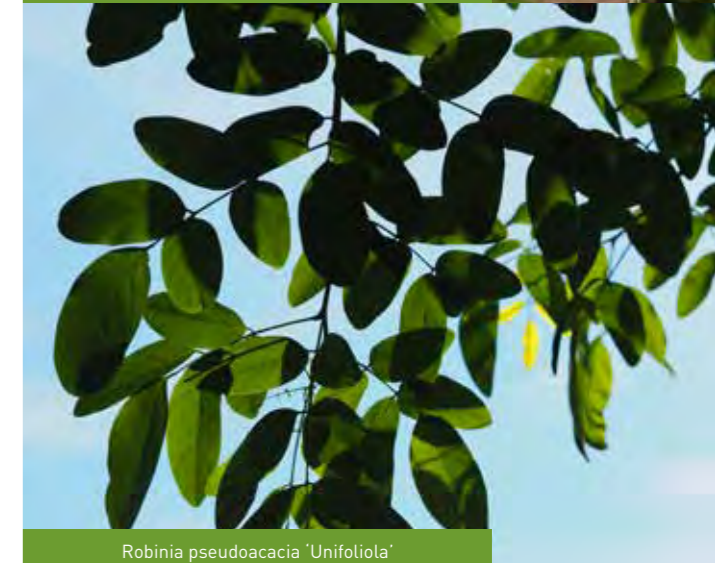
(syn. Robinia glutinosa)



Origin: Southeastern parts of North America. Small to medium-high tree, height 6-8 m, with a wide, round crown and spreading branches. Its fresh twigs and petioles are dark red and sticky, with only a few thorns. Long, odd-pinnate leaf with many side leaflets. Flowers in May-June and once again in August with slightly overhanging 8 cm long multi-flowered light lilac-pink, bunches. Beautiful park tree. Endures pavement, therefore suitable as a street and avenue tree. In that case, however, it must have a sufficient stem height.



Robinia pseudoacacia 'Umbraculifera'



Robinia pseudoacacia 'Unifoliola'



Robinia pseudoacacia 'Unifoliola'

## Willow

A genus that comprises around 160 species that can be found across almost the entire Northern Hemisphere, from small creeping shrubs to trees. Because of its natural hybridising and the achievements of science and selection growers, there are countless known cultivated varieties. The clones of *Salix alba* (Shooting willow, Common willow, White willow) are extremely important because of their good habit and fast growth on most moderately wet soils. Because of their deep rooting capacity, *Salix* can endure strong winds and their timber has found many applications. The thin wood is used for wicker wood, the shoots for wickerwork and baskets and the thick timber for paper, toys, clogs, boxes, the plywood industry etc. Willows endure high groundwater levels quite well and can even endure temporary floods in summer.



Salix alba



Salix alba 'Amstelveen'

### acutifolia 'Pendulifolia' ♂



Späth'sche Baumschulen, Berlin, Germany, 1939. Small tree or large shrub with a height of approx. 5 m with an ovate to round crown shape. Auburn branches with a waxy layer. Long elliptical hanging deep green leaf. Attractive ornamental tree for parks.

### alba White willow



Originating in Europe, North Africa, and Central Asia. Dark grey trunk. Thin, long, light grey to olive-coloured twigs. Narrow, lanceolate leaves, 5-10 cm, light grey on the underside and a clear venation, green on top. Flowers with catkins which appear simultaneously with the emerging leaf. Grows on all soils, even very wet soil types. Used to be planted as a pollarded tree. Suitable for landscape planting.

### alba 'Amstelveen'



Selection from the Dutch city of Amstelveen, the Netherlands. Very strong growth in its juvenile stage. Green to brown twigs. Coarse upright form.

### alba 'Barlo' ♂



W.B. Geessink, the Netherlands, 1968. Selected in Lichtenvoorde. Height 20 m. Narrow cylindrical crown with many short scaffold branches that are rather upright. Protrudes up to the top with a slightly twisted leader. Dense foliage. For roadside planting and such.

### alba 'Belders' ♂



Naktuinbouw, Bos de Belders, between the cities Sint-Oedenrode and Best, the Netherlands, 1967. Narrow-crowned variety with a straight to slightly winding straight trunk. Height 20-25 m. Wind resistant. For roadside planting and such.

### alba 'Bredevoort' ♂



W.B. Geessink, the Netherlands, 1968. Selected in Bredevoort. Narrow, pyramidal crown with an almost straight trunk and a protruding, twisted leader. Relatively short, rather upright branches. Large leaf, 11-13 cm long. For roadside planting and such.

### alba 'Chermesina' ♂ Scarlet willow (syn. *Salix alba* 'Britzensis')



Braunschweig, Germany, 1940. Medium-tall tree, 12-15 m high, with an ovate, pyramidal crown. Young twigs are strikingly orange-red, attractive winter silhouette. Regular cutting back ensures that the coloured twigs keep on growing back constantly. Attractive park tree.

### alba 'Drakenburg' ♀



Dutch Forest Service Staatsbosbeheer, Heiloo, the Netherlands, 1955. Selected near Heilo. Moderately wide, pyramidal crown with relatively straight trunk. Straight central leader, halfway to the crown, after which it forks. Twigs dark brown with a slightly overhanging top. Early yellow autumn colour. Not sensitive to wind, but susceptible to *Brenneria salicis*. For roadside planting and such.

### alba 'Green Valley'



Green Valley Farms, Montevallo, Alabama, USA. A wide and tall weeping variety with perpendicularly hanging branches. The mother tree stood out because of its healthy, green foliage with lancet-shaped leaves. The twigs are green. Is propagated from winter cuttings. Beautiful park tree. This variety is maintained in multiplication fields.

### alba 'Het Goor' ♂



W.B. Geessink, the Netherlands, 1968. Selected near Lichtenvoorde. Tree with a wide ovate crown. Rather straight trunk and relatively wide spreading branches, side branches and twigs bending upwards. For roadside planting and such. This variety is maintained in multiplication fields.

### alba 'Lichtenvoorde' ♂



W.B. Geessink, the Netherlands, 1968. Selected in Lievelede near Lichtenvoorde. Rather narrow cylindrical crown with a straight trunk. Short rising branches with overhanging tops. Rather susceptible to *Brenneria salicis*. For roadside planting, landscape planting and such. This variety is maintained in multiplication fields.



Salix alba 'Belders'



Salix alba 'Chermesina'



Salix alba 'Chermesina'



Salix alba 'Liempde'

**alba 'Liempde'** ♂



H.C. van Vleuten, the Netherlands, 1949. Clone with a narrow pyramidal crown and a straight trunk. Rather steeply rising side branches and upward bending twigs. Most often planted White willow. Suitable for very windy locations. For roadside planting, landscape planting, wet deciduous forests and such.

**alba 'Lievalde'** ♂



W.B. Geessink, the Netherlands, 1967. Selected in Lievalde. Fast grower with a straight trunk. Crown moderately wide pyramidal with upright branches. The lower scaffold branches are strikingly long and reach halfway to the crown. For roadside and avenue planting and such.

**alba 'Red Hunter'**



The Netherlands, 1995. Like Salix alba 'Green Valley', this is a wide and tall weeping variety with perpendicularly hanging branches. Orange-red twigs in winter. Foliage emerges light green, later shiny green, lancet-shaped leaf. Is propagated from winter cuttings. Excellent park tree. This variety is maintained in multiplication fields.

**alba 'Rockanje'** ♂



C. Sipkes, Dutch Forest Service Staatsbosbeheer, the Netherlands, 1955. Selected near Voorne. Rather wide rising tree with a moderately straight trunk. Straight leader halfway to the crown, irregularly protruding to the top. Endures onshore winds. For roadside planting in the Dutch provinces of Zeeland and Zuid-Holland, as well as in polders, etc.

**alba 'Sericea'** Silver willow

(syn. Salix alba 'Argentea')



Späth'sche Baumschulen, Berlin, Germany, 1840. Small tree with a height of 5-10 m. 10 cm long lancet-shaped leaf, silvery-grey, silky pilose. Park tree.

**alba 'Vitellina'** Golden willow



Switzerland, 1671. Tall tree with rising branches and hanging, strikingly yellow twigs. Beautiful specimen tree in winter. Often cultivated by nurseries for its shoots, which are very suitable for binding and braiding. Park tree.

**babylonica** Green weeping willow



Origin: China, Japan. Weeping variety with bare green twigs. Height 10-12 m. Leaves lancet-shaped, finely serrated with a greyish-green underside. Park tree for waterside plantings.

**babylonica 'Tortuosa'** Dragon's claw willow  
(syn. Salix matsudana 'Tortuosa')



Belgium, 1920. Medium-sized tree with twisted branches and leaves. Height 10-15 m. Leaf greyish-green. Branches are often used for Easter branches / decoration. Beautiful tree for parks and gardens, especially in the winter.

**babylonica 'Umbraculifera'** ♀  
(syn. Salix matsudana 'Umbraculifera')



Frank Nicolas Meyer (1875-1918), China, 1906. A variety of Salix babylonica that is cultivated in China. It has a bushy, rounded crown without a main centre branch. Is called 'Bread willow' in North-China because of its crown shape, which resembles a round loaf of bread. Fast grower, 7-8 m high and 9-10 m wide. Available with a short trunk or as a large multi-trunk shrub. A striking and decorative specimen tree / shrub for parks and public gardens.

**pentandra** Laurel willow

(syn. Salix laurifolia)



Origin: Europe, Asia. Fast-growing, high shrub or medium-sized tree with a height of 10-15 m. Dense round crown, dark grey bark. Young twigs shiny olive-green. Oblong leaf, 5-10 cm, top shiny dark green. Park tree.

**x rubens 'Calva'** ♀ Blue willow  
(syn. Salix alba 'Caerulea', Salix alba var. calva)

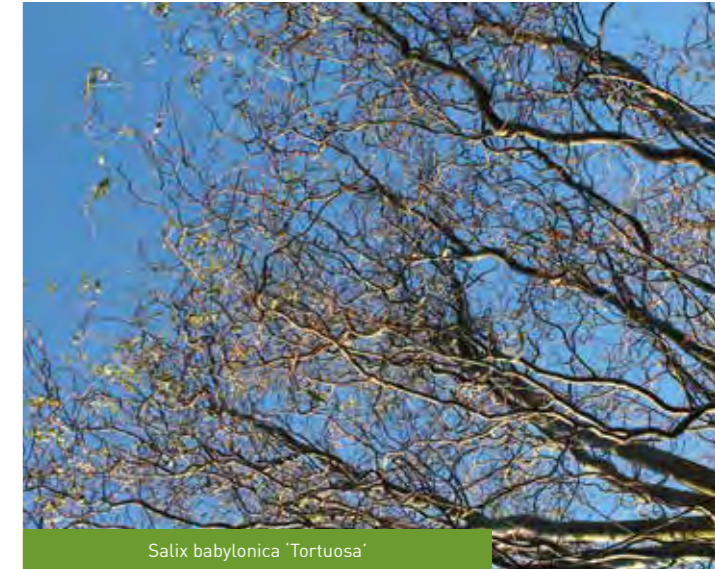


UK, 1800. Old clone with a straight trunk, but without a distinctive straight leader. Wide, rounded pyramidal to round crown. In its juvenile stage, narrower, ovate-pyramidal. Upright side branches and twigs. Leaf shiny green on top, lancet-shaped. Susceptible to Brenneria salicis. For roadside planting, landscape parks, timber production and such.

**x sepulcralis 'Chrysocoma'** Yellow weeping willow  
(Salix alba x Salix babylonica)  
(syn. Salix sepulcralis 'Tristis', Salix alba 'Tristis', Salix alba 'Vitellina Pendula')



France, 1815. The well-known weeping willow with its wide, dome-shaped crown and thin, yellow twigs, that plunge towards the ground. Height 20 m. Light green, lancet-shaped leaf. Park tree.



Salix babylonica 'Tortuosa'



Salix x sepulcralis 'Chrysocoma'



Salix x sepulcralis 'Chrysocoma'



# Sambucus

fam. Adoxaceae

## Elder, Elderberry

A genus that comprises around 25 species. Occurring as shrubs or small trees in moderate to subtropical climates. The berries of *Sambucus nigra* are used for culinary use or the production of cider. The berries attract many birds. The petals are often macerated in white wine to obtain an aperitif. In the wild, *Sambucus* propagates through root suckers.

**nigra 'Black Tower'** PBR Black tower elder  
(*Sambucus nigra* 'Pyramidalis' x *Sambucus nigra* 'Guincho Purple')  
(syn. *Sambucus nigra* 'Eifel 1')



Kenneth Richard Tobutt of Gravesend, NIAB EMR, Kent, UK. Deciduous with a very narrow, columnar shape. Height 3-4 m. Emerges green and then the leaves change from purple to almost black. The foliage contains the toxic substance cyan; only red deer can digest these leaves. In June-July, already in the juvenile stage, white-pink, fragrant flowers with dark red anthers appear. Purple-black edible berries. Hardy and grows on all soils. Attracts many bees and butterflies. For small private gardens, public gardens and lawns.

*Sambucus nigra*

# Sassafras

fam. Lauraceae

## Ague tree, Cinnamon wood

A genus that comprises 3 species: *Sassafras albidum* (West and North America), *Sassafras tzumu* (China) and *Sassafras randaiense* (Taiwan). In the Netherlands, we only cultivate the *albidum* species. The first settlers brought *Sassafras* to the United Kingdom in 1630. It has been in use for a long time because of its aromatic components that are used to produce medicine. It was also used to produce American root beer. However, since 1960, the active substance safrole has been banned as a flavouring substance in food, because it turned out to be a carcinogen.

**albidum** Silky sassafras



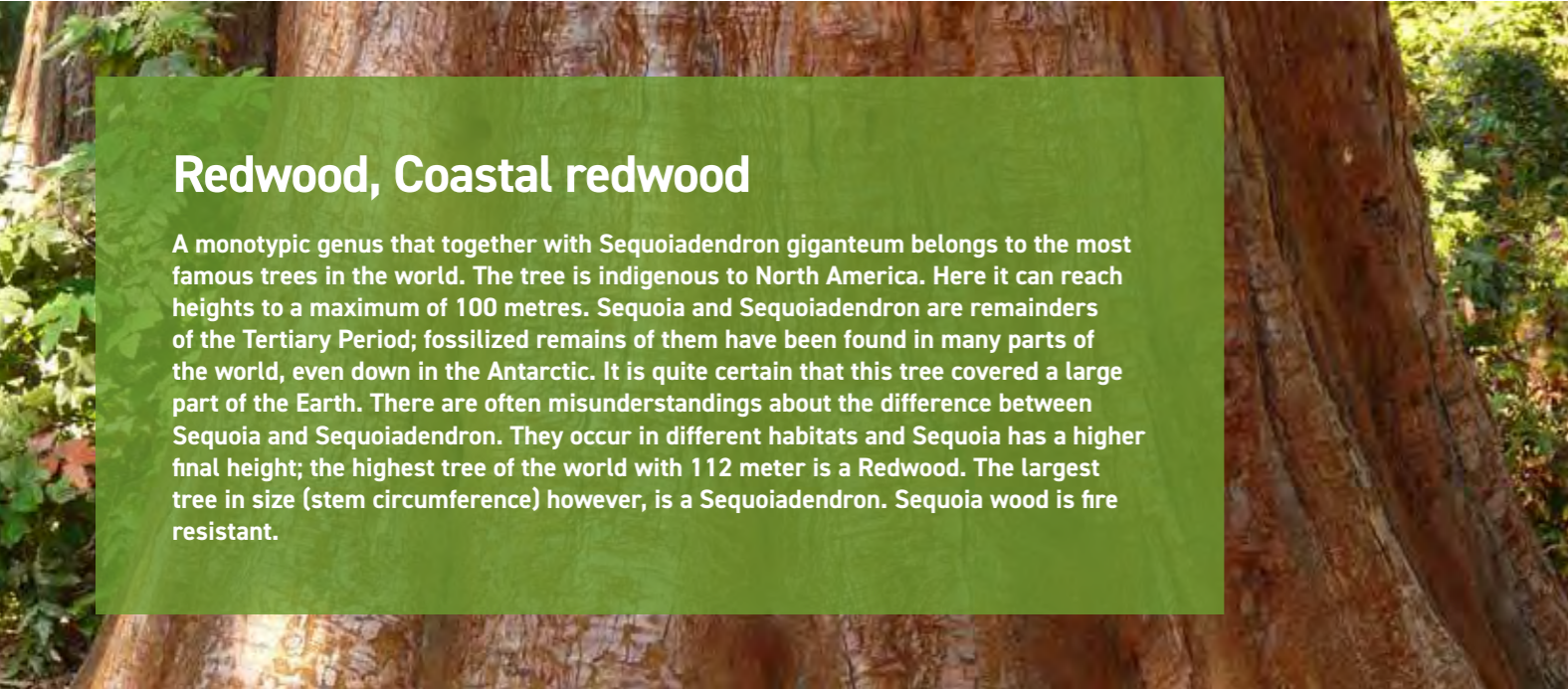
Old tree, much too unknown. Origin: Western and North America. Imported in Europe in 1633. Generally a rising shrub, but can also be cultivated as a tree. Height 15-20 m. Strongly spreading main scaffold branches and slightly hanging side branches and twigs, creating a round crown. Trunk and branches brown-grey, bark cracks at a later age. 7-14 cm long and 6-10 cm wide leaf. Underside is greyish pilose and blue in colour. Orange-red autumn colouring. Blooms in May, with up to 5 cm long bunches of small and greenish-yellow flowers. Small fruits of up to 1 cm, oval, bluish-black.

*Sassafras albidum*

*Sassafras albidum*

# Sequoia

fam. Taxodiaceae



## Redwood, Coastal redwood

A monotypic genus that together with *Sequoiadendron giganteum* belongs to the most famous trees in the world. The tree is indigenous to North America. Here it can reach heights to a maximum of 100 metres. *Sequoia* and *Sequoiadendron* are remainders of the Tertiary Period; fossilized remains of them have been found in many parts of the world, even down in the Antarctic. It is quite certain that this tree covered a large part of the Earth. There are often misunderstandings about the difference between *Sequoia* and *Sequoiadendron*. They occur in different habitats and *Sequoia* has a higher final height; the highest tree of the world with 112 meter is a Redwood. The largest tree in size (stem circumference) however, is a *Sequoiadendron*. *Sequoia* wood is fire resistant.



*Sequoia sempervirens*

*Sequoia sempervirens*

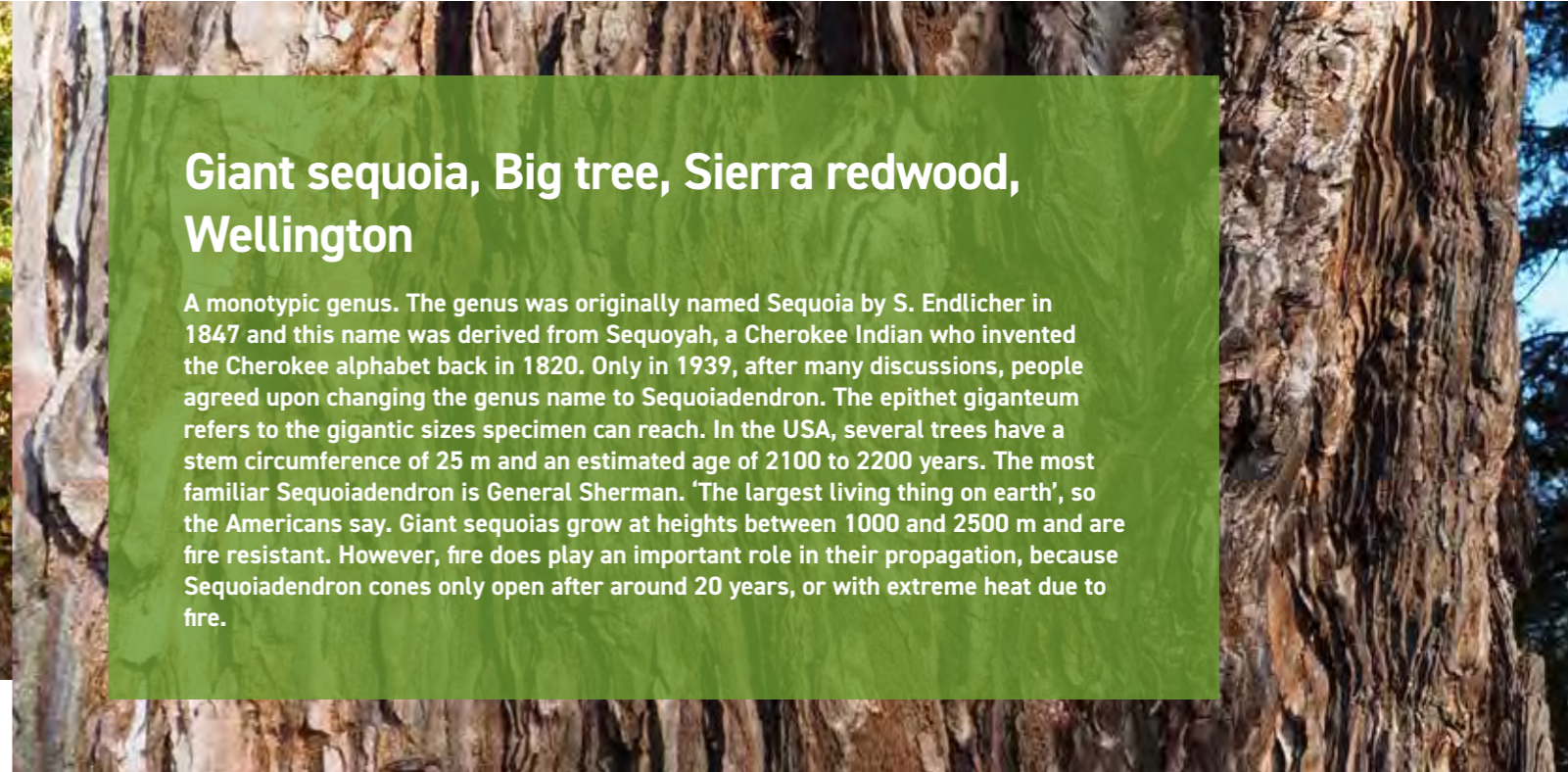
### sempervirens



Origin: North-California, USA. Narrow, pyramidal growth. Height up to 50-60 m in Europe and 100 m in the USA. Fast-growing. Soft, thick, fibrous, orange-brown to dark brown, grooved bark. Dark green, soft needles, 2-2.5 cm in size, arranged in a spiral shape and with 2 white stomata stripes on the underside. Inconspicuous flowering. Ovoid cones, 1.5-3 cm. Grows on all well-drained soils. Wind resistant, also in coastal areas. Does not tolerate pavement. A beautiful, evergreen park tree.

# Sequoiadendron

fam. Taxodiaceae



## Giant sequoia, Big tree, Sierra redwood, Wellington

A monotypic genus. The genus was originally named *Sequoia* by S. Endlicher in 1847 and this name was derived from Sequoyah, a Cherokee Indian who invented the Cherokee alphabet back in 1820. Only in 1939, after many discussions, people agreed upon changing the genus name to *Sequoiadendron*. The epithet *giganteum* refers to the gigantic sizes specimen can reach. In the USA, several trees have a stem circumference of 25 m and an estimated age of 2100 to 2200 years. The most familiar *Sequoiadendron* is General Sherman. 'The largest living thing on earth', so the Americans say. Giant sequoias grow at heights between 1000 and 2500 m and are fire resistant. However, fire does play an important role in their propagation, because *Sequoiadendron* cones only open after around 20 years, or with extreme heat due to fire.

### giganteum



A coniferous tree, bluish-green, with a uniform pyramidal growth. A species that, along with *Sequoia sempervirens*, can reach impressively old ages and enormous dimensions which made them one of the most famous tree species in the world. The tree is indigenous to the Western part of North America. Here, it can reach heights up to a maximum of 100 m. In the Netherlands, it can reach heights up to approximately 35 m with a trunk circumference of approximately 10 m. The reddish-brown bark can endure high temperatures (fire). Beautiful park tree, but requires sufficient growing space.

### giganteum 'Glaucum'



Germany, 1860. Pyramidal growth, 35-40 m high. Brown to red-brown trunk. Grey-blue twigs and scaly needles. Grows on all soils, but preferably not too moist. Good wind resistance. Park tree.



*Sequoiadendron giganteum*

## Rowan tree, Mountain ash

A genus that comprises 95 species. Rowan trees occur in many varieties and they can easily be arranged into groups with pinnately compound leaves and groups with simple leaves. There are also a few intermediate varieties. Rowan trees are apomictic: that is, viable seeds develop without being fertilized and produce seedlings identical to the parent. The natural range of some species is limited. In Hungary, Rowan trees haven been found that are unique in the world and have natural ranges of sometimes no more than a few square kilometres. Many Sorbus trees strongly resemble one another.

### alnifolia var. submollis



Origin: Japan, Central China, Korea. Imported in Europe in 1900. An upright tree with a max. height of 12-15 m. Leaves resemble those of Alder trees. Wide ovate to ovoid, elliptical leaf, max. 6-10 cm long and 2-5 cm wide with a serrated leaf margin. Dark green, densely soft downy pilose on the underside. Apricot-coloured to orange-red autumn colours. Flowers in late spring with 10-12 mm white flowers in upright pilose 5-7.5 cm umbels. Fruits bright red to sometimes deep pink, 6-8 mm in diameter, in September-October. Rare park tree for sheltered, sunny locations on relatively loamy, fertile soils.

### aria Whitebeam



Origin: Central and Southern Europe. Tree with a height up to 15 m and a wide pyramidal crown. Simple leaf, wide ovate, orange-red fruits. Thrives on calcareous soils. Street tree that can also be planted in pavement.

### aria 'Favorit'



Arboretum Budapest, Hungary. One of the most beautiful columnar Sorbus varieties, with a height of 5-7 m. Healthy, dense and shiny green, simple leaves. Blooms in late May with white flowers. Also beautiful because of its red fruits, which nicely contrast with the golden-yellow autumn foliage. Small park tree and garden tree. Also an avenue tree on open green verges.

### aria 'Gigantea'



Jacques Lombarts, Zundert, the Netherlands, 1953. Develops a closed, wide ovate crown. Fast-growing. Height 8-10 m. Has very large leaves. Slightly resembles Sorbus aria 'Majestica' but is a much faster grower. Orange-yellow fruits. Park, avenue and street tree.

### aria 'Lutescens'



Simon-Louis Frères, Metz, France, 1885. Closed conical crown, wide ovoid at a later age. Emerging leaf is silvery-white and somewhat yellowish on both sides, later turning to green on top with a white felty underside. Orange-red fruits. Park tree, can also be used in wider street profiles.

### aria 'Magnifica'



Hesse Baumschulen, Weener, Germany. Very wind resistant tree with a wide ovate crown. Height 8-12 m. In its juvenile stage, it is slender and conical. Large, shiny dark green leaf with a snow-white felty underside. Fruits orangey-red in small, inconspicuous umbels, long remaining. Retains its leaves far into autumn. Excellent street and avenue tree, can also be planted in pavement.

### aria 'Majestica'

(syn. Sorbus aria 'Decaisneana')



France, 1858. Tree with a wide compact conical crown. Height 8-12 m. Once established, it becomes wide ovate and densely branched. Big, dull green leaf, white underside, later turning greenish felty. Excellent street and avenue tree, can also be planted in pavement.

### x arnoldiana 'Golden Wonder'

(syn. Sorbus 'Golden Wonder')



Jacques Lombarts, Zundert, the Netherlands, 1950. One of the so-called Lombarts hybrids. Large, green, pinnate leaves on red petioles. Pyramidal crown, moderately high, 8-10 m, rising growth. Large bunches of big golden-yellow fruits. Specimen tree for parks and public gardens.

### x arnoldiana 'Schouten'

(Sorbus aucuparia x Sorbus discolor)



Brouwers Boomkwekerijen, Groenekan, the Netherlands, 1950. Small tree with a height of 6-8 m, with a closed ovate crown. Pinnately compound leaf. Orangey yellow fruits in thin bunches. Park tree, also suitable as a street tree, but not in pavement.

### aucuparia Rowan tree



Well-known wild Rowan tree, with inclining branches. Once established, it develops a wider and rounder crown, with overhanging twigs because of its heavy fruit bearing. Height 10-15 m. Pinnate leaf, dull green, with an orangey-red autumn colour. Flowers cream-white to off-white in May. Fruits in rich suspending bunches, warm orange-red and eaten by birds. A Rowan tree endures dust, smoke and exhaust gasses reasonably well. Low soil requirements. When young and used as brushwood and in thickets it endures shade. Once established, the tree loves light. Its shape is generally rather variable. As a park tree in groups for forest parks, etc. In addition, this species is used in landscaping as well as understory in forestry and in wooded banks.



Sorbus alnifolia var. submollis



Sorbus aria 'Magnifica'



Sorbus aria 'Majestica'



Sorbus aucuparia



Sorbus aucuparia 'Edulis'



Sorbus aucuparia 'Sheerwater Seedling'

### aucuparia 'Aspleniifolia'

(syn. Sorbus aucuparia 'Laciniata')



Big tree, differs from the species, because of its deeply serrated leaflets. Orange-red to red fruits, long remaining. For parks and gardens.

### aucuparia 'Autumn Spire'®

(syn. Sorbus aucuparia 'Flanrock')



Flannery Nurseries, Staplestow Naas Kildare, Ireland. Upright habit up to 8 m high. Dark green, pinnate leaves. Purple autumn colouring. White umbel-shaped flowers in spring, followed by yellow-orange berries. Grows on all soils.

### aucuparia 'Edulis'

(syn. Sorbus aucuparia 'Dulcis', Sorbus aucuparia 'Moravica')



Späth'sche Baumschulen, Berlin, Germany, 1810. Found in the Altwater Mountains in Moldova. Big tree, with a height up to 15 m, with strong inclining branches. Twigs slightly overhanging at the top, especially during the rich fructification. Crown more regular than is common to the species. Rather open at a later age. Dull green leaf, longer than the species, with larger side leaflets. Slightly big, dark orange-red fruits. Park and avenue tree, as such, it must be planted on open green verges.

### aucuparia 'Fastigiata'



UK, 1838. Slow-growing tree, with a height up to 6 m and very thick branches. Very compact, wide columnar shape. Coarse leaf, dark green. Up to 12 mm large, deep red fruits in compact bunches, remaining on the tree until mid-October. Susceptible to canker, especially on too wet soils. Avenue tree on open green verges. Also for parks and gardens on open, well-drained soils.

### aucuparia 'Fingerprint'®



Boomkwekerij De Martelaer, Zelzate, Belgium, 2010. Shows better growth than 'Fastigiata', nice compact narrow upright habit, 8-10 m high and 4 m wide. White, umbel-shaped flowers, orange-red berries. Canker resistant.

### aucuparia 'Rossica Major'



Späth'sche Baumschulen, Berlin, Germany, 1898. Robust, strongly growing tree with a height of 6-10 m, a wide ovoid crown and rising branches. Deep green leaf with a red petiole and rachis, variable autumn colours. Rather big, deep red fruits from early August to mid-September. Park tree, also used as an avenue tree on wide, open green verges.

### aucuparia 'Sheerwater Seedling'



Jackson, UK, 1950. Named after the Sheerwater river where the mother tree was found. Tree with a closed, narrow ovoid crown, strongly rising, with a height of 8-10 m. Greyish-green leaf. Many orange-red fruits in large bunches, early, from July to early August. Avenue and street tree on open green verges in narrow profiles. Also for parks and gardens. Susceptible to canker on soils that are too wet or compacted.

### aucuparia 'Wettra'



A good, Swedish selection from Sorbus aucuparia that is characterized by its evenly rising branches. Height 10-12 m. Flowers with cream-white flower umbels. Bears bunches of orange red berries in late summer. Yellow and orange-red autumn colouring.

### aucuparia 'Xanthocarpa'

(syn. Sorbus aucuparia 'Dickeana')



UK, 1838. Loose crown without a central leader, 6-10 m high, relatively wide because of its spreading branches. Leaf species-specific. Fruits strikingly orange-yellow from late July to late September. Susceptible to canker on soils that are too wet or compacted. For parks and gardens. Avenue tree on open verges. Hardly cultivated.

### 'Chinese Lace'



Hillier Nurseries, Ampfield, UK, 1973. Columnar growing up to 8-10 m high. A vital tree with an initial dark brown trunk, which later colours more grey-brown. The green, pinnate and deeply incised leaves emerge early and colour from yellow to purple in autumn. White flowers in May-June. Orange-red fruits in umbels. Grows on all soils and is drought resistant. Thrives in full sun and shady locations. Very hardy. Attracts a lot of fauna. Planted as a street and avenue tree, but also suitable for gardens and lawns.

### commixta Japanese rowan



Indigenous to Japan, Korea. Strongly rising growth, closely resembling Sorbus aucuparia. Height up to 10 m. Pinnate leaf. Bright red fruits in full bunches, September to late October. Rather thin, open crown. Very beautiful, warm red autumn colour. Park tree, avenue tree on wide, open green verges.

### commixta 'Belmonte'

(syn. Sorbus americana 'Belmonte')



Belmonte Arboretum, Wageningen, the Netherlands. Moderately tall tree with a compact crown and rising branches, later developing an ovoid crown. Height 8 m. Deep green, pinnate leaf, orange-red autumn colour. Small fruits in large bunches from mid-August to late September. For parks and streets, but always on open verges. Hardly cultivated.



Sorbus aucuparia 'Sheerwater Seedling'



Sorbus aucuparia 'Wettra'

# Sorbus

fam. Rosaceae



Sorbus 'Dodong'



Sorbus 'Dodong'



Sorbus 'Dodong'

## devoniensis 'Theophrasta'



Imported by Koninklijke Boomkwekerijen Pierre Lombarts, Zundert, the Netherlands. Cultivar of a species that is indigenous to Devon and Cornwall, UK. Medium-sized tree, 8-10 m, with a wide loose and round crown. Leaf resembles the leaf of Sorbus aria, elliptical to ovate with a wide wedge-shaped base and pointed top. Rather large orange-red fruits, 15 mm. Attractive park tree. Can also be planted as an avenue and street tree on wide, open green verges because of its wide, relatively low crown. Not cultivated anymore.

## discolor

(syn. Sorbus pekinensis)



Origin: North China. Moderately tall tree, with a height of 10-12 m and a wide very loose, open crown. No central leader. Light green, pinnate leaf, orange-yellow in autumn. Small berries in large bunches, yellowish to orange. Attractive park tree. Can also be planted on wide green verges, but not in pavement. As an avenue tree in loosely grouped plantings.

## 'Dodong'



Ullung Do Island, Korea, 1976. Selection from seeds and named after the harbour of the island Ullung Do. Upright tree. Height 8-10 m, width 3-4 m. Blooms in May with large white flowers in clusters and then produces orange-red berries. The pinnate leaf emerges purple then becomes a shiny light green. In autumn, orange to fiery red colours. Requires well-drained nutritious soil. Hardy.

## domestica Service tree



Forms an ovoid to spherical crown. Height 12-14 m. Has odd-pinnate, dark green leaves approximately 20 cm long. The leaves are somewhat felty on the underside and have a finely serrated leaf margin. Turns from yellow to orange in autumn. The white flowers in hairy umbels appear at the end of May. The yellow-green, apple-shaped 2.5-3 cm fruits turn red in full sun. Canker sensitive. Grows on all soils. For small gardens.

## folgneri



Origin: Central China. Small tree, with a height up to 8 m and a wide crown because of its slender decorative overhanging twigs. Simple leaf, dark green and pilose, white felty on the underside. Ovate, red fruits in wide, felty pilose bunches. Specimen tree for parks, public gardens and wide green verges. Hardly cultivated.

## folgneri 'Emiel'



Dirk Benoit, Boomkwekerij Pavia, Deerlijk, Belgium, 2000. Height up to 10 m with a round crown. Overhanging branches. Dark green, narrow ovate to elongated leaves, 5-10 cm and with grey-white hairs on the underside. In autumn, nuances of orange and red. In May, many white flowers in large umbels appear. Oval red berries in August-September. Very healthy and hardy tree. Grows on all well-drained soils. Does not tolerate pavement. For wide and open street profiles.

# Sorbus

fam. Rosaceae

## hupehensis 'November Pink'



H.J. Grootendorst, Boskoop, the Netherlands, 1963. Height 8-9 m with an upright, loose and oval crown. Grey-green foliage with a purple-red autumn colouring. Flowers white. The berries colour from pink-white with small dots to a smooth light pink. Grows on all soils, preferably not too moist. Endures pavement. Garden, street and avenue tree.

## hybrida 'Gibbsii'



Vicary Gibbs of Aldenham, Aldenham, UK, 1924. Small tree with a height of 6-8 m and a wide closed crown and inclining branches. Leaf 12-15 cm long, the upper half is lobed, the bottom half is pinnate with 1-2 pairs of separate side leaflets at the base. Relatively big, shiny deep red fruits in moderately large bunches. Healthy park tree. Also suitable as a street and avenue tree in wider profiles. Endures pavement reasonably well.

## x incana



Probably a hybrid of Sorbus aria and Sorbus torminalis. Develops into a small narrow tree shape with an upright centre branch and eventually a pyramidal crown. Height up to 7 m, crown width no more than 3 m. Greyish-green, simple leaf with a red autumn colour. Must be grafted on Sorbus intermedia. Blooms with white bunches. A tree with great potential as a small park tree for gardens and as an avenue tree on open green verges.

## intermedia Swedish whitebeam



Indigenous to Southern Scandinavia. Medium-sized tree with a height of 8-10 m and a wide crown and irregular, horizontally spreading branches. Simple, 6-10 cm long leaf, ovate, slightly pinnately lobed. Dark green on top, greyish felty on the underside. Orange-red to deep red fruits, ovate, 15 mm, in small bunches. Very good and wind resistant avenue and street tree, especially on calcareous soils. Endures pavement and urban air pollution well.

## intermedia 'Brouwers'



Brouwers Boomkwekerijen, Groenekam, the Netherlands, 1956. A selection of the species with a straight trunk and a more regular crown shape. Height 10-12 m. Foliage and fruits species-specific, but flowers less profusely and therefore bears less fruits. Excellent avenue and street tree.

## 'Joseph Rock'

(syn. Sorbus aucuparia 'Joseph Rock', Sorbus rehderiana 'Joseph Rock')



Joseph Rock (1884-1962) collected seeds in the Yundshi mountains North-West from Yunnan in China in 1932. Small, rising tree, height 8 m, compact pyramidal crown. The pinnate leaf slightly resembles the leaf of Sorbus commixta. In autumn, magenta to orange-red colours. Flowers white. The fruits are initially cream-coloured, and do not reach their full and deeper amber-yellow hue until October. The fruits remain on the tree until December. Public gardens, parks and private gardens. Does not tolerate pavement.



Sorbus domestica



Sorbus folgneri 'Emiel'



Sorbus intermedia 'Brouwers'



Sorbus intermedia 'Brouwers'



Sorbus 'Joseph Rock'

### latifolia 'Atrovirens'



Hesse Baumschulen, Weener, Germany, 1869. The species is indigenous to Central Europe. In the Netherlands, the 'Atrovirens' cultivar is usually grown. Small to medium-sized tree, with a height of 8-10 m. Closed, wide conical crown and short, horizontally spreading branches. Simple, 7-10 cm long leaf, leathery, shiny dark green, greyish felted on the underside. Fruits yellow-orange to brown-orange in small bunches. Strong tree that endures a lot of wind. Grows well in pavement. Excellent avenue and street tree.

### latifolia 'Henk Vink'



Brouwers Boomkwekerijen, Groenekan, the Netherlands, 1965. Fast grower with a narrow pyramidal crown, 8-12 m high. Leaf lighter green on top and wider and more serrated than Sorbus latifolia 'Atrovirens'. Small, round brown-red to orangey-yellow fruits. Good avenue and street tree, also in pavement.

### 'Sunshine'



Hillier Nurseries, Ampfield, UK, 1968. A seedling from 'Joseph Rock'. Develops into a small, rising tree shape, but becomes fuller and rounder when mature. Height 4-5 m. Dark green pinnate leaf and a red-orange autumn colouring with purple hues. White flowers in May. A striking tree because of its bright yellow fruits from mid to late summer. For public gardens, parks and private gardens. Hardly cultivated.

### thibetica 'John Mitchell'

(syn. Sorbus 'Mitchellii')



Frank Kingdom-Ward (1885-1958). An English botanist who named this tree in 1934 after William John Mitchell (1876-1965), the first curator of the Westonbirt National Arboretum, Tetbury, Gloucester, UK, where the mother tree still stands. Medium-sized tree with a rather wide round crown. Descends from Sorbus cuspidata. Rather big, dark green leaf, ovoid-round (like Sorbus aria) with a silvery-white underside. Flowers with 7-10 cm white umbels and bears 15 mm brown fruits in October. Beautiful street and avenue tree for wide profiles. Tolerates pavement. Hardly cultivated.

### x thuringiaca

(Sorbus aria x Sorbus aucuparia)



Thüringen, Germany, 1803. Indigenous to Central Europe. Tree with a conical to narrow ovate crown, 10 m high. Leaf pinnate at the base, the upper half is lobed. Street tree.

### x thuringiaca 'Fastigiata'

(syn. Sorbus x thuringiaca 'Quercifolia')



UK, 1907. Initially a narrow conical, upright tree, later developing a wide conical to almost ovate crown. Height up to 8 m. Compact, closed crown with dense foliage. The leaf is relatively large, simple and partly pinnate, with several loose leaflets at the leaf base. Rather big, bright red fruits, very profusely growing in dense large bunches from mid-August to late October. Develops many water sprouts after pruning. Good street tree in wind-sheltered locations, also in pavement.

### torminalis Wild service tree, Checker tree



Grows ovate, dome-shaped at a later stage. 20-25 m high. Leaves 6-10 cm long, which turn from yellow to red and purple in autumn. The white flowers with 5 petals and yellow anthers appear in umbels in early spring. The fruits are green-brown to brown. The berries have a sour taste. The pulp is used to relieve stomach pain, the seeds are not edible. As a park and specimen tree.

### vilmorinii



Maurice de Vilmorin (1849-1918), Paris, France, 1889. Origin: Western China. Generally a loose shrub, but also cultivated on a standard as a park tree with a loose crown and weak overhanging branches. Height up to 6 m. Pinnate leaf with numerous small side leaflets. Orange-red autumn colour. Small, lilac pink fruits in thin bunches up to late September. For parks and gardens.



Sorbus torminalis



Sorbus torminalis

# Staphylea

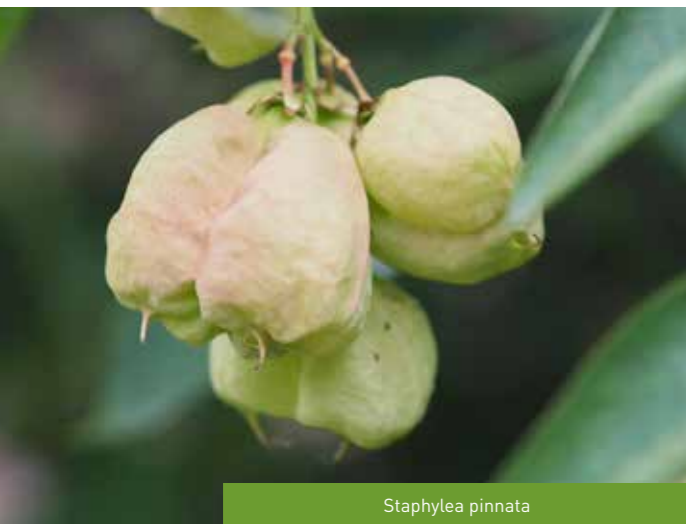
fam. Staphyleaceae

# Stewartia

fam. Theaceae

## Bladdernut

A genus that comprises 11 species appearing as shrubs or small trees. Occurring in moderate regions of the Northern Hemisphere. In our region, the most planted Bladdernut species is *Staphylea pinnata*. Because the fruits of *Staphylea* show a striking resemblance to a scrotum, its common name often refers hereto in various languages. In Belgium, the Flemish common name (*Paternosterbollekesboom*) has a more symbolic meaning and refers to rosaries (*paternoster*) in which bladdernut seeds were used in the past.



*Staphylea pinnata*



*Staphylea pinnata*

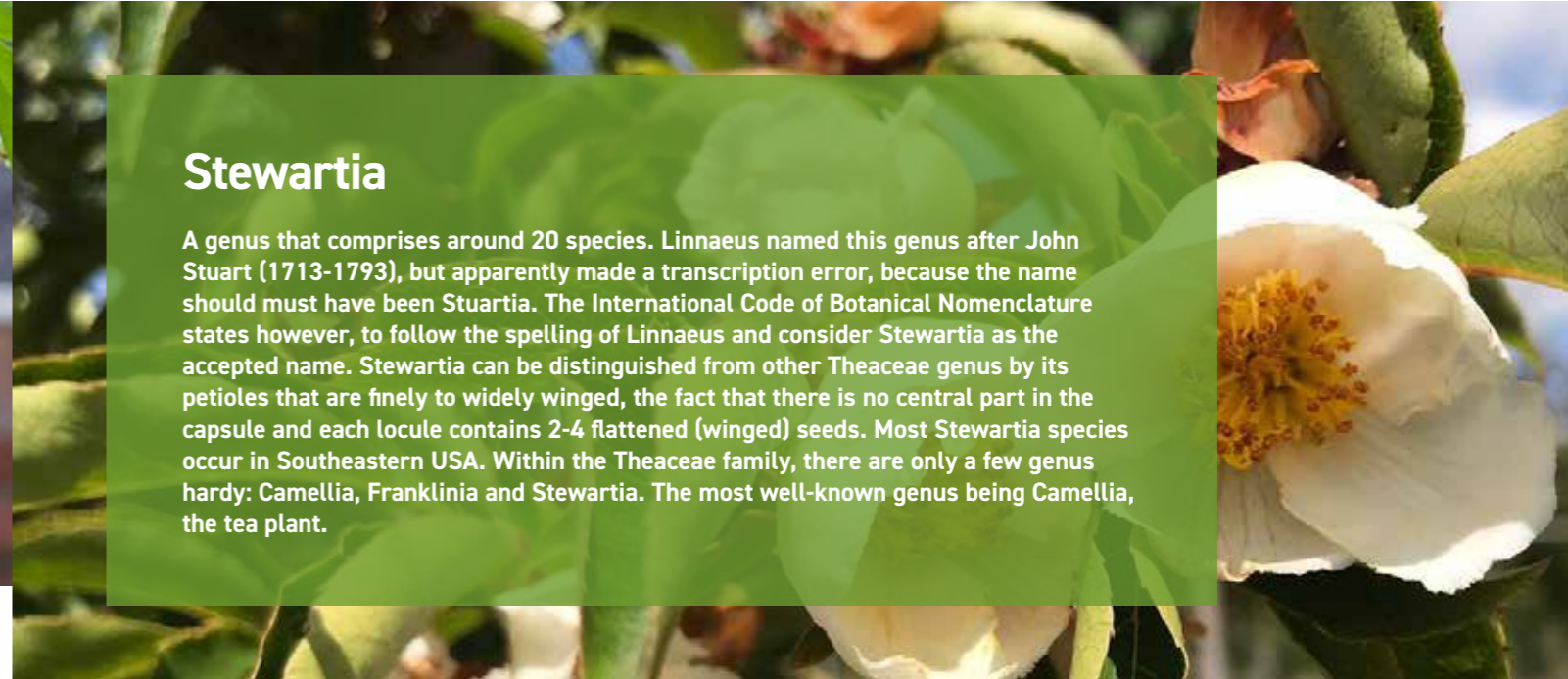
### pinnata



Origin: Mediterranean Area up to Central Europe. Shrub or small tree. Olive-green twigs and compound, pinnate leaves with 5-7 ovate-oblong leaflets with a serrated leaf margin. Yellow to orange-red autumn colouring. In May, white flowers with a pink hue in suspending panicles appear. Ornamental cream-white, bladder-shaped capsules with a pink hue that contain round seeds. Grows on all soils. Best planted as a specimen tree / shrub.

## Stewartia

A genus that comprises around 20 species. Linnaeus named this genus after John Stuart (1713-1793), but apparently made a transcription error, because the name should must have been *Stuartia*. The International Code of Botanical Nomenclature states however, to follow the spelling of Linnaeus and consider *Stewartia* as the accepted name. *Stewartia* can be distinguished from other Theaceae genus by its petioles that are finely to widely winged, the fact that there is no central part in the capsule and each locule contains 2-4 flattened (winged) seeds. Most *Stewartia* species occur in Southeastern USA. Within the Theaceae family, there are only a few genus hardy: *Camellia*, *Franklinia* and *Stewartia*. The most well-known genus being *Camellia*, the tea plant.



### pseudocamellia Japanese stewartia



Origin: Japan. Imported in Europe in 1860. Small tree or large shrub with pyramidal to ovate growth. Visually attractive throughout the year. White *Camellia*-like flowers in summer. Beautiful autumn colouring from yellow to red to dark reddish-purple. Peeling bark in greyish-orange to brown colours. Use as a specimen tree / shrub in full sun or partial shade. Young plants need to be protected against heavy frosts.

### rostrata Beaked stewartia



Originating from East China. Shrub or tree up to 10 m high. Oval to elliptical shaped leaves, 5-8 cm in size. Yellow to orange-red autumn colouring. White, cup-shaped 4-5 cm, fragrant flowers. Has a slightly grooved trunk. The seed capsules contain 4 seeds per locule. Requires nutritious, well-drained soil. Quite hardy. Plant in (partial) shade.



*Stewartia pseudocamellia*



*Stewartia pseudocamellia*

# Styphnolobium

fam. Fabaceae

## Pagoda tree

A monotypic genus, formerly known as *Sophora*. Recent studies based on chromosome numbers as well as morphological and cytological differences, concluded that *Styphnolobium* should be interpreted as a separate genus. For example, this becomes clear in the fact that *Styphnolobium* does not form root nodules, which means there is no symbiotic relationship with nitrogen-fixing bacteria (rhizobia). The generic name is derived from the Greek words: *stuphnos*, sour, astringent and *lobion*, pod. Together with the *Pickeringia* genus, *Styphnolobium* appears to be closely related to *Cladrastis*.

**japonicum** Japanese pagoda tree, Chinese scholar tree  
(syn. *Sophora japonica*)



Indigenous to China, Korea. Imported in Europe in 1750. Tall tree with a height of 12-16 m and a wide rounded crown. Usually a crooked trunk, strongly forked in the top. The bark is greyish-brown and has longitudinal grooves. The young branches are bare and dark green with lenticels. Pinnate, dark green leaf. Flowers in August with terminal, 25 cm long loose and wide panicles, yellowish-white and very high in pollen. Up to 8 cm long fruits and grey, husked pods. Requires loose, fertile and calcareous, loamy soil in a warm, sunny location. Beautiful park tree. Under perfect soil conditions and similar location factors also on wide, open green verges in wind-sheltered lanes. Also suitable as an avenue tree.

**japonicum 'Columnaris'**



France, 1907. Not cultivated for some time. A slow and columnar growing tree with upright branches. Park and specimen tree; can also be used as an avenue tree in narrower street profiles.

**japonicum 'Fastigiata'**



Upright dense crown. Blue-green pinnately compound leaves with ovoid leaflets, grey-green underside. Yellow autumn colouring. Suspending, fragrant, cream-white flowers in panicles in August-September. Rarely bears fruit. The pods are poisonous. Grey-brown grooved trunk. Grows on all nutritious soils, both dry and wet. Sun and partial shade. Tolerates road salt and can be planted in pavement.

*Styphnolobium japonicum*

*Styphnolobium japonicum*

*Styphnolobium japonicum*



# Styphnolobium

fam. Fabaceae



Styphnolobium japonicum



Styphnolobium japonicum



Styphnolobium japonicum 'Regent'

## japonicum 'Fleright'

(syn. *Styphnolobium japonicum* 'Princeton Upright')



Princeton Nurseries, Kingston, New Jersey, USA, 1985. Develops a rather compact, rising, ovate to ovoid crown. Height 12-15 m, width 7-9 m. Leaves species-specific, shiny deep green. Yellow autumn colour. Flowers species-specific, but at a younger age. Less wide than the species and, as a result, a good avenue and street tree for street profiles that are not too narrow. Same soil requirements that apply to the species. For sunny and sheltered locations.

## japonicum 'Golden Standard'

(syn. *Styphnolobium japonicum* 'China Gold')



Changyi Qilu Flower and Tree development, Shandong, China, 2000. Open, round crown, capricious growth and a final height of 8-10 m. Grey-brown grooved trunk with golden-yellow twigs. Green-yellow, odd-pinnate, 20-25 cm long leaves. Flowers with cream-white panicles. Long and grey legumes. Grows on all soils that are not too acidic. Tolerates pavement and salt. Moderately wind resistant and good resistance to pollution. Garden, park and avenue tree.

## japonicum 'Harry van Haaren'



Research Institute for Forestry and Landscape 'De Dorschkamp', Wageningen, the Netherlands, 1986. Selected in Maastricht from an approximately 100-year-old Japanese pagoda tree. The mother tree stood out because of its big, regularly shaped, wide and high crown. Reaches heights up to 20 m and similar widths. Heavy, greyish-brown trunk and sulphur-yellow foliage. Flowers profusely and in August it is fully covered in numerous large cream-white flower panicles. Beautiful park tree. Hardly cultivated.

## japonicum 'Pendula'



Loddiges Botanical Garden, Hackney, UK, 1827. Often a grafted, ornamental weeping variety. Crown with short twisting and spreading scaffold branches and perpendicularly hanging branches and twigs, almost plunging towards the ground. Height 4-6 m. Narrow dome-shaped habit. For parks and gardens.

## japonicum 'Regent'



Princeton Nurseries, Kingston, New Jersey, USA, 1964. Tree with a robust straight trunk, 10-12 m high. Ovate, 4-5 m wide round crown. Grows faster and its shiny dark green leaf is larger than the species. Species-specific flowering in August, very profusely. Suitable as an avenue and street tree because of the limited crown dimensions. Requires very humus-rich soils.

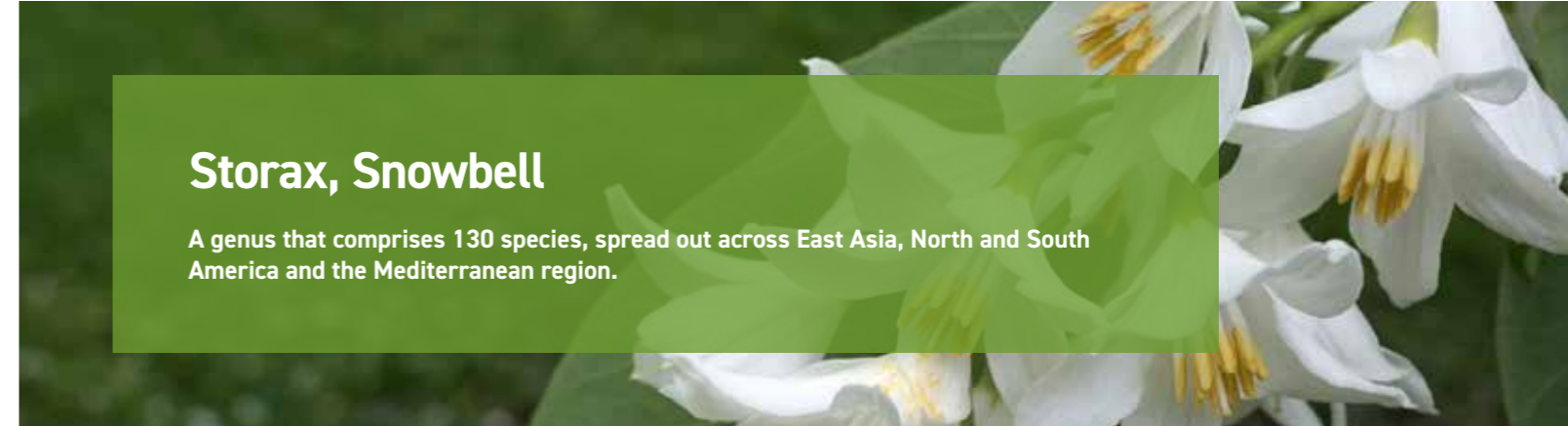
## japonicum 'Variegata'



Variety with odd-pinnate, green leaves with cream-white spots and dots. However, much slower growth compared to the species. Hardly cultivated.

# Styrax

fam. Styracaceae



## Storax, Snowbell

A genus that comprises 130 species, spread out across East Asia, North and South America and the Mediterranean region.

## japonicus Japanese snowbell



Origin: China and Japan. Imported in Europe in 1862. Height 8-10 m. Beautifully branched crown with thin twigs, initially greyish felty and star-shaped pilose. 4-8 cm large wide ovate to round, elliptical leaf, large and fresh green. Flowers in June-July, with rather short, suspending (bell-shaped) white, fragrant flower bunches in twos and fours. Requires a sheltered and sunny location on nutritious soils. Specimen tree or a particularly beautiful tree for parks and gardens.

## japonicus 'June Snow'®



Chris van der Wurff, Heeze, the Netherlands, 1995. A selection that grows narrow pyramidal, 8-10 m high, 2-3 m wide. Narrow, dark green, lanceolate leaves, 5-10 cm long. In June-July, the slightly fragrant, suspending flowers with yellow anthers appear in abundance. They are white, bell-shaped, 2-3 cm in size and appear per 3-6 together. After flowering, ovoid drupes appear which turn from green to brown. For sun and partial shade. Requires moist and humus-rich soils.

## obassia Fragrant snowbell



Native to China, Korea and Japan. Imported in Europe in 1860. Forms a pyramidal to ovoid crown. Height 14-15 m, width 13-15 m. Simple, wide almost round leaves, 17-15 cm. Foliage is dark green on top and has a greyish underside covered with star-shaped hairs. Grey-brown trunk with small superficial cracks. Pleasantly fragrant, white, 5-lobed bell-shaped flowers in clusters up to 20 cm long. Small, drop-shaped, grey-haired fruits. Turns from yellow to brown in autumn. Very hardy. As a specimen in gardens and parks.



Styrax japonicus



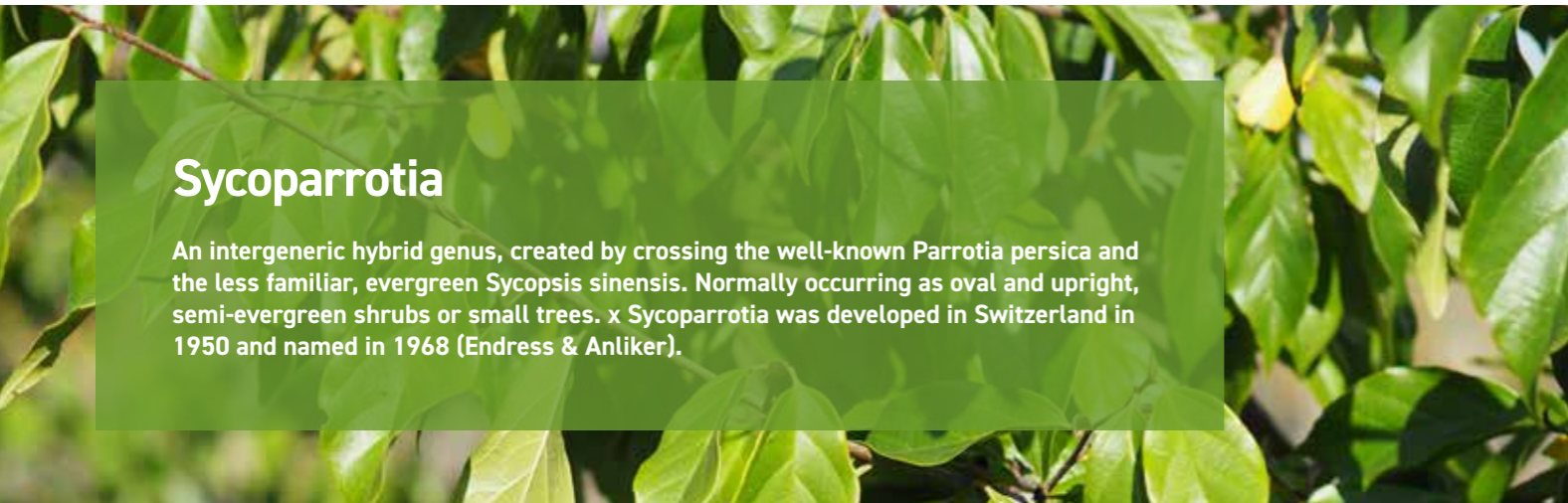
Styrax obassia



Styrax obassia

# x Sycoparrotia

fam. Hamamelidaceae



## Sycoparrotia

An intergeneric hybrid genus, created by crossing the well-known *Parrotia persica* and the less familiar, evergreen *Sycopsis sinensis*. Normally occurring as oval and upright, semi-evergreen shrubs or small trees. x *Sycoparrotia* was developed in Switzerland in 1950 and named in 1968 (Endress & Anliker).



x *Sycoparrotia semidecidua* 'Prins Claus'

x *Sycoparrotia semidecidua* 'Prins Claus'

### semidecidua



The 8 cm long, glossy green leaves are semi-evergreen and turn yellow-red in autumn. Blooms in February-March with chocolate-brown clusters of small flowers with prominent red anthers. Grey trunk. Preferably grows in sun to partial shade on acidic to neutral and well-drained soils.

### semidecidua 'Prins Claus'®



Piet van der Bom, the Netherlands. Cultivar named after Prins Claus of the Netherlands. Very healthy, slow-growing cultivar. Leaf falls late, February-March. Very hardy. Flowers before the leaf emerges. Requires moist soils with good water management. Tolerates pavement. Resistant to air pollution.

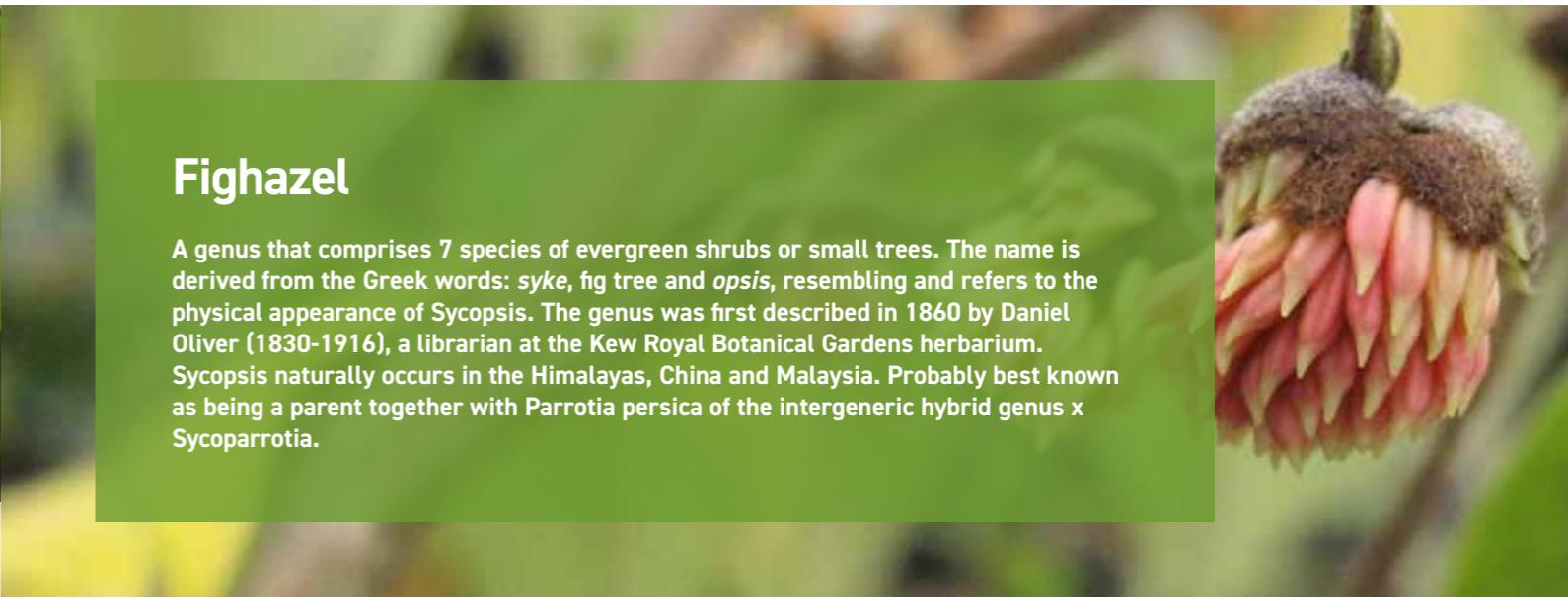
### semidecidua 'Purple Haze'®



Boomkwekerij Arborealis, Wilhelminaoord, the Netherlands. Same characteristics as the hybrid species. Selection with a striking purple-red autumn colouring.

# Sycopsis

fam. Hamamelidaceae



## Fighazel

A genus that comprises 7 species of evergreen shrubs or small trees. The name is derived from the Greek words: *syke*, fig tree and *opsis*, resembling and refers to the physical appearance of *Sycopsis*. The genus was first described in 1860 by Daniel Oliver (1830-1916), a librarian at the Kew Royal Botanical Gardens herbarium. *Sycopsis* naturally occurs in the Himalayas, China and Malaysia. Probably best known as being a parent together with *Parrotia persica* of the intergeneric hybrid genus x *Sycoparrotia*.

### sinensis



Shrub or small tree up to 4-6 m high. Leathery, oval leaves with a dark green top and a paler underside. Yellow autumn colouring. Delicate, yellow flowers grouped in clusters appear early in spring. Grows on all soils, but does not tolerate heavy and wet soils. Hardy at temperatures up to -15° Celsius. For private gardens and public gardens.



*Sycopsis sinensis*

*Sycopsis sinensis*

# Syringa

fam. Oleaceae

## Lilac tree

A genus that comprises around 20 species of deciduous shrubs or small trees. Syringa is named after the Greek nymph *Syrinx*, who transformed herself into a hollow water reed (like Syringa stems) in order to escape from the advances of Pan, God of the shepherds. Already in 1500, Lilacs were imported in France where they received the name 'French Hybrid'. After 1850, various species were being crossed worldwide and in 1900, already 300 cultivars were available. Nowadays, more than 4000 cultivars are being marketed. Syringa is very strong, endures both extreme drought and heat as well as cold temperatures. Its very fragrant flowers are also edible. After they appear for the first time, they can be used in salads, desserts, tea or as garnish.



### josikaea Hungarian lilac



Occurring in central and eastern Europe, the Carpathians, in Hungary, Romania and western Ukraine. Shrub or tree up to 5 m high, vase-shaped growth. Elliptical, opposite, wide oval and pointed glossy leaves, 6-12 cm long, finely haired petiole. Turns from yellow to bronze-red in autumn. Dark pink, tubular, 15 mm, very fragrant flowers in cylindrical umbels in May-June. The fruits are brown capsules that open when ripe and then release the winged seeds. For sun and partial shade. Does not tolerate paving. Very hardy.

### pekinensis 'Beijing Gold'®

(syn. *Syringa pekinensis* 'Zhang Zhiming')



Zhang Zhiming, Botanical Garden Beijing, China. Shrub or small tree. Height 5-6 m, width 4-5 m. Cinnamon coloured trunk. Bright green leaves. Yellow flowers in 10-15 cm long bunches. A selection that requires well-drained soil, sun or partial shade. For small gardens or narrow streets. Very hardy.

### reticulata 'Ivory Silk' Japanese lilac tree



Leonard K. Slater, Agincourt, Ontario, Canada, 1973. Introduced by Sheridan Nurseries, Toronto, Canada. Forms a wide oval-shaped crown. Height 10 m. The peeling bark is characteristic for the reticulata species. Bright green leaves, 12 cm long and 6 cm wide. Has cream-white intensely fragrant flowers in clusters that are 12-16 cm long. Mildew resistant. Grows on all soils. Use as a specimen.

*Syringa pekinensis* 'Beijing Gold'

# Syringa

fam. Oleaceae

### tomentella



Discovered in the Chinese province of Sichuan in 1905. Naturally a shrub, it has recently been cultivated as a small tree shape as well. Has 8-10 cm long elliptical, dark green, tapering leaves with a slightly hairy underside. Light lilac pink to almost white flower panicles in June, which give off a strong honey scent. Capsules of 1-2 cm that are smooth, elongated and tapering. Thrives on well-drained, slightly neutral to acidic soils. For narrow streets.

### vulgaris 'Président Grévy'



France, 1886. Was named after the French President François Grévy (1807-1891). A selection with an upright growth, later somewhat oval, 3.5-4 m high and 2-2.5 m wide. Light green, smooth-edged, cordate leaves. Very large, lavender blue flowers in conical cylinders in late spring. Very fragrant. Brown and pointy, box-shaped fruits appear in August. It blooms more abundantly in a location with direct sun, than in partial shade. Grows on all well-drained soils. Attracts many butterflies and bees. Very hardy and resistant to pollution. Tolerates onshore winds.



*Syringa reticulata* 'Ivory Silk'



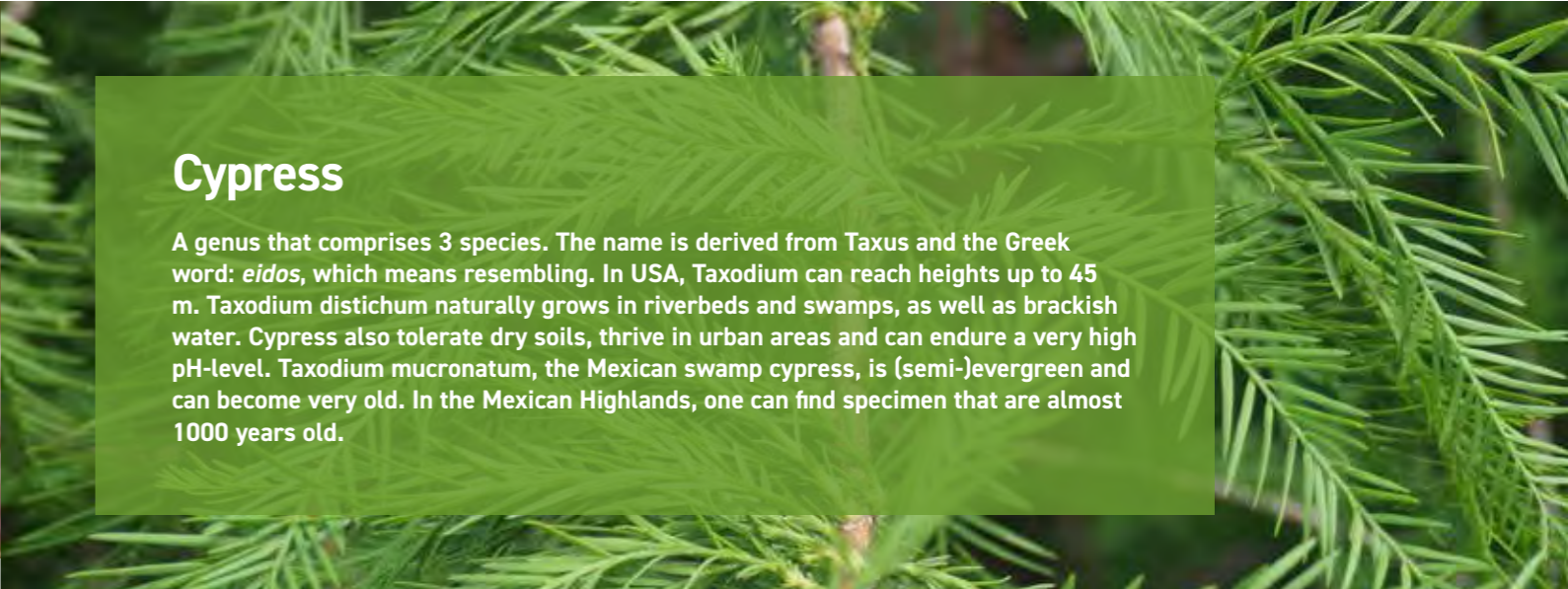
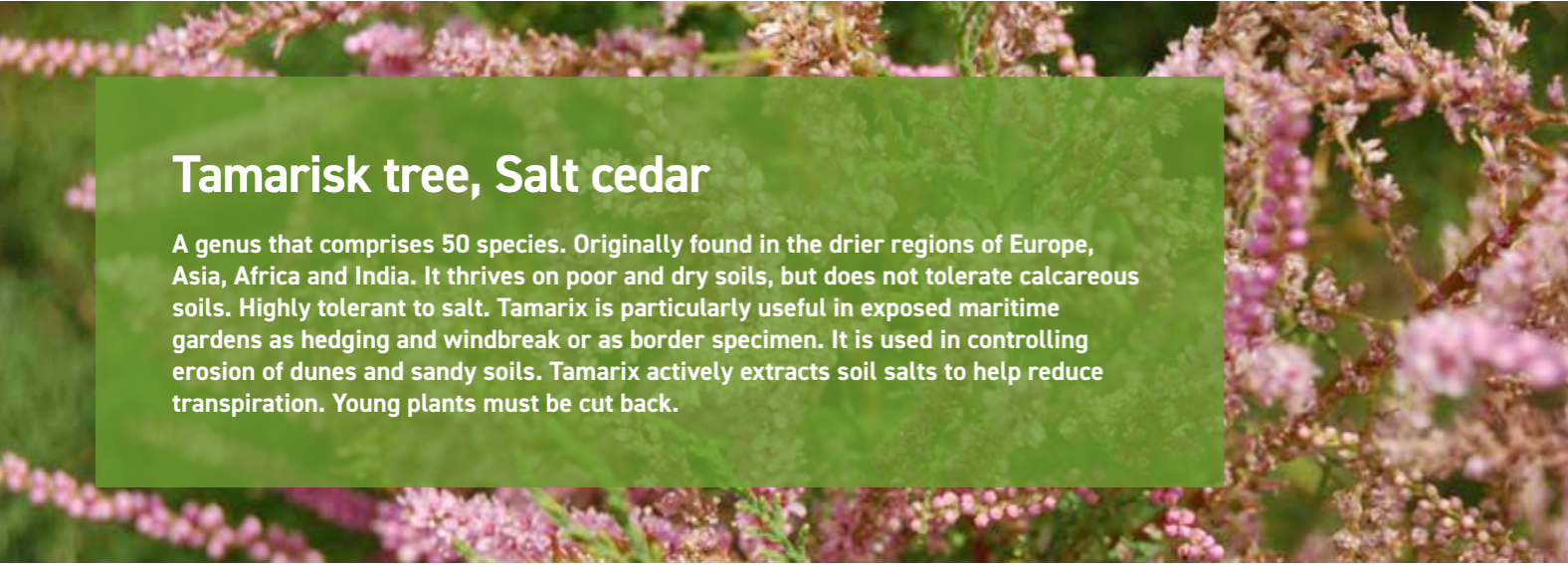
*Syringa vulgaris* 'Président Grévy'

# Tamarix

fam. Tamaricaceae

# Taxodium

fam. Cupressaceae



## Tamarisk tree, Salt cedar

A genus that comprises 50 species. Originally found in the drier regions of Europe, Asia, Africa and India. It thrives on poor and dry soils, but does not tolerate calcareous soils. Highly tolerant to salt. Tamarix is particularly useful in exposed maritime gardens as hedging and windbreak or as border specimen. It is used in controlling erosion of dunes and sandy soils. Tamarix actively extracts soil salts to help reduce transpiration. Young plants must be cut back.

## Cypress

A genus that comprises 3 species. The name is derived from *Taxus* and the Greek word: *eidos*, which means resembling. In USA, *Taxodium* can reach heights up to 45 m. *Taxodium distichum* naturally grows in riverbeds and swamps, as well as brackish water. Cypress also tolerate dry soils, thrive in urban areas and can endure a very high pH-level. *Taxodium mucronatum*, the Mexican swamp cypress, is (semi-)evergreen and can become very old. In the Mexican Highlands, one can find specimen that are almost 1000 years old.



Tamarix gallica

### gallica French tamarix



Forms a round to flabellate crown. Height 6-8 m. Lightly grooved brown bark. Scale-like leaves, triangular-shaped, 1-2 cm long with a blue-green colour. Pale pink flowers in bunches from June to August. Street and avenue tree. Excellent tree for coastal areas. Tolerates road salt.

### ramosissima 'Pink Cascade'



Jackman Nursery, Surrey, UK, 1954. Shrub or small tree, 3-4 m high, with a loose, vase-shaped crown and suspending branches. Strongly branched. Narrow, blue-green, scale-like, lanceolate to oval leaves. Yellow autumn colouring. From June to August, numerous, small, bright pink flowers in large suspending panicles. Grows on all soils, if not calcareous. Thrives in full sun and is highly resistant to salt and wind, making it suitable for coastal areas. Tolerates air pollution. Very appropriate for small gardens.

### tetrandra



Shrub or small tree, 3-4 m high, with a loose, vase-shaped crown and suspending branches. Narrow, bright green, scale-like, ovoid leaves with a shiny leaf edge. Yellow autumn colouring. From April to June, small, light pink flowers with 4 anthers (hence the epithet tetrandra) in long, fine, bunches. Grows on all soils, if not calcareous. Thrives in full sun and is highly resistant to salt and wind, making it suitable for coastal areas. Tolerates air pollution. Very suitable for small gardens.



Tamarix tetrandra

### distichum Bald cypress, Swamp cypress



Origin: North America. Deciduous conifer with a narrow pyramidal crown, however in the homeland, often wide dome-shaped once established. Can reach heights up to 35-40 m, in the Netherlands substantially less high, up to 20 m. Thin, bright green needles, which are unlike *Metasequoia*, not oppositely arranged. Auburn autumn colour. In the Netherlands, an attractive specimen tree for parks and estates. Monoecious tree with oval, green cones that turn brown when mature. Preferably for waterside plantings. Quite often, Cypress trees will develop capricious, so-called cypress knees. Sometimes planted as a forest in Southern Europe.

### distichum 'Cascade Falls'



Noeline & David Sampson, Cedar Lodge Nursery, New Plymouth, New Zealand, 1999; found in Auckland. Weeping variety, 3-5 m high. Yellow-green to red-brown twigs. Fibred, grooved, brown bark. Deciduous. Light green needles. Orange-red autumn colouring. Grows on all soil types, even very moist soils. Very hardy. Garden and park tree.

### distichum 'Nutans'

(syn. *Taxodium ascendens* 'Nutans', *Taxodium distichum* var. *imbricarium*)



Pyramidal crown and straight growth like the species. However, it is not as tall, with heights up to 12-15 m, and stays substantially narrower. Rarely develops cypress knees. Needles species-specific in length or slightly shorter, 9 mm long, thin and punch-shaped, lying closely to the rachis. This slow-growing variety has the same deeply furrowed bark as *Taxodium distichum*. Differs from the species because of its narrow shape and the slender more or less hanging twigs, which often accumulate at the twig ends. Cones are species-specific. Beautiful park tree for waterside planting, or on very moist, humus-rich and loose soils. Hardly cultivated.



Taxodium distichum

# Taxodium

fam. Cupressaceae



Taxodium distichum



Taxodium distichum 'Nutans'



Taxodium distichum 'Shawnee Brave'

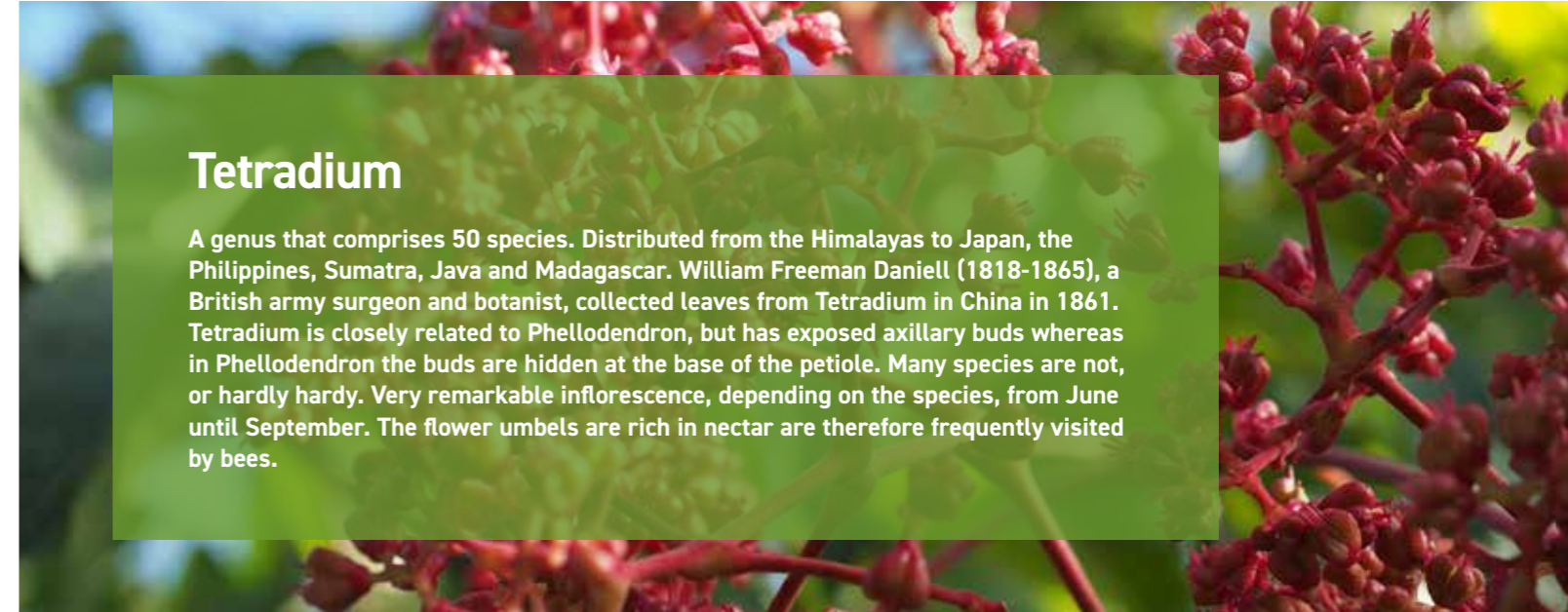
## distichum 'Shawnee Brave'



Earl Cully, Heritage Trees, Southern Illinois, USA, 1964. A narrow, pyramidal-growing variety. Height up to 15-25 m, width 6-9 m. Leaf species-specific, but much fuller. Deciduous. Dark reddish-purple brown seed husks, highly decorative in autumn. Bronze-brown autumn colouring. No specific soil requirements and thrives on moist soils.

# Tetradium

fam. Rutaceae



## Tetradium

A genus that comprises 50 species. Distributed from the Himalayas to Japan, the Philippines, Sumatra, Java and Madagascar. William Freeman Daniell (1818-1865), a British army surgeon and botanist, collected leaves from Tetradium in China in 1861. Tetradium is closely related to Phellodendron, but has exposed axillary buds whereas in Phellodendron the buds are hidden at the base of the petiole. Many species are not, or hardly hardy. Very remarkable inflorescence, depending on the species, from June until September. The flower umbels are rich in nectar and are therefore frequently visited by bees.

## daniellii Bee-bee tree, Korean Evodia (syn. Euodia daniellii, Euodia velutina)



Shrub or tree from North China and Korea. Imported in Europe in 1907. Up to 20 m high with a wide flabellate crown. Pinnate leaves up to 45 cm with 5-9 leaflets, which are 18 x 10 cm in size. Matte to slightly glossy, dark olive-green leaves, yellow autumn colouring. Olive-green twigs, grey haired. Smooth, grey bark. In July-August, white flowers in wide upright corymbs. Red fruits 0.8-1 cm in size. Requires well-drained, humus-rich soils. Very valuable tree for bees and butterflies. Not suitable for paving.

## daniellii var. hupehensis (syn. Euodia hupehensis)



Central China: Anwei and Hupeh province. Imported in Europe in 1909. Tall tree with a height up to 20 m that slightly resembles Phellodendron. Imparipinnate leaf with 7-9 leaflets, bright green. Flowers in June with small cream-coloured flowers in wide pyramidal, finely pilose panicles. Develops reddish-purple to black fruits after flowering. Exclusive park tree.



Tetradium daniellii



Tetradium daniellii



Tetradium daniellii var. hupehensis



## Linden tree, Lime tree

A genus that comprises 45 species. Linden trees have been planted all across our country. Generally, they are tall trees with majestic crowns in the 1st size category. Several species are also indigenous to the Netherlands. Linden trees are characterized by their good anchoring, relatively fast growth and wind-breaking capacity. Their soil requirements are not particularly high. Tilia flowers best on heavy loamy and fertile sandy soils that are moderately moist. Because they endure urban air pollution relatively well and can be planted in pavement, they are considered good avenue and street trees.



Tilia americana 'Redmond'

### americana American lime



Origin: Central and Eastern parts of North America. Imported in Europe in 1752. Very tall tree, 25-30 m high, with a wide and loose crown. Good, straight trunk. Heavily pruned trees sometimes suffer from trunks that 'split open' on the sunny side. Large, dark green leaf. Requires open, damp soil. In the Netherlands, usually only planted as a park tree. Blooms with large, bright yellow flowers in suspending bunches of 5-8 flowers.

### americana 'Continental Appeal'



Willett Wandell, Wandell's Nursery Inc., Urbana, Illinois, USA, 1975. A strongly growing selection of Tilia americana subsp. heterophylla with a rising compact crown. Height 15-20 m. Healthy, dark green leaves throughout the season. Turns greenish-yellow in autumn. Small, fragrant, white flowers in June-July. Very valuable for bees. Beautiful park or avenue tree for wide profiles.

### americana 'Nova'



Hesse Baumschulen, Weener, Germany, 1955. Tall tree, 20-25 m high, with a wide, loose, more or less ovoid crown. Very large, dark green leaf, 10-20 cm long, with an oblique cordate leaf base. Blooms with large, light yellow flowers in suspending bunches. Mostly used as a park tree, sometimes on squares.

### americana 'Redmond'

(syn. Tilia x euchlora 'Redmond', Tilia americana 'Redmont')



Matthew Redmond, Plumfield Nurseries, Fremont, Nebraska, USA, 1942. Marketed since 1960. Tree with a height of 12-15 m and a width of 6-7 m. Growth is closed pyramidal to narrow conical. Develops a perfectly straight trunk. Has 15-20 cm long leaves that are lighter green than common to the species. Flowers species-specific in July. Little or no susceptibility to aphids and so-called dripping. Therefore, and because of its shape and moderate dimensions, it is a very good street and avenue tree.

### cordata Small-leaved lime



Origin: Europe. Tall tree with a height of 20-25 m, in the Netherlands usually less high. Slow growth in the juvenile stage. Crown is initially conical, later turning almost round to wide ovoid. In its youth susceptible to sun scorch. Small, cordate leaf, 3-6 cm, dark green on top, greyish green on the underside. Endures dust, industrial smoke and hazardous fumes well. Tolerates pruning and pavement. Very hardy and resistant to (onshore) wind. Excellent avenue and street tree for all soils, including dry, sandy soils.

### cordata 'Böhlje'

(syn. Tilia cordata 'Erecta')



Baumschule Böhlje, Westerstede, Germany, 1800. Moderately tall tree, 18-20 m high, with a conical crown. Dark green leaf. Characteristics are species-specific. One of the best linden trees for avenue and street planting.

### cordata 'Corzam'

(syn. Tilia cordata 'Corinthiam')



Lake County Nursery, Perry, Ohio, USA, 1996. Narrow-growing selection with a rising crown. Branches evenly distributed across the upright and protruding trunk. Height 14 m, width 4-5 m. Thick, dark green, shiny leaves, narrower than common to the species. Ivory white, fragrant flowers. Excellent avenue and street tree with a compact crown. Suitable for narrow street profiles. Very hardy.

### cordata 'Dombrie'



Pépinières Drappier, rue Dombrie, Lecelles, France 1977. Medium-sized selection with an ovate, compact and rising crown. Very healthy leaf, buds early. Emerging leaves are reddish, which give an avenue a red glow when the tree is in full growth. Creates a uniform avenue. Easy to maintain, because it develops a straight, protruding leader that recovers when it is damaged.

### cordata 'Green Globe'



Sheridan Nurseries, Ontario, Canada, 1983. Slow-growing spherical selection, usually grafted. Height 3-4 m. For the rest species-specific.



Tilia cordata



Tilia cordata 'Rancho'



Tilia cordata 'Rancho'



Tilia cordata 'Winter Orange'



Tilia x europaea 'Euchlora'



Tilia x europaea 'Euchlora'

## cordata 'Greenspire'

(syn. Tilia cordata 'PNI6025')



Princeton Nurseries, Kingston, New Jersey, USA, 1961. Selection with an initially pyramidal, later ovate to ovoid crown with rising branches, 12-15 m high. Dark green, rather large leaf. Strong grower. Avenue and street tree for most soil types.

## cordata 'Rancho'



Scanlon Nurseries, Olmsted Falls, Ohio, USA, 1961. Selection with a rather narrow conical to, later, narrow ovoid crown with inclining branches, 10-12 m high and 5-6 m wide. Rather large, shiny green leaf. Because of its moderate dimensions a very good avenue and street tree

## cordata 'Roelvo'



M. Roelofsen, Opheusden, the Netherlands, 1988. A selection which grows much more regular and narrower than the species. Pyramidal growth with a straight trunk and protruding leader. Fresh, dull green, regularly shaped leaves, species-specific. Creates a uniform avenue when planted in rows.

## cordata 'Van Pelt'



Van Pelt Boomkwekerij, Putte, Belgium. A selection from the sixties. Develops a rising, wide pyramidal crown with a straight trunk. Height approx. 20 m. Leaf is rather large compared to the species, lighter green, with red petioles. Avenue tree for wide street profiles.

## cordata 'Winter Orange'



Jan Mouws, Zundert, the Netherlands, 1977. Slow-growing selection from seedlings with a height of 6-8 m and a round crown. Young shoots are orange-red. Very suitable for pleaching. Hardly susceptible to aphids and honeydew. For small gardens, parks and public gardens.

## x europaea Common lime, Dutch Lime

(Tilia cordata x Tilia platyphyllos)



Tall tree with a wide pyramidal crown. Height 30-40 m. Very variable in shape. For that reason, the cultivars described below are usually chosen and planted.

## x europaea 'Euchlora' Caucasian lime, Crimean linden

(syn. Tilia x euchlora)



James Booth (1770-1814), Booth Baumschulen, Klein-Flottbek, Germany, 1860. Tall tree with a height up to 20 m and 6-8 m width, with a conical, rather narrow crown of which the lower branches and twigs sag deeply. Leaf round ovate, shiny dark green. Flowers very profusely and rather late. Low susceptibility to leaf scorch and dripping. Sometimes troubled on the sunny side by slug-like larvae (*Caliroa annulipes*). Good avenue and street tree, but needs timely pruning because of its suspending branches.

## x europaea 'Königslinde' Kaiser linden

(syn. Tilia x vulgaris 'Pallida')



Large tree with a height of 20-30 m, with a wide pyramidal crown and upward inclining branches. The crown initially is pointy, later rounded and blunt, but not as round like 'Zwarte Linde'. Auburn twigs. Leaf larger than 'Zwarte Linde' and lighter green. The underside is yellowish-green, the petiole has a slightly red hue. Wind resistant tree. Do not plant on parking lots or parking strips along roads because of 'dripping'. Avenue and street tree, preferably on wide green verges or in locations where 'dripping' causes no problems.

## x europea 'Wratislaviensis'

(syn. Tilia x vulgaris 'Wratislaviensis')



City nursery Wroclaw, Wroclaw, Poland, 1898. Height 35-40 m with a wide, pyramidal crown. Smooth trunk, later more deeply grooved. Young leaves emerge bright yellow and then turn light to dark green. Yellow autumn colouring. In June-July, yellow-white flowers in suspending umbels. Grows on all soils. Not easily affected by aphids. Park tree and can be planted in wide street profiles.

## x europaea 'Zwarte Linde'

(syn. Tilia x vulgaris 'Zwarte Linde')



Naktuinbouw, Wageningen, the Netherlands, 1945. Another tall tree with a height of 20-30 m, with almost horizontally spreading branches, resulting in a wide loose and round crown. Very dark-coloured branches. Twigs dark green, later turning blackish-brown. Leaf dull green. Tree for wide roads and wide green verges. Do not plant directly along streets because of 'dripping'. Good tree for pleaching.

## x flavescens 'Glenleven'

(Tilia americana x Tilia cordata)

(syn. Tilia cordata 'Glenleven')



Sheridan Nurseries, Ontario, Canada, 1962. Selection with a round crown and a height of 12-15 m and 7-8 m width. Strong initial growth. Straight trunk. 6-10 cm long green foliage with a roughly serrated leaf margin; stays green for a long time in autumn. Street and avenue tree for wider profiles. Low soil requirements.

## henryana



Origin: Central China. Named after Augustine Henry (1857-1930), an Irish plantsman and sinologist, who discovered the species in 1888. A very different linden tree that needs warm summers to develop properly. The species can be recognized immediately by its very big leaves that have a serrated leaf margin with needle-shaped teeth. The fresh leaf is very densely covered with silvery ciliates and has a pinkish-red colour. The leaves can grow up to 14 cm long and wide. The white, very fragrant flowers appear in July / September and attract many bees, humblebees and other insects. Prefers a sheltered location and grows on all soils.

## henryana 'Arnold Select'



Tilia x europaea 'Königslinde'



Tilia henryana



Tilia henryana



Tilia mongolica 'Buda'



Tilia mongolica 'Buda'



Dirk Benoit, Pavia, Deerlijk, Belgium, 2003. Collected from seeds in the Arnold Arboretum, Boston, Massachusetts, USA. A cultivar that displays a better hardiness than the species.

### heterophylla 'Prestige'®

(syn. Tilia heterophylla 'Continental Appeal')



Willett Wandell, Wandell's Nursery Inc., Urbana, Illinois, USA, 1976. This aphid-free selection is a 12-15 m high tree with a narrow ovoid crown. Wide ovoid, glossy dark green leaves 10-15 cm. Yellow autumn colouring. Cream-coloured fragrant flowers in umbels in July. Followed by ovoid, hairy brown fruits. Grey-brown grooved trunk. Grows on all soils, if not too wet. Very hardy.

### x 'Moltkei'

(Tilia americana x Tilia tomentosa)

(syn. Tilia americana 'Moltkei')



Späth'sche Baumschulen, Berlin, Germany, before 1883. Named after field marshal Moltke, supreme commander in the Prussian army of Emperor Wilhelm I. Fast-growing, rising tree of substantial dimensions (1st size category). Height 25-30 m. Protruding trunk and a wide, lush crown with spreading branches and slightly overhanging twigs. Large, 10-18 cm leaf, strongly resembles the leaf of Tilia americana. Rather firm and smooth, dark green on top. Blooms with large bright yellow flowers in suspending bunches of 5-8 flowers. Beautiful park tree. Not suitable as avenue tree due to its (too) wide and loose crown. Hardly cultivated.

### mongolica



Origin: Mongolia, Northern China. Imported in Europe in 1863. Ornamental, slow-growing small tree, with rather thin, spreading and slightly overhanging auburn branches. Loose, round crown. Relatively small leaf, shiny dark green, strikingly roughly serrated, often 3-5-lobed. Specimen tree for parks and gardens.

### mongolica 'Buda'



A selection from the University of Budapest, Hungary and introduced in 1994 by Boomkwekerij Udenhout in the Netherlands. Very graceful growth and a pyramidal crown with elegant thin hanging brown-red twigs. Leaves are coarsely serrated, shiny, fresh dark green. In autumn, beautiful yellow autumn colouring. An aphid-free variety, which is completely drip-free. This means 'Buda' is not hindered by honeydew: a sweet sticky substance that is secreted by aphids. Very healthy tree and perfect for avenue and street planting and extremely suitable for pleaching. A valuable addition to the linden assortment.

### platyphyllos Broad-leaved lime (syn. Tilia platyphylla)



Indigenous to Europe, primarily Central Europe. In the Zuid-Limburg area in the Netherlands indigenous, but rare. Big 30 m tall tree with a dense, almost round crown. Established trees develop large root suckers and have a grooved trunk. Leaf almost round, 6-12 cm, pilose on top (like its young twigs), dark green. Can be planted on any soil as long as it is not too poor, preferably calcareous. For parks, old village squares, estates, manors and such. Valuable tree for the traditional cultural landscape, can also be planted along wide roadsides.

### platyphyllos 'Delft'



Piet van der Bom, Oudenbosch, the Netherlands, 1975. Selected in the city Delft near Amsterdam. A selection with a rather pyramidal crown and bright green leaves that are retained on the tree far into autumn. Young twigs are green. Not susceptible to leaf miners, spider mite, aphids, honeydew or sooty mould. Park tree and avenue tree for rural roads.

### platyphyllos 'Flamme de Vercors'



Guillot Bourne Pépinière, Jarcieu, France, 2012. Initially narrow and rising, later developing a more wide pyramidal crown. Height 10-15 m. Green, cordate leaf, 8-15 cm. Orange to brown-red autumn colouring. Cream-coloured, very fragrant flowers in suspending umbels in June. Grows on all soils and endures pavement well. Susceptible to onshore wind. Specimen, street and avenue tree.

### platyphyllos 'Laciniata'



Zlata Koruna Monastery, Zlata Koruna, Czech Republic, 1720. Big-leaf linden with deeply indented and twisted leaves. Height up to 15 m. Slow grower, but rich flowering tree with fragrant flowers in suspending bunches. Develops a dense, almost ovoid crown. Leaf shape very variable. Park tree.

### platyphyllos 'Louisa Victory Fist'



Ton van den Oever, Haaren, the Netherlands, 1990. Tree with a very closed, pyramidal habit. Height 12-14 m, width 5-6 m. For the rest species-specific. Street and avenue tree.

### platyphyllos 'Naarden'



Naktuinbouw, Wageningen, the Netherlands, 1979. Selected in the Dutch city Naarden. Compact growth with bright green leaves, which are retained on the tree for a very long time. Pyramidal growth with an oblate top. Height up to 20 m. Bright green twigs. Typical linden flowers. Not susceptible to leaf miners, honeydew or sooty mould. Avenue tree for wide green verges and estate planting.



Tilia platyphyllos



Tilia platyphyllos 'Rubra'





Tilia tomentosa 'Doornik'



Tilia tomentosa 'Grey Pillar'



Tilia tomentosa 'Grey Pillar'

## platyphyllos 'Örebro'



Gustav Karlsson, Örebro, Sweden, 1935. Introduced by Lundström Nurseries, Ostansjö, Sweden. Selection with a very narrow, pyramidal growth in its juvenile stage because of its relatively steeply rising branches. Height up to 17 m. At a later age, it has a wide egg-shaped, sagging crown with several top branches. Flowers moderately. Slow grower. Good street tree on locations where the species and other Linden varieties would grow too wide.

## platyphyllos 'Rubra' Red twigged lime (syn. Tilia platyphyllos 'Corallina')



France, 1755. Medium-sized tree with upward inclining branches. Wide conical crown. Height up to 15 m. Slow grower. The young twigs are coral-red to orange-red. The emerging leaf has a red hue, later turning dark green. Beautiful autumn colouring. Flowers species-specific. Park tree.

## platyphyllos 'Zelzate'®



Boomkwekerij De Martelaer, Zelzate, Belgium, 2005. Oval, pyramid shaped crown. Compact and dense structure. Buds early in spring. Green leaves, sheer round, slightly velvety on the backside. Yellow autumn colouring. Yellow flowers in pendulous clusters in June-July. Round, velvety fruits. Grows on all soils. Thrives in pavement. Extremely well resistant to pests and diseases. Street and avenue tree.

## tomentosa Silver lime (syn. Tilia argentea)



Tall tree with a height of 20-30 m. Crown ranges from wide pyramidal to round. Light grey trunk. Greyish-green leaf, later turning green, with a white felty underside. Grows on virtually any soil, but prefers loamy, fertile sandy soils. Light yellow autumn colouring. Blooms in July with fragrant flowers. Retains its leaf a long time, does not drip and is not very sensitive to drought. Endures onshore winds and urban air pollution, dust and fumes. Good city tree for squares, wide avenues and boulevards.

## tomentosa 'Brabant'



Piet van der Bom, Oudenbosch, the Netherlands, 1930. Selection with a regular and dense, wide conical crown with a relatively pointy top and an (initially) well-protruding trunk. Height 25-30 m, width up to 15 m. Light yellow autumn colouring. Blooms in July with fragrant flowers. Hardly susceptible to aphids. An excellent urban tree for parks, wide avenues and boulevards.

## tomentosa 'Doornik' (syn. Tilia tomentosa 'Kortrijk')



Pépinières Couvreur, Lesdain, Belgium, 1930. A selection that develops a wide ovoid crown once established. Good rising growth. Application similar to 'Brabant'. Height 20-25 m. Width 15 m. Light yellow autumn colouring. Blooms in July with fragrant flowers. Hardly susceptible to aphids.

## tomentosa 'Grey Pillar'



Imported from Hungary in 1992 by Boomkwekerij Udenhout. Selection with a columnar habitus. Clearly narrower than other existing cultivars. Height 15-20 m. Width 6-9 m. A super healthy Linden tree. Hardly susceptible to aphids. Leaf is species-specific, light yellow autumn colouring. Street and avenue tree.

## tomentosa 'Pendula' Weeping silver linden, Weeping silver lime (syn. Tilia 'Petiolaris')



Germany, 1864. Tall rising tree with a height of 20-25 m and a 10-12 m width. A more narrow and loose crown than Tilia tomentosa. Suspending side branches and weak, hanging twigs. Dark green 7-10 cm long leaf with a white felty underside. Blooms in July with fragrant flowers. Long petiole which makes the foliage very agile. Light yellow autumn colouring. Hardly susceptible to aphids. Beautiful park tree.

## tomentosa 'Szeleste'



Szelestei Arboretum, Szeleste, Hungary, 1950. Cultivar that develops a wide ovoid crown at a later age. Height 20-25 m. Width up to 15 m. Strongly rising growth. Dark green leaves, silvery-white on the underside. Application similar to 'Brabant'. Smooth grey trunk. Light yellow autumn colouring. Blooms in July with fragrant flowers, hardly susceptible to aphids.

## tomentosa 'Teri'



Imported from Hungary in 1992 by Boomkwekerij Udenhout. A slow-growing, conical Silver linden with a regular compact crown. Entirely free of diseases. Its habitus is identical to Tilia cordata 'Böhlje'. Avenue and street tree.

## tomentosa 'Varsaviensis' (syn. Tilia x varsaviensis)



Botanical Garden Warsaw, Warsaw, Poland, 1900. Named in 1951. A selection that previously thought to be a hybrid of Tilia platyphyllos x Tilia tomentosa. Develops a relatively narrow pyramidal crown. Height 20 m, width 6-9 m. Strongly resembles the species when budding, and then turns green. Tolerates drought and the urban climate very well. Has gained name as a very good, moderately narrow avenue and street tree for urban areas. Practically aphids resistant. A beautiful, super healthy linden tree.

## tomentosa 'Wandell'



Willett Wandell, Wandell's Nursery Inc., Urbana, Illinois, USA, 1988. Moderately tall selection, wide pyramidal, symmetrical crown. Height 13-14 m, width 10 m. Strong grower. Leaves are green with a silvery-grey, felty underside. Resistant to beetle damage and hardly susceptible to aphids. Yellow autumn colouring. Blooms in July with fragrant flowers. Beautiful street tree for wide profiles, also as a specimen tree or spaciouly planted in groups.



Tilia tomentosa 'Varsaviensis'



Tilia tomentosa 'Varsaviensis'

# Toona

fam. Meliaceae

# Ulmus

fam. Ulmaceae

## Red cedar, Toon, Toona

A genus that comprises 6 species that belong to the Meliaceae family, which includes both tropical and subtropical species. Only *Toona sinensis* is hardy in the Northwest of Europe. The generic name is derived from the Bengali word: *tun*, or *tunna*, and refers to the species *Toona ciliata*. In China, young *Toona* leaves are eaten as a vegetable. It also is a valuable wood species for the manufacturing of musical instruments and furniture and is often used as a replacement for the rarer *Swietenia*, commonly known as mahogany. *Toona* should not be planted in pavement, because it can develop many root suckers.

## Elm

A genus that comprises around 45 species occurring as shrubs and trees. In our region, the Elm has a stirring history. It was often used for many applications: housing, shipbuilding, tools, etc. However, the Dutch elm disease destroyed large populations. After 1900, many crossings have come on the market and up to the present day, better cultivars are being marketed and many of them show good resistance to Dutch elm disease. An Elm is a strong and vigorous tree, which can be planted in both the landscape and urban areas. *Ulmus* are extremely tolerant to salt and are therefore very suitable for coastal planting. They also show a good resistance to (onshore) wind. There is an appropriate Elm for almost every location.



*Toona sinensis*

**sinensis** Chinese mahogany, Chinese cedar  
(syn. *Cedrela sinensis*)



Origin: China. Imported in Europe in 1862. A park tree that slightly resembles *Ailanthus*, with a height of 16 m. Irregular branches with thick grey twigs. The trunk has lengthwise coarsely fissured bark. 40-60 cm long imparipinnate leaves with 20-26 finely pilose leaflets. Blooms with 50-70 cm long, suspending bunches that have numerous small, white to greenish-white flowers. The only species of the *Toona* genus that is hardy in the Netherlands. Yellow autumn colouring. An exclusive park tree in warm, sheltered locations and on fertile soils.

**sinensis 'Flamingo'**



Habitus species-specific, except for the leaves, which have white edges and spots and emerging leaves have a light pink hue. Inflorescence is species-specific. An exclusive specimen tree. Hardly cultivated.

**americana 'Princeton'**



Princeton Nurseries, Kingston, New Jersey, USA, 1922. Symmetrically rising, dense flabellate crown. Height 25-30 m. Dark green leaves, 16 cm long, 8 cm wide. Strong initial growth: 1.5 m per year. Starts flowering after 9 years. Green flowers in March-April. Dutch elm disease resistant. Yellow autumn colouring. Grows on all soils. Very wind and salt resistant. Park and specimen tree.

**'Arno'®**



Instituto per la Protezione delle Piante, IPP, Florence, Italy, 2007. Obtained from a cross between *Ulmus 'Plantijn'* and *Ulmus pumila*. Named after the Arno River which flows through Florence. Fast growing. Forms an upright oval crown. Leaves dark green, 5-9 cm long and 3-5 cm wide. The leaves keep their green colour far into autumn. Yellow autumn colouring. Flowers after about 6 years. Straight trunk, grey-green with grey-orange grooves. Good resistance to Dutch elm disease. Due to its rapid growth, suitable as a tree for forestry. Grows on all soils.

**'Camperdownii'** Camperdown elm  
(syn. *Ulmus glabra 'Camperdownii'*)



Camperdown House, Dundee, Scotland, UK, 1850. Expressive weeping variety with a densely closed, domed crown. From above more or less oblate. Height 5 m and almost just as wide. Strong branches which plunge towards the ground in big arches. Very big, dark green leaves with a rough surface. With its dense foliage, it almost creates a sort of bower. Specimen tree on lawns and estates, in parks and such. Susceptible to Dutch elm disease and nectria canker. Do not prune.



*Ulmus americana 'Princeton'*

*Ulmus americana 'Princeton'*



Ulmus 'Columella'



Ulmus 'Dodoens'

## 'Clusius'



Research Institute for Forestry and Landscape 'De Dorschkamp', Wageningen, the Netherlands, 1960. Released in 1983. Named after physician and botanist Carolus Clusius (1526-1609). Strongly rising elm, pyramidal growth in its juvenile stage, when maturing a more ovate growth. Height 15-18 m. Leaves fresh green and larger than the leaves of 'Lobel'. Yellow autumn colouring. Good resistance to diseases and winds. Low susceptibility to nectria canker. Can be planted as an urban street tree, however in limited quantities.

## 'Columella'

(Ulmus 'Plantijn' x Ulmus minor)



Research Institute for Forestry and Landscape 'De Dorschkamp', Wageningen, the Netherlands, 1967. Released in 1988. Named after Lucius Junius Moderatus Columella (4 AD -70 AD), a prominent writer and agriculturist during the Roman Empire. Wrote one of the first books about trees: On Trees (*De Arboribus*). Develops into a narrow columnar tree shape with a slightly translucent crown. Height 15-18 m. Relatively small, bright green, frizzy leaf. Buds relatively late. Good grower, but slower than 'Belgica' and 'Dodoens'. Resistant to the Dutch elm disease. Very suitable for street and avenue planting in urban green areas, because of its strikingly slender shape. Can be used as a large wind breaker as well. Also available on its own root. An excellent addition to the elm range.

## 'Dodoens'



Research Institute for Forestry and Landscape 'De Dorschkamp', Wageningen, the Netherlands, 1954. Released in 1973. Named after physician and botanist Rembert Dodoens (1517-1585). A tough, strong grower. Height 15-18 m. Tall rising tree with a wide conical shape and a habitus that is somewhere between that of 'Vegeta' and Ulmus glabra 'Exoniensis'. Yellow autumn colouring. Good wind resistance. For avenue and street planting.

## 'Fiorente'<sup>TM</sup>

(syn. Ulmus glabra 'Horizontalis')



Lorenzo Mittempergher & Alberto Santini, Istituto per la Protezione delle Piante, IPP, Florence, Italy, 2006. The name is derived from the Italian word: fiorente, flourishing and refers to the lush growth and the old names of Florence: Florentia, Fiorenza. Very strong growth. Large pyramidal upright crown and a height of 20-25 m. Leaves 5-8 cm long and 3-5 cm wide, emerging yellow-green. Keeps its green colour far into autumn, and then turns yellow. Has the latest leaf drop out of all Elm trees. Grey-green straight trunk with grey-orange grooves. Grows on all soils. Due to the rapid growth, suitable as a tree for forestry, but requires sufficient pruning. Good resistance to Dutch elm disease and road salt. Very suitable for landscape planting and immune to stress.

## 'Frontier'<sup>®</sup>



US National Arboretum, Washington D.C., USA. Commercialised in 1990. Hybrid obtained from a cross between Ulmus minor and Ulmus parviflora in 1971. Forms a pyramidal to oval half-open crown, 8-10 m high. Shiny, dark green, oval to elliptical-ovoid, serrated leaves that emerge red. Magnificent scarlet to burgundy autumn colouring. Green flowers in bundles in September. Small wingnuts. Light brown, grooved trunk. Good resistance to Dutch elm disease. Grows on all soils, including cold, calcareous and wet soils. Tolerates paving, road salt and air pollution.

**glabra** Wych elm, Scots Elm  
(syn. Ulmus montana, Ulmus scabra)



Origin: North and Central Europe, Asia. Big tree with a wide round crown, height 15-20 m. In lower and medium-high mountain ranges primarily used for high-rising forests and thickets. Does not develop root suckers. Large 8-16 cm long wide ovate, rough leaf. Not widely planted as a tree in our country. If so, sometimes as a park tree, but mostly planted as brushwood in wooded banks and regularly used as rootstock for certain cultivars. Susceptible to Dutch elm disease.

**glabra 'Exoniensis'** Exeter elm  
(syn. Ulmus glabra 'Fastigiata')



Ford & Please Nursery, Exeter, UK, 1826. Has a deceptive appearance in its juvenile stage, very narrow rising with branches that go straight up, almost resting against the trunk. However, later it grows very wide and high with heavy, sagging scaffold branches, from which the side branches and twigs once again grow straight up. Often completely branched (feathered). Height 8-10 m, at a later age it sometimes reaches heights of 12-15 m and is very wide then. Leaves are rough and dark green, slightly frizzy and almost touching the twig. Susceptible to Dutch elm disease and nectria canker. Do not prune. Attractive park tree, especially when feathered. If the stem height is sufficiently high, it is suitable for squares, very wide urban avenues and boulevards. Preferably on bicycle and pedestrian lanes or wide green verges. The lower branches of older trees tend to sag. Because of the tree's susceptibility to spider mite, the dark foliage often turns greyish.

**glabra 'Lutescens'** Golden wych elm



W. Pontey, Pontey's nursery, Kirkheaton, Huddersfield, UK, 1839. Often incorrectly cultivated as Ulmus americana 'Aurea'. Species-specific except for its yellow leaf colour. Park tree, but little known as such. Hardly cultivated.

**glabra 'Pendula'**  
(syn. Ulmus glabra 'Horizontalis')



Scotland, UK, 1816. Not a traditional weeping variety, but it has horizontally spreading, heavy branches, with slightly overhanging side branches and twigs. Moderately tall with a height up to 10-12 m and very wide. Fishbone-like twigs with large, deep green leaves. Slightly susceptible to Dutch elm disease. Attractive specimen tree for parks and wide green verges or for monumental squares in old cities. Not as a street tree.



Ulmus 'Frontier'



Ulmus 'Frontier'



Ulmus 'Homestead'



Ulmus laevis

### x hollandica 'Commelin'

(Ulmus x hollandica 'Vegeta' x Ulmus 'Minor')



Foundation Willie Commelin Scholten Phytopathological Laboratory, Baarn, the Netherlands, 1940, released in 1960. Named after 17th century Dutch botanist Jan Commelin (1629-1692). Clone with a relatively open crown, narrower than 'Vegeta' and 'Belgica', 15-18 m high. Straight, hardly crooked trunk with a somewhat untidily protruding central leader. Very wind resistant. Susceptible to necrotic canker and Dutch elm disease. Crown is more regular in shape than 'Vegeta'; the leaf is also smaller and fresher green, late leaf drop. Street and avenue tree. Hardly needs any pruning. No longer cultivated.

### x hollandica 'Dampieri'

(syn. Ulmus carpinifolia 'Dampieri')



Belgium, 1863. Initially a columnar growth, later wider pyramidal with a relatively dense and closed crown, height 12-15 m. Fresh green, frizzy leaf, pushing slightly against the twig. Hardly needs any pruning, if at all. Less susceptible to Dutch elm disease than is common to the species, but slightly susceptible to necrotic canker. Good street tree, also in pavement.

### x hollandica 'Groeneveld'



Research Institute for Forestry and Landscape 'De Dorschkamp', Wageningen, the Netherlands, 1949. Released in 1963. Slow-growing tree, 12-15 m high. Straight trunk and rather straight protruding leader, sometimes forked in the top. Dense, regular crown, with relatively steeply rising branches, rather pyramidal. Small, dark green and tough leaf. Tolerates strong wind. Very resistant to Dutch elm disease; however susceptible to necrotic canker. Hardly needs any pruning. Requires fertile soil that is not too moist. Tolerates pavement well. Excellent urban tree for planting in relatively narrow streets.

### x hollandica 'Pioneer'



Townsend & Masters, USDA Forest Service, Northeastern Research Station, Delaware, USA, 1971, released in 1983. Created from a hybrid of the Asian Ulmus pumila and the American Ulmus rubra. Extraordinarily fast and strong growth; develops a wide spherical crown, which is slightly wider than it is high. Large, dark green leaf. The yellow autumn foliage is retained by the tree a long time. High resistance to Dutch elm disease. Is hardy and wind resistant. Very beautiful, big avenue and street tree for wide roads. Because of its crown shape, also a beautiful and shady park tree.

### x hollandica 'Vegeta' Huntingdon elm



Wood & Ingram, Huntingdonshire, UK, 1746. Once considered the ultimate replacement of Ulmus x hollandica 'Belgica', but it no longer is because of its susceptibility for the aggressive strain of the Dutch elm disease. Has a straight, relatively short trunk that quickly forks towards the top of the crown. Height 20-25 m, very wide. Also susceptible to necrotic canker. Heavy scaffold branches can break off spontaneously when planted on wet soils. Leaf relatively large, lighter green. Wind resistant. A beautiful avenue and street tree, also perfect for landscape planting and rural roads. Tolerates paved surfaces well. No longer cultivated.

### x hollandica 'Wredei' Golden elm

(syn. Ulmus carpinifolia 'Wredei', Ulmus x hollandica 'Dampieri Aurea')



Wrede, Germany, 1875. Medium-sized tree with a variable habitus. Is being cultivated without a central leader and in that case, it has a more or less irregular, wide and round crown. This is different when cultivated with a central leader: then the trunk will protrude halfway to the crown and further and will develop several top branches at a later age. In the latter most commonly grown variety, the tree forms a relatively loose, more or less pyramidal crown and grows to a height of 8-12 m. Weaker growth than 'Dampieri'. Golden-yellow leaf, in late summer often slightly yellowish-green. Susceptible to necrotic canker and aphids. For parks, public gardens and larger private gardens. Can be used as a street tree, preferably on open verges.

### 'Homestead'



Townsend & Masters, USDA Forest Service, Northeastern Research Station, Delaware, USA, 1970, released in 1983. Selection obtained from a very complex crossbreeding. Fast grower with a dense, symmetrical wide pyramidal crown and a strong, central leader. Deep green foliage with a straw yellow autumn colour. Highly resistant to Dutch elm disease and other fungal diseases. Is hardy and wind resistant and endures industrial air pollution. Very beautiful, robust avenue and street tree for wide profiles. Hardly cultivated.

### japonica 'Triumph'®

(syn. Ulmus japonica 'Morton Glossy')



Morton Arboretum, Lisle, Illinois, USA. Selection of a crossing between Ulmus pumila and Ulmus japonica. Fast-growing, wide oval, upright tree. Height 20-25 m, width 14-16 m. Resistant to Dutch elm disease, also very resistant to insects and diseases. Dark green leaves. Very drought resistant. Grows on all soils.

### laevis European white elm



Origin: Central Europe, West Asia. A fast-growing, large elm with a height of 20-30 m with a relatively loose, open crown. Develops several protruding main branches. Small leaves with a very slanting leaf base. Leaf margin is sharply doubly serrated. Grey bark with wide and deep grooves. Low susceptibility to Dutch elm disease.

### laevis 'Helena'®

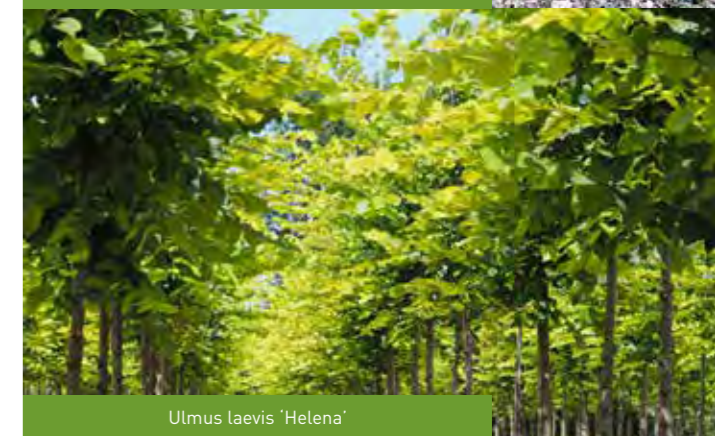
(syn. Ulmus laevis 'Eibergen')



Boomkwekerij 't Herenland, Ochten, the Netherlands, 2010. The name Helena is derived from the Greek word: *hêlios*, radiant, brilliant and refers to the beautiful autumn colours of this cultivar. A selection from an 80-year-old lane in the Dutch town Eibergen. Height 20-25 m, width up to 12 m. Develops a columnar rising crown. Deeply grooved trunk and dark green, wide elliptical leaves. Golden-yellow autumn colouring. Very healthy and vigorous. High genetic purity and hardly susceptible to Dutch elm disease. Tolerates onshore wind and road salt. Grows on both dry and moist soils. Use in wide profiles. Park tree.



Ulmus laevis



Ulmus laevis 'Helena'



Ulmus laevis 'Helena'



Ulmus 'Lutece'



Ulmus 'Lobel'

## 'Lobel'



Research Institute for Forestry and Landscape 'De Dorschkamp', Wageningen, the Netherlands, 1958, released in 1973. Named after Matthias Lobelius (1538-1616), the physician of William, Prince of Orange, before moving to England where he became physician and botanist to King James I. Initially, this variety develops a narrow rising crown, at a later age it spreads out. Height 15-18 m. Small leaf. Well resistant to (onshore) wind. Good avenue and street tree.

## 'Lutece'®

(syn. Ulmus 'Nanguen')



Institut National Recherche Agronomique, INRA, France, 2002. This selection is the result of cross-pollination between 6 French, 1 English and 1 Chinese variety. It was named Lutece (old name of the city of Paris) in gratitude for the cooperation of the Parks and Gardens department of the city of Paris, where this originally Dutch clone (1970) has been subject to 20 years of field trials. Closed, upright growth. Smooth trunk with rough, asymmetrical dark green leaves. Dutch elm disease resistant. Grows on all soils.

## minor Field elm

(syn. Ulmus 'carpinifolia', Ulmus campestris)



Tall tree with a height of 25-30 m and a wide closed crown and variable habitus. Thrives on poor soils, but does not grow on heavy clay. Requires open soil, does not tolerate pavement. Is used widely in forestry parks, on windbreaks, verges and such as brushwood, particularly in coastal areas. It is however rather susceptible to Dutch elm disease, and checking for this becomes very difficult in forestry parks or on windbreaks and such. The use in wooded banks and groves is therefore not recommended for the time being. Endures onshore wind, dust and smoke. Traditionally a beautiful avenue elm for open verges in landscape planting. Hardly cultivated.

## minor 'Christine Buisman'

(syn. Ulmus x hollandica 'Christine Buisman', Ulmus procera 'Christine Buisman')



This selection was the first one from the Dutch elm breeding program. Christine Buisman (1900-1936) found evidence that the Graphium ulmi, later called Ophiostoma ulmi, was the cause of Dutch elm disease. Recent DNA research proves that this variety is a clone of Ulmus minor. Commercialised in 1937. The first good Dutch elm disease resistant clone. Upright growth. The branches first grow horizontally and abruptly turn upward after about a metre's growth. The 7 x 4 cm leaves are obelisk-shaped, dark green on top with a lighter underside. Moderately wind resistant. Good heat and drought resistance. Tolerates paving.

## minor 'Hoersholmiensis'

(syn. Ulmus carpinifolia 'Hoersholmiensis')



Hørsholm Planteskole, Hørsholm, Denmark, 1885. Cultivar with a regular, wide ovate crown, narrow in the juvenile stage. Height up to 12-13 m. Protruding trunk. Relatively long and narrow leaf, 8-15 cm, smooth and dark green. Hardly requires pruning. Very hardy and wind resistant. Not very susceptible to nectria canker, but it is slightly susceptible to Dutch elm disease. Avenue and street tree. Hardly cultivated.

## minor 'Sarniensis' Guernsey elm

(syn. Ulmus carpinifolia 'Sarniensis', Ulmus campestris 'Monumentalis', Ulmus campestris 'Wheatley')



UK, 1836. Monumental tree with an even, narrow pyramidal crown and straight protruding trunk, height 15-18 m. Tough spreading branches. Heavy pruning increases its susceptibility to Dutch elm disease. Wind resistant and well resistant to urban air pollution. Very suitable for use in industrial areas or as a specimen tree for parks and public gardens.

## minor 'Umbraculifera'

(syn. Ulmus carpinifolia 'Umbraculifera')



Späth'sche Baumschulen, Berlin, Germany, 1897. Top grafted to develop a dense round crown. Leaves almost species-specific, bright green. Because of its susceptibility to Dutch elm disease, hardly planted anymore. Street or avenue tree for wider profiles. Hardly cultivated.

## 'Morfeo'®



Instituto per la Protezione delle Piante, IPP, Florence, Italy, 2000. This hybrid is a cross between the Dutch clone '405' x Ulmus chenmoui (Chenmou or Langya Mountain elm from eastern China). The '405' clone is closely related to Ulmus 'Groeneveld'. 'Morfeo' was commercialised in 2011. The cultivar is named after Morpheus, the Roman god of dreams to whom the elm was sacred. Robust and fast-growing. Green, broad elliptical leaves, which taper to a point, odd leaf base. Flowers mid-March. Red-brown to red autumn colouring. At a later age, the trunk has corky fissures. Quite wind resistant. Tolerates all soils, including wet soils during winter. Very good Dutch elm disease resistance. Valuable tree for butterflies and bees.

## 'New Horizon'™

(Ulmus pumila x Ulmus davidiana var. japonica)  
(syn. Ulmus W917)



Eugene Smalley & Raymond Guries, Madison University, Wisconsin, USA, 1994. A Resista clone. Closed cone-shaped to ovoid, loose crown, 20-25 m high. Grey-brown trunk which becomes more deeply grooved once established. Very fast growth and requires sufficient pruning especially in the juvenile stage. Light purple flowers in March-April, after which flat winged fruitlets appear. Dark green, shiny foliage, yellow autumn colouring. Grows on all soils. Tolerant to road salt and highly resistant to Dutch elm disease. Suitable for landscape planting as well as street and avenue planting. Immune to stress.



Ulmus 'Lobel'



Ulmus 'Plantijn'



Ulmus 'Plantijn'

## 'Plantijn'



Research Institute for Forestry and Landscape 'De Dorschkamp', Wageningen, the Netherlands, 1960, released in 1973. Named after printer and publisher Christoffel Plantijn (1520-1589). Probably the fastest growing tree in this range. A moderately fast grower. Rising, relatively densely closed habitus, but still a somewhat loose shape. Height 15-18 m. Has grey twigs and greyish-green leaves. Substantially less wind resistant than the other three clones. Use as a street tree in urban areas.

## 'Plinio'



Instituto per la Protezione delle Piante, IPP, Florence, Italy. Originated from a cross between Ulmus 'Plantijn' and Ulmus pumila. Named after the historic Roman writer Pliny the Elder. Fast-growing, forms an oval crown up to 15 m high. The leaves are alternately arranged and somewhat longer than standard elm leaf. Yellow autumn colouring. Grows well on calcareous soils. Good resistance to Dutch elm disease.

## 'Rebella'™

(Ulmus parviflora x Ulmus americana)



Eugene Smalley & Raymond Guries, Madison University, Wisconsin, USA, 1987. A Resista clone. Loose crown with an overhanging top. Silvery-grey trunk, which becomes more deeply grooved and red-brown coloured once established. Smaller green foliage, orange to red autumn colouring. A seedless selection. Grows on all soils. Tolerant to road salt and highly resistant to Dutch elm disease. Suitable for landscape planting as well as street and avenue planting. Immune to stress.

## 'Rebona'™

(Ulmus pumila x Ulmus davidiana var. japonica)

(syn. Ulmus W916)



Eugene Smalley & Raymond Guries, Madison University, Wisconsin, USA, 1993. A Resista clone. Closed, broad cone-shaped loose crown with a protruding trunk. Height 20-25 m. Grey-brown trunk, which becomes more deeply grooved and red-brown coloured once established. Very fast growth and requires sufficient pruning especially in the juvenile stage. Darker and slightly smaller foliage than 'New Horizon', shiny oval to ovate with an oblique leaf base. Yellow autumn colouring. Light green inflorescence in March-April, then flat, winged fruitlets appear. Grows on all soils. Tolerant to road salt and highly resistant to Dutch elm disease. Suitable for landscape planting as well as street and avenue planting. Immune to stress.

## 'Regal'

(Ulmus 'Commelin' x Ulmus '215')



Eugene Smalley, Madison University, Wisconsin, USA, 1960, patented in 1983. A Resista clone. Broad columnar growth and a striking, open and transparent crown. Grows on all soils. Tolerant to road salt and good resistance to Dutch elm disease. Suitable for landscape planting as well as street and avenue planting. Immune to stress.

## 'San Zanobi'®

(Ulmus pumila x Ulmus davidiana var. japonica)



Instituto per la Protezione delle Piante, IPP, Florence, Italy, 2002. Named after Saint Zenobius. It is also that after his death, a dead elm burst into life after his body touched it. Upright cultivar, in shape resembling Columella, but with a looser crown structure. Leaves are 15 x 6 cm, emerge light green and then turn green. Flowers mid-March. Foliage is retained on the tree far into autumn, but hardly changes colour. Grows on all soils, but does not tolerate wet locations. Resistant to Dutch elm disease.

## 'Sapporo Autumn Gold'®

(Ulmus pumila x Ulmus davidiana var. japonica)



Botanical garden Hokkaido University, Sapporo, Japan, 1975. Forms a wide to vase-shaped crown. Height 15-18 m. Pale grey trunk. Narrow elliptical leaf, 9-10 cm long. Purple-red flowers in March. Turns bright yellow in autumn. Grows on all soils. Dutch elm disease resistant. Park and specimen tree.

## 'Urban'®



Toru Arisumi, USDA, Columbus, Ohio, USA, 1958. A hybrid originated from a cross between Ulmus pumila and the Dutch clone Ulmus '148' (Ulmus x hollandica 'Vegeta' x Ulmus minor '28'). Forms an ovoid crown up to 20 m high, 12-15 m wide. Dark green, ovoid, glossy leaves. In March, inconspicuous reddish-brown flowers in bunches. Light brown fruits. Orange autumn colouring. Dark green, peeling bark. Grows on all soils, quite wind resistant. Can be planted in paving. Moderately Dutch elm disease resistant. Large amounts of this variety have planted along the Amsterdam canals.

## 'Vada'®

(syn. Ulmus 'Wanoux')



Institut National Recherche Agronomique, INRA, Paris, France, 2006. This tree was originally selected from a Dutch propagation program but was extensively tested by the INRA after which the tree received its commercial name 'Vada'. Upright growth, height up to 20 m. The shiny, dark green leaves, 11 cm long and 8 cm wide, are regularly and finely serrated. Grows on all soils, even very wet soil types. Resistant to Dutch elm disease.



Ulmus 'Urban'

# Zanthoxylum

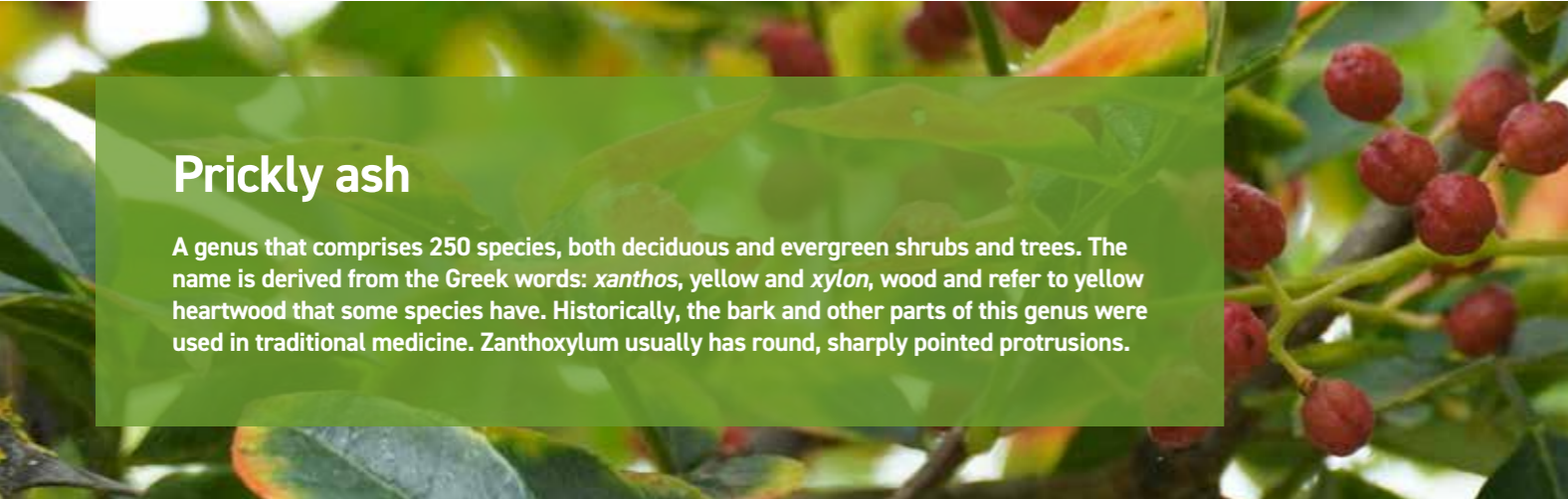
fam. Rutaceae

# Zelkova

fam. Ulmaceae

## Prickly ash

A genus that comprises 250 species, both deciduous and evergreen shrubs and trees. The name is derived from the Greek words: *xanthos*, yellow and *xylon*, wood and refer to yellow heartwood that some species have. Historically, the bark and other parts of this genus were used in traditional medicine. Zanthoxylum usually has round, sharply pointed protrusions.



## Zelkova

A genus that comprises 7 species; mostly occurring as trees and occasionally as shrubs. Zelkova serrata is the most planted shrub species. The generic name is derived from the Georgian *dzelkva* and means as much as stone-hard building wood. Zelkova carpinifolia is also native to the Caucasus. Together with Ulmus and Hemiptelea, Zelkova is part of the Ulmaceae family. Zelkova wood is very much wanted for the manufacturing of furniture and as building wood. It has a similar grain pattern to Elm wood, but is harder. Zelkova is a healthy tree with a graceful growth and a wonderful autumn colouring.



Zanthoxylum simulans

### **piperitum** Japanese pepper



Origin: North China, Korea & Japan. Small shrub or tree, irregularly growing to a height of 6-7 m. Small, dark green, glossy leaves in pairs, odd-pinnate and fragrant. Yellow autumn colouring. Greenish-yellow flowers of 4-5 mm followed by brown-red berries 3-4 mm in size. Sichuan pepper is made from the seeds. Best planted on a sunny location. Grows on all nutritious and well-drained soils.

### **simulans** Chinese pepper, Sichuan pepper (syn. Zanthoxylum bungeanum, Zanthoxylum bungei)



Occurring in China and Taiwan. Wide shrub or tree up to 7 m high. Branches have flat thorns 3-6 mm. Pinnate leaf, 12-14 cm in size with 7-11 small, long oval leaflets, fragrant. Yellow autumn colouring. Greenish-yellow flowers of 4-5 mm followed by brown-red berries 3-4 mm in size. Sichuan pepper is made from the seeds. Known for attracting bees, beneficial insects and other pollinators and it has nectar- /pollen-rich flowers. Best planted on a sunny location. Grows on all nutritious and well-drained soils.



Zanthoxylum simulans

### **carpinifolia 'Pyramidalis'**



Very densely branched, narrow and upright tree. Height 8-10 m, width 2-3 m. Oval, elliptical leaves 5-8 cm long, dark green on top and feeling somewhat rough. Orange-yellow autumn colouring. For narrow streets and small gardens.

### **serrata** Japanese zelkova



Origin: Japan. Imported in Europe in 1830. A 10-12 m tall tree with a short trunk and a loose, wide oblate round crown. Inclining to horizontally spreading branches and twigs. Twigs more or less shiny auburn. Bark peels off in small plates at a later age. Long ovoid leaf, 3-7 cm, with a blunt, serrated leaf margin. Inconspicuous flowers and fruits. Requires fertile, humus-rich, loamy sandy soils, then shows reasonably fast growth. Endures pavement, but generally the crown is too low and too widely spreading in order to plant it along roads. It is, however, an attractive avenue tree when planted in the middle of wide green banks and verges. Rather sensitive to wind. In addition, an attractive park tree, both as a specimen tree or planted in small groups.

### **serrata 'Fastigiata'**



Narrow columnar-growing up to 15 m. Ovoid to elliptical green leaves, hairy and serrated, 13 cm in size. Bronze to red autumn colouring. Blooms in April-May with inconspicuous monoecious green flowers. Then small, green bean-shaped fruits of 4-5 mm, which later turn brown. Grey-brown bark flaking off in small plates. Quite hardy. Grows on all soils, but prefers humus-rich and loamy soil. Also tolerates paving.



Zelkova carpinifolia



Zelkova carpinifolia

# Zelkova

fam. Ulmaceae



Zelkova serrata



Zelkova serrata 'Urban Ruby'



Zelkova serrata 'Urban Ruby'

## serrata 'Flekova'

(syn. Zelkova serrata 'Green Vase'®)



Princeton Nurseries, Kingston, New Jersey, USA, 1983. Cultivar with a vase-shaped, rising crown with inclining branches. Height 15 m and 10-12 wide. In the juvenile stage, faster and narrower growth, later it spreads out towards the top. Relatively short strong trunk with soft greyish bark. Leaf shape is species-specific, bright green, bronze-red to orange autumn colours. Healthy and very resistant to Dutch elm disease, therefore used as a replacement tree for the elm in many countries. Endures air pollution well and is wind resistant. Because of its narrow habitus, a good newcomer in the range of street and avenue trees.

## serrata 'Halka'



J. Frank Schmidt & Son Co., Boring, Oregon, USA, 1984. Selection with a wide, rather vase-shaped crown and inclining branches. Height 16 m, width 9-10 m. Grows faster than 'Village Green'. Leaves species-specific. Excellent avenue and street tree for wider street profiles. Hardly cultivated.

## serrata 'Musashino'



J. Frank Schmidt & Son Co., Boring, Oregon, USA, 1994. Introduced in 2000. Named after the city of Mushashino, Tokyo, Japan where the mother tree was found. A winner among the Zelkovas. An extremely narrow, vase-shaped selection. Height 10-13 m. Width up to 4-5 m. Leaf shape species-specific, dark green, with a beautiful auburn to orange-yellow autumn colouring. Excellent avenue and street tree.

## serrata 'Urban Ruby'



Hanno Hardijzer, Boskoop, the Netherlands, 1993. A selection with a more vase-shaped crown, 10-12 m high, 5-6 m wide. The leaves emerge purple and then turn dark green. Beautiful autumn colours, rust-red to brown-yellow. Due to the smaller size and crown shape, it is very suitable as an avenue and street tree.

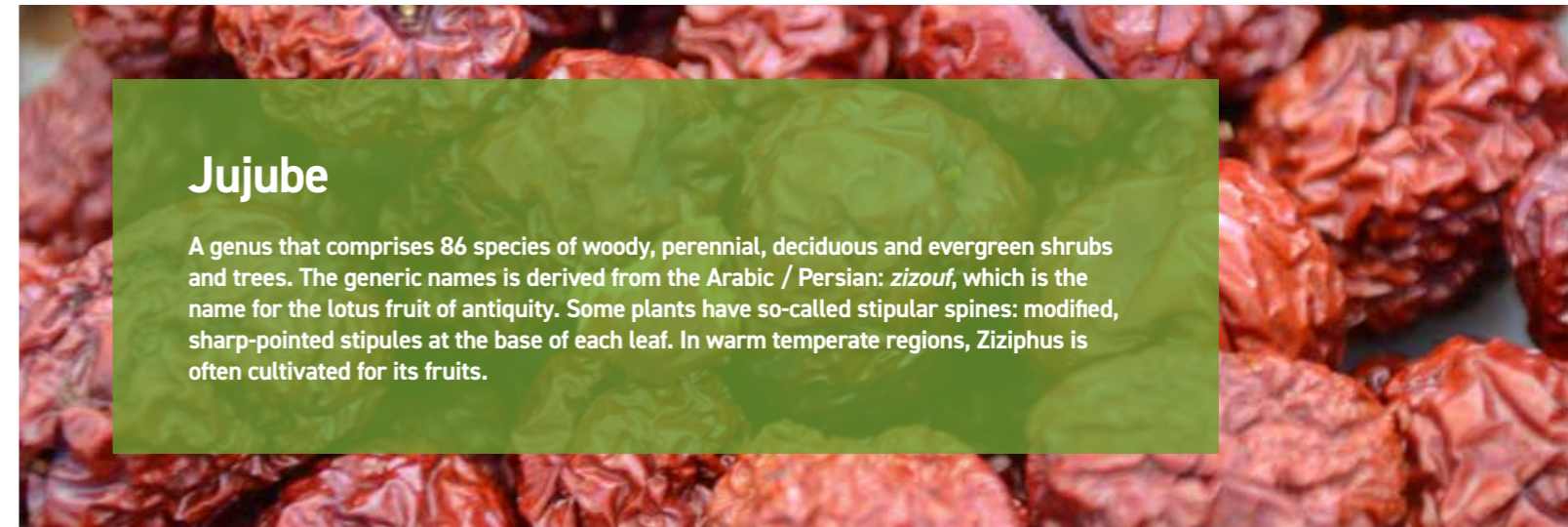
## serrata 'Village Green'™



Princeton Nurseries, Kingston, New Jersey, USA, 1964. A selection with a more vase-shaped crown, 10-12 m high and 5-6 m wide. Dark green leaf, 7-10 cm long, with attractive autumn colours, rust-red to brownish-yellow. Because of its smaller dimensions and crown shape, it is very suitable as an avenue and street tree. Used widely as such in the USA and other countries. Also for squares and parking lots.

# Ziziphus

fam. Rhamnaceae



## Jujube

A genus that comprises 86 species of woody, perennial, deciduous and evergreen shrubs and trees. The generic name is derived from the Arabic / Persian: *zizouf*, which is the name for the lotus fruit of antiquity. Some plants have so-called stipular spines: modified, sharp-pointed stipules at the base of each leaf. In warm temperate regions, Ziziphus is often cultivated for its fruits.

**jujuba** Common jujube, Indian jujube, Chinese date



Origin: Southern Europe and East Asia. Imported in Europe in 1640. Permanently narrow small tree with a height of 7-9 m. Ovate leaves, with a finely serrated margin. Small and rather inconspicuous light yellow flowers, 2-3 together. Ovoid fruits, dark red turning to black, 10-25 mm in size.

**'Lang'**



Origin: China. Permanently narrow, small tree, 7-9 m. In the Netherlands rather unknown and rarely planted, in China as common as an apple tree. Small, light green, shiny leaves, slightly serrated. Produces many edible pear-shaped fruits. Fruits are 5-7 cm in size and turn colour from green to auburn. They are also referred to as Chinese dates. The fruits are edible when green, but are mostly consumed when they are brownish-red. Use as a specimen tree.

**'Li'**



Origin: China. Permanently narrow small tree, 7-9 m. In the Netherlands rather unknown and rarely planted, in China as common as an apple tree. Extremely hardy. Small, light green, shiny leaves, slightly serrated. Fragrant, small, white flowers (June-July). Produces many edible pear-shaped fruits. Fruits are 5-7 cm in size and turn colour from green to amber. They are also referred to as Chinese dates. The fruits are edible when green, but most people wait until they have turned amber. Use as a specimen tree.



Ziziphus jujuba



Ziziphus jujuba





# Tree finder

# Tree finder

	Small tree / spherical crown	Round / ovoid crown	Columnar crown	Weeping crown	Broad / large crown	Narrow streets	Broad streets / avenues	Landscape planting	Park tree / specimen tree	Coastal areas	Industrial areas	Shadow enduring	Little or no pruning	Tolerates pavement	Ornamental value	Valuable for bees, butterflies & birds	Drought resistant	Withstand wet periods	Hardiness zone (Europe)	Winter hardiness (°C)	Page
					●			●	●					●	●	●	●	4	-34,4 to -28,9	26	
		●					●			●	●	●	●	●				●	4	-34,4 to -28,9	26
					●		●		●					●	●	●	●	4	-34,4 to -28,9	26	
					●		●	●		●	●	●	●	●			●	4	-34,4 to -28,9	26	
	●					●		●					●				●	4	-34,4 to -28,9	27	
					●		●			●	●	●	●	●			●	4b	-31,7 to -28,9	27	
					●		●	●		●	●	●	●	●			●	4	-34,4 to -28,9	27	
	●							●	●					●	●	●	●	4	-34,4 to -28,9	27	
rubrum					●		●	●						●	●	●	●	4	-34,4 to -28,9	27	
					●		●	●						●	●	●	●	4	-34,4 to -28,9	28	
	●					●		●				●	●	●	●	●	●	4	-34,4 to -28,9	28	
	●					●		●						●	●	●	●	4	-34,4 to -28,9	28	
	●					●		●				●	●	●	●	●	●	4	-34,4 to -28,9	28	
	●					●		●				●	●	●	●	●	●	4	-34,4 to -28,9	29	
					●		●		●					●	●	●	●	4	-34,4 to -28,9	29	
					●		●	●		●				●	●	●	●	4	-34,4 to -28,9	29	
	●					●		●						●	●	●	●	4	-34,4 to -28,9	29	
	●					●		●				●	●	●	●	●	●	4	-34,4 to -28,9	29	
	●					●		●					●	●	●	●	●	4	-34,4 to -28,9	29	
		●				●		●				●	●	●	●	●	●	4a	-34,4 to -31,7	30	
		●				●		●				●	●	●	●	●	●	4	-34,4 to -28,9	30	
		●				●		●			●	●	●	●	●	●	●	4	-34,4 to -28,9	30	
		●				●		●				●	●	●	●	●	●	4	-34,4 to -28,9	30	
		●				●		●				●	●	●	●	●	●	4	-34,4 to -28,9	30	
		●				●		●				●	●	●	●	●	●	4	-34,4 to -28,9	30	
																		4	-34,4 to -28,9	31	
																		4	-34,4 to -28,9	31	
		●					●	●						●	●	●	●	4	-34,4 to -28,9	31	
		●					●	●						●	●	●	●	4	-34,4 to -28,9	31	
		●					●	●						●	●	●	●	4	-34,4 to -28,9	31	
rufinerve					●		●	●						●	●	●	●	6a	-23,3 to -20,6	31	
saccharinum					●		●	●						●	●	●	●	4	-34,4 to -28,9	31	
					●		●	●						●	●	●	●	4	-34,4 to -28,9	31	
					●		●	●					●	●	●	●	●	4	-34,4 to -28,9	31	
					●		●	●						●	●	●	●	4	-34,4 to -28,9	32	
					●		●	●						●	●	●	●	4	-34,4 to -28,9	32	
					●		●	●						●	●	●	●	4	-34,4 to -28,9	32	
saccharum					●		●	●						●	●	●	●	4	-34,4 to -28,9	32	
					●		●	●						●	●	●	●	4a	-34,4 to -31,7	32	
	●						●	●		●	●			●	●	●	●	4	-34,4 to -28,9	32	
					●		●	●						●	●	●	●	4	-34,4 to -28,9	33	

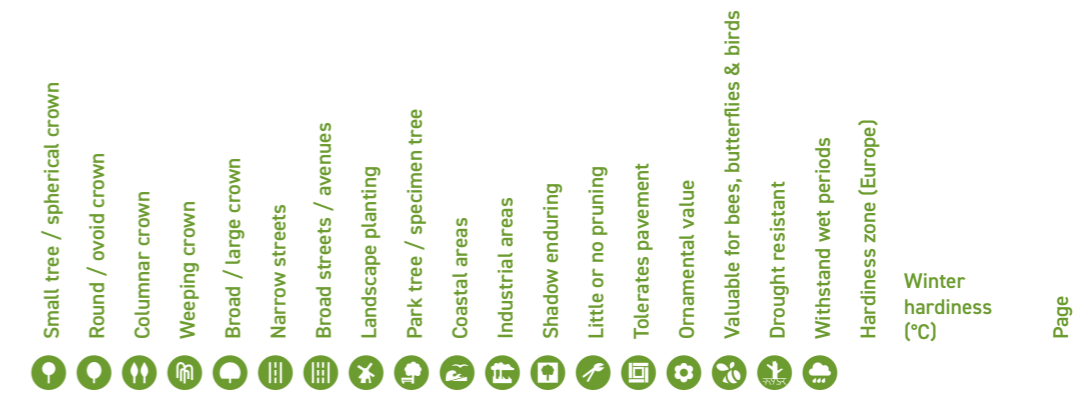
	Small tree / spherical crown	Round / ovoid crown	Columnar crown	Weeping crown	Broad / large crown	Narrow streets	Broad streets / avenues	Landscape planting	Park tree / specimen tree	Coastal areas	Industrial areas	Shadow enduring	Little or no pruning	Tolerates pavement	Ornamental value	Valuable for bees, butterflies & birds	Drought resistant	Withstand wet periods	Hardiness zone (Europe)	Winter hardiness (°C)	Page
					●		●	●						●	●	●	●	4	-34,4 to -28,9	33	
					●		●	●						●	●	●	●	4	-34,4 to -28,9	33	
					●		●	●						●	●	●	●	4	-34,4 to -28,9	33	
					●		●	●						●	●	●	●	4	-34,4 to -28,9	34	
tataricum		●					●	●						●	●	●	●	4	-34,4 to -28,9	34	
		subsp. ginnala					●	●				●		●	●	●	●	3	-40,0 to -34,5	34	
		subsp. ginnala 'Flame'					●	●				●	●	●	●	●	●	3	-40,0 to -34,5	34	
		'Hot Wings'					●	●				●	●	●	●	●	●	3	-40,0 to -34,5	34	
triflorum							●	●						●	●	●	●	6	-23,3 to -17,8	34	
'Warrenred'							●	●						●	●	●	●	5	-28,8 to -23,4	35	
x zoeschense							●	●	●		●			●	●	●	●	6a	-23,3 to -20,6	35	
<b>AESCULUS</b>																					
							●	●	●					●	●	●	●	5	-28,8 to -23,4	37	
x carnea							●	●	●	●				●	●	●	●	6a	-23,3 to -20,6	37	
							●	●	●	●				●	●	●	●	6a	-23,3 to -20,6	38	
							●	●	●	●				●	●	●	●	6a	-23,3 to -20,6	38	
							●	●	●	●				●	●	●	●	6a	-23,3 to -20,6	38	
							●	●	●	●				●	●	●	●	6a	-23,3 to -20,6	38	
							●	●	●	●				●	●	●	●	6a	-23,3 to -20,6	38	
'Digitata'	●						●	●						●	●	●	●	6a	-23,3 to -20,6	38	
flava							●	●						●	●	●	●	6	-23,3 to -17,8	39	
							●	●						●	●	●	●	6	-23,3 to -17,8	39	
hippocastanum							●	●	●	●				●	●	●	●	4	-34,4 to -28,9	39	
							●	●	●	●				●	●	●	●	4	-34,4 to -28,9	39	
							●	●	●	●				●	●	●	●	4	-34,4 to -28,9	40	
							●	●	●	●				●	●	●	●	4	-34,4 to -28,9	40	
'Homestead'		●					●	●					●	●	●	●	●	5	-28,8 to -23,4	40	
indica		●					●	●		●				●	●	●	●	6a	-23,3 to -20,6	40	
							●	●						●	●	●	●	6a	-23,3 to -20,6	40	
'Laciniata'		●					●	●						●	●	●	●	6	-23,3 to -17,8	41	
x mutabilis		●					●	●						●	●	●	●	6	-23,3 to -17,8	41	
							●	●						●	●	●	●	6a	-23,3 to -20,6	41	
neglecta		●					●	●		●				●	●	●	●	6a	-23,3 to -20,6	41	
pavia			●				●	●						●	●	●	●	6a	-23,3 to -20,6	41	
							●	●						●	●	●	●	6b	-20,5 to -17,8	42	
							●	●						●	●	●	●	6b	-20,5 to -17,8	42	
<b>AILANTHUS</b>																					
altissima							●	●	●	●				●	●	●	●	6	-23,3 to -17,8	43	
							●	●	●	●				●	●	●	●	6a	-23,3 to -20,6	43	
							●	●	●	●				●	●	●	●	6	-23,3 to -17,8	43	

# Tree finder

# Tree finder



Species	Small tree / spherical crown	Round / ovoid crown	Columnar crown	Weeping crown	Broad / large crown	Narrow streets	Broad streets / avenues	Landscape planting	Park tree / specimen tree	Coastal areas	Industrial areas	Shadow enduring	Little or no pruning	Tolerates pavement	Ornamental value	Valuable for bees, butterflies & birds	Drought resistant	Withstand wet periods	Hardiness zone (Europe)	Winter hardiness (°C)	Page		
<b>ALBIZIA</b>																							
julibrissin																				7b	-14,9 to -12,3	44	
																					7b	-14,9 to -12,3	44
																					7b	-14,9 to -12,3	44
																					7b	-14,9 to -12,3	44
																					7b	-14,9 to -12,3	45
<b>ALNUS</b>																							
cordata																				6b	-20,5 to -17,8	47	
glutinosa																				3	-40,0 to -34,5	47	
																				3	-40,0 to -34,5	47	
																				3a	-40,0 to -37,2	48	
																				3	-40,0 to -34,5	48	
																				3	-40,0 to -34,5	48	
																				3	-40,0 to -34,5	48	
																				3a	-40,0 to -37,2	48	
incana																				3	-40,0 to -34,5	48	
																				2	-45,5 to -40,1	49	
																				2	-45,5 to -40,1	49	
																				2	-45,5 to -40,1	49	
rubra																				6	-23,3 to -17,8	49	
'Sipkes'																				6a	-23,3 to -20,6	49	
x spaethii																				6a	-23,3 to -20,6	50	
subcordata																				6a	-23,3 to -20,6	50	
<b>AMELANCHIER</b>																							
alnifolia																				5a	-28,8 to -26,1	53	
arborea																				5a	-28,8 to -26,1	53	
canadensis																				3	-40,0 to -34,5	53	
laevis																				5a	-28,8 to -26,1	54	
																				5a	-28,8 to -26,1	54	
																				5a	-28,8 to -26,1	54	
lamarckii																				4	-34,4 to -28,9	54	
																				4	-34,4 to -28,9	54	
'Snowcloud'																				5a	-28,8 to -26,1	54	
<b>ARALIA</b>																							
elata																				3	-40,0 to -34,5	56	
<b>ARBUTUS</b>																							
unedo																				8a	-12,2 to -9,5	57	
																				8a	-12,2 to -9,5	57	



Species	Small tree / spherical crown	Round / ovoid crown	Columnar crown	Weeping crown	Broad / large crown	Narrow streets	Broad streets / avenues	Landscape planting	Park tree / specimen tree	Coastal areas	Industrial areas	Shadow enduring	Little or no pruning	Tolerates pavement	Ornamental value	Valuable for bees, butterflies & birds	Drought resistant	Withstand wet periods	Hardiness zone (Europe)	Winter hardiness (°C)	Page	
<b>ARGYROCYTISUS</b>																						
battandieri																				7	-17,7 to -12,3	58
																				7	-17,7 to -12,3	58
<b>ASIMINA</b>																						
triloba																				5	-28,8 to -23,4	59
<b>BETULA</b>																						
albosinensis																				6a	-23,3 to -20,6	61
																				6a	-23,3 to -20,6	61
																				6a	-23,3 to -20,6	61
																				6a	-23,3 to -20,6	62
alleganiensis																				3	-40,0 to -34,5	62
costata																				5a	-28,8 to -26,1	62
delavayi																				5a	-28,8 to -26,1	62
x 'Edinburgh'																				5a	-28,8 to -26,1	62
ermanii																				4	-34,4 to -28,9	63
																				4	-34,4 to -28,9	63
lenta																				3	-40,0 to -34,5	63
																				3	-40,0 to -34,5	63
maximowicziana																				3	-40,0 to -34,5	63
nigra																				4	-34,4 to -28,9	63
																				4	-34,4 to -28,9	64
																				4	-34,4 to -28,9	64
																				4	-34,4 to -28,9	64
papyrifera																				3	-40,0 to -34,5	64
																				3	-40,0 to -34,5	64
pendula																				2	-45,5 to -40,1	65
																				2	-45,5 to -40,1	65
																				2	-45,5 to -40,1	65
																				2	-45,5 to -40,1	65
																				2	-45,5 to -40,1	65
																				2	-45,5 to -40,1	65
																				2	-45,5 to -40,1	66
																				2	-45,5 to -40,1	66
																				2	-45,5 to -40,1	66
																				2	-45,5 to -40,1	66
																				2	-45,5 to -40,1	66
																				2	-45,5 to -40,1	66
																				2	-45,5 to -40,1	67
platyphylla																				2	-45,5 to -40,1	67
populifolia																				2	-45,5 to -40,1	67

# Tree finder

# Tree finder

		Small tree / spherical crown	Round / ovoid crown	Columnar crown	Weeping crown	Broad / large crown	Narrow streets	Broad streets / avenues	Landscape planting	Park tree / specimen tree	Coastal areas	Industrial areas	Shadow enduring	Little or no pruning	Tolerates pavement	Ornamental value	Valuable for bees, butterflies & birds	Drought resistant	Withstand wet periods	Hardiness zone (Europe)	Winter hardiness (°C)	Page	
pubescens						●		●	●					●	●	●	●	●	●	1	-51,1 to -48,3	67	
utilis	'Doorenbos'					●		●	●					●	●	●	●	●	●	6a	-23,3 to -20,6	68	
	'Grayswood Ghost'					●		●	●					●	●	●	●	●	●	6a	-23,3 to -20,6	68	
	'Nepalese Orange'	●						●	●			●	●	●		●	●	●	●	6a	-23,3 to -20,6	68	
<b>BROUSSONETIA</b>																							
papyrifera						●			●						●	●	●	●		7b	-14,9 to -12,3	70	
<b>CARPINUS</b>																							
betulus	'Beeckman'	●					●	●	●				●	●	●			●	●	5a	-28,8 to -26,1	71	
	'Columnaris'	●					●						●	●	●			●	●	5a	-28,8 to -26,1	71	
	'Fastigiata'						●	●	●				●	●	●			●	●	5a	-28,8 to -26,1	72	
	'Frans Fontaine'			●			●						●	●	●			●	●	5a	-28,8 to -26,1	72	
	'Lucas'		●				●						●	●	●			●	●	5a	-28,8 to -26,1	72	
	'Orange Retz'																	●	●	5a	-28,8 to -26,1	72	
	'Pendula'				●					●					●	●		●	●	5a	-28,8 to -26,1	72	
	'Purpurea'						●		●	●				●	●	●			●	●	5a	-28,8 to -26,1	72
	'Quercifolia'						●		●	●				●			●		●	●	5a	-28,8 to -26,1	73
	'Rockhampton Red'						●		●	●				●			●		●	●	5a	-28,8 to -26,1	73
	'Streetwise'			●				●		●				●	●	●	●		●	●	5a	-28,8 to -26,1	73
caroliniana	'Dries Sentinel'	●					●		●			●	●	●	●	●	●	●	●	4	-34,4 to -28,9	73	
	'Red Fall'	●					●		●			●	●	●	●	●	●	●	●	4	-34,4 to -28,9	73	
japonica	'Chinese Lantern'	●					●		●			●	●	●	●	●	●	●	●	7a	-17,7 to -15,0	74	
																				7a	-17,7 to -15,0	74	
orientalis																				7a	-17,7 to -15,0	74	
turczaninowii																				7	-17,7 to -12,3	74	
<b>CARYA</b>																							
cordiformis																				7	-17,7 to -12,3	75	
illinoensis																				7	-17,7 to -12,3	75	
ovata																				5b	-26,1 to -23,3	75	
<b>CASTANEA</b>																							
sativa	'Albomarginata'															●	●	●		6a	-23,3 to -20,6	76	
	'Anny's Summer Red'	●						●	●			●	●	●	●	●	●	●	●	6	-23,3 to -17,8	76	
	'Aspleniifolia'															●		●		6a	-23,3 to -20,6	77	
	'Glabra'															●		●		6a	-23,3 to -20,6	77	
	'Pyramidalis'															●		●		6a	-23,3 to -20,6	77	
	'Variegata'															●		●		6a	-23,3 to -20,6	77	

		Small tree / spherical crown	Round / ovoid crown	Columnar crown	Weeping crown	Broad / large crown	Narrow streets	Broad streets / avenues	Landscape planting	Park tree / specimen tree	Coastal areas	Industrial areas	Shadow enduring	Little or no pruning	Tolerates pavement	Ornamental value	Valuable for bees, butterflies & birds	Drought resistant	Withstand wet periods	Hardiness zone (Europe)	Winter hardiness (°C)	Page
<b>CATALPA</b>																						
bignonioides	'Aurea'		●				●	●	●							●	●	●		6a	-23,3 to -20,6	78
	'Nana'	●								●				●	●		●		●	6a	-23,3 to -20,6	79
	x erubescens						●	●	●							●	●	●		6a	-23,3 to -20,6	79
ovata	'Purpurea'						●	●	●						●	●	●	●		6a	-23,3 to -20,6	79
	'Slender Silhouette'				●		●			●					●		●		●	6a	-23,3 to -20,6	79
speciosa							●	●	●						●	●	●		6a	-23,3 to -20,6	79	
<b>CELTIS</b>																						
australis							●	●	●							●		●		6b	-20,5 to -17,8	80
julianae							●	●	●	●	●	●	●	●	●		●		●	6	-23,3 to -17,8	80
laevigata							●	●	●	●	●	●	●	●	●		●		●	6	-23,3 to -17,8	80
occidentalis							●	●	●						●		●		●	4	-34,4 to -28,9	81
x occidentalis	'Magnifica'						●	●	●						●		●		●	4	-34,4 to -28,9	81
sinensis							●	●	●	●	●	●	●	●	●		●		●	7a	-17,7 to -15,0	81
<b>CERCIDIPHYLLUM</b>																						
japonicum	'Pendulum'				●				●							●	●	●	●	5	-28,8 to -23,4	82
	'Rotfuchs'															●	●	●	●	5	-28,8 to -23,4	83
	magnificum															●	●			5	-28,8 to -23,4	83
<b>CERCIS</b>																						
canadensis	'Appalachian Red'															●	●	●		4	-34,4 to -28,9	84
	'Forest Pansy'															●	●	●		4	-34,4 to -28,9	84
	'Hearts of Gold'														●	●	●	●		4	-34,4 to -28,9	85
	'Red Force'														●	●	●	●		4	-34,4 to -28,9	85
	'Tennessee Pink'															●	●	●	●	4	-34,4 to -28,9	85
chinensis	'Avondale'															●	●	●		6	-23,3 to -17,8	85
siliquastrum																●	●	●		6b	-20,5 to -17,8	85
<b>x CHITALPA</b>																						
tashkentensis	'Pink Dawn'															●	●	●	●	7	-17,7 to -12,3	86
																●	●	●	●	7	-17,7 to -12,3	86
<b>CLADRASSTIS</b>																						
kentukea	'Perkins Pink'															●	●	●		4	-34,4 to -28,9	87
																●	●	●		4	-34,4 to -28,9	87
<b>CLERODENDRUM</b>																						
trichotomum																●	●	●		7a	-17,7 to -15,0	88

# Tree finder

# Tree finder

																		<b>Hardiness zone (Europe)</b>	<b>Winter hardiness (°C)</b>	<b>Page</b>
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																		<b>Hardiness zone (Europe)</b>	<b>Winter hardiness (°C)</b>	<b>Page</b>
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	'Purple Blaze'	●						●										7a	-17,7 to -15,0	88
<b>CORNUS</b>																				
	alternifolia			●				●										5b	-26,1 to -23,3	89
	controversa			●				●										6b	-20,5 to -17,8	89
	'Pagoda'			●				●										6b	-20,5 to -17,8	90
x elwinortonii	'Venus'	●						●	●									5b	-26,1 to -23,3	90
florida				●				●										6b	-20,5 to -17,8	90
	'Cherokee Chief'	●						●		●								6b	-20,5 to -17,8	90
kousa		●			●			●										6b	-20,5 to -17,8	90
	'China Girl'	●			●			●										6b	-20,5 to -17,8	90
	'Milky Way'	●			●			●										6b	-20,5 to -17,8	91
	'National'	●			●			●										6b	-20,5 to -17,8	91
	'Satomi'	●			●			●										6b	-20,5 to -17,8	91
	var. chinensis	●			●			●										6b	-20,5 to -17,8	91
mas		●			●	●		●	●									5a	-28,8 to -26,1	91
	'Aurea'	●						●										5a	-28,8 to -26,1	91
	'Golden Glory'	●						●		●								5a	-28,8 to -26,1	92
	'Variegata'	●						●										5a	-28,8 to -26,1	92
nuttallii			●		●			●										7a	-17,7 to -15,0	92
	'Eddie's White Wonder'		●		●			●										5b	-26,1 to -23,3	92
	'Monarch'		●		●			●										7a	-17,7 to -15,0	92
officalis		●			●			●			●							6b	-20,5 to -17,8	93
	'Robins Pride'	●			●			●				●						6b	-20,5 to -17,8	93
x rutgersensis	'Ascona'		●		●			●										7a	-17,7 to -15,0	93
	'Aurora'		●		●			●										7a	-17,7 to -15,0	93
	'Celestial'		●		●			●										7a	-17,7 to -15,0	93
	'Constellation'		●		●			●										7a	-17,7 to -15,0	94
	'Ruth Ellen'	●						●		●								6b	-20,5 to -17,8	94
	'Stellar Pink'	●			●			●										6b	-20,5 to -17,8	94
<b>CORYLUS</b>																				
columna				●	●		●	●	●			●	●	●	●	●	●	5b	-26,1 to -23,3	95
	'Kloon 21'			●	●		●	●	●			●	●	●	●	●	●	5b	-26,1 to -23,3	95
<b>COTINUS</b>																				
coggygria		●						●		●	●		●	●	●			6a	-23,3 to -20,6	96
	'Royal Purple'	●						●		●	●		●	●	●			6a	-23,3 to -20,6	96
<b>CRATAEGUS</b>																				
chlorosarca		●		●				●				●	●	●				6	-23,3 to -17,8	97
crus-galli	'Inermis'			●	●		●					●	●	●	●			4	-34,4 to -28,9	97

	'Salicifolia'					●	●	●						●	●	●	●	4	-34,4 to -28,9	97
x grignonensis			●					●						●	●	●	●	5a	-28,8 to -26,1	98
laevigata	'Crimson Cloud'			●				●						●	●	●	●	5a	-28,8 to -26,1	98
	'Masekii'		●					●						●	●	●	●	5a	-28,8 to -26,1	98
	'Plena'		●					●						●	●	●	●	5a	-28,8 to -26,1	98
x lavallei			●					●						●	●	●	●	5a	-28,8 to -26,1	98
x media	'Paul's Scarlet'		●					●						●	●	●	●	5a	-28,8 to -26,1	99
	'Rubra Plena'		●					●						●	●	●	●	5a	-28,8 to -26,1	99
mexicana	'Stipulacea'		●					●						●	●	●	●	7	-17,7 to -12,3	99
monogyne	'Stricta'			●		●				●				●			●	5a	-28,8 to -26,1	99
x mordenensis	'Snowbird'		●			●								●	●	●	●	5a	-28,8 to -26,1	99
	'Toba'		●					●						●	●	●	●	5a	-28,8 to -26,1	100
x persimilis	'Splendens'		●					●						●	●	●	●	5a	-28,8 to -26,1	100
phaenopyrum			●					●						●	●	●	●	5a	-28,8 to -26,1	100
pinnatifida	var. major	●				●								●	●	●	●	6a	-23,3 to -20,6	100
punctata	'Ohio Pioneer'		●			●				●	●			●	●	●	●	5a	-28,8 to -26,1	100
succulenta	'Jubilee'		●					●						●	●	●	●	5a	-28,8 to -26,1	101
viridis	'Winter King'					●		●						●	●	●	●	5a	-28,8 to -26,1	101
wattiana			●											●	●	●	●	5a	-28,8 to -26,1	101
<b>CYDONIA</b>																				
oblonga			●					●						●	●	●	●	5a	-28,8 to -26,1	102
	'Leskovacka'					●		●	●					●	●	●	●	5a	-28,8 to -26,1	102
	'Vranja'					●		●	●					●	●	●	●	5a	-28,8 to -26,1	102
<b>DAVIDIA</b>																				
involucrata			●											●	●	●	●	7a	-17,7 to -15,0	103
	'Sonoma'		●											●	●	●	●	7a	-17,7 to -15,0	103
	var. vilmoriniana		●											●	●	●	●	7a	-17,7 to -15,0	103
<b>DIOSPYROS</b>																				
kaki						●	●	●						●	●	●	●	8b	-9,4 to -6,7	104
lotus						●	●	●						●	●	●	●	6a	-23,3 to -20,6	104
virginiana			●					●						●	●	●	●	4	-34,4 to -28,9	104
<b>ELAEOAGNUS</b>																				
angustifolia			●							●	●			●		●		3	-40,0 to -34,5	105
x ebbingei			●							●	●	●		●	●	●		7a	-17,7 to -15,0	105
	'Quicksilver'		●							●	●			●		●		7a	-17,7 to -15,0	105
<b>ERIOBOTRYA</b>																				
japonica		●												●	●	●	●	8a	-12,2 to -9,5	106

# Tree finder

# Tree finder

																				Hardiness zone (Europe)	Winter hardiness (°C)	Page
<b>ERIOLOBUS</b>																						
trilobatus		<input checked="" type="checkbox"/>							<input checked="" type="checkbox"/>						<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		6a	-23,3 to -20,6	107
<b>EUCOMMIA</b>																						
ulmoides		<input checked="" type="checkbox"/>							<input checked="" type="checkbox"/>						<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		6a	-23,3 to -20,6	108
<b>EUONYMUS</b>																						
alatus		<input checked="" type="checkbox"/>						<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		4	-34,4 to -28,9	109
europaeus	'Red Cascade'		<input checked="" type="checkbox"/>						<input checked="" type="checkbox"/>						<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		4	-34,4 to -28,9	109
<b>FAGUS</b>																						
orientalis	'Iskander'		<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>							<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		6a	-23,3 to -20,6	111
sylvatica						<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		5b	-26,1 to -23,3	111
	'Anniek'		<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>					<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		5b	-26,1 to -23,3	111
	'Aspleniifolia'					<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		5b	-26,1 to -23,3	112
	'Atropunicea'					<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		5b	-26,1 to -23,3	112
	'Black Swan'				<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		5b	-26,1 to -23,3	112
	'Bornyensis'				<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		5b	-26,1 to -23,3	112
	'Cockleshell'		<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		5b	-26,1 to -23,3	112
	'Dawyck'		<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		5b	-26,1 to -23,3	112
	'Dawyck Gold'		<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		5b	-26,1 to -23,3	113
	'Dawyck Purple'		<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		5b	-26,1 to -23,3	113
	'Grandidentata'					<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		5b	-26,1 to -23,3	113
	'Latifolia'					<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		5b	-26,1 to -23,3	113
	'Pendula'				<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		5b	-26,1 to -23,3	113
	'Purple Fountain'				<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		5b	-26,1 to -23,3	113
	'Purpurea Latifolia'					<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		5b	-26,1 to -23,3	114
	'Purpurea Pendula'				<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		6a	-23,3 to -20,6	114
	'Purpurea Tricolor'					<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		5b	-26,1 to -23,3	114
	'Quercifolia'					<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		5b	-26,1 to -23,3	114
	'Riversii'					<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		5b	-26,1 to -23,3	114
	'Rohanii'		<input checked="" type="checkbox"/>						<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		5b	-26,1 to -23,3	114
	'Rohan Obelisk'		<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		5b	-26,1 to -23,3	115
	'Rotundifolia'					<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		5b	-26,1 to -23,3	115
	'Zlatia'					<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		6a	-23,3 to -20,6	115
<b>FIRMIANA</b>																						
simplex						<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		7a	-17,7 to -15,0	116
<b>FRAXINUS</b>																						
americana						<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>					<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		4	-34,4 to -28,9	117
	'Autumn Applause'					<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>					<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		4	-34,4 to -28,9	117
	'Autumn Purple'					<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>					<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		4	-34,4 to -28,9	117

																				Hardiness zone (Europe)	Winter hardiness (°C)	Page
	'Champaign County'					<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>						<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		4	-34,4 to -28,9	118
	'Empire'					<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>						<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		4	-34,4 to -28,9	118
	var. microcarpa					<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>						<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		4	-34,4 to -28,9	118
	'Royal Purple'					<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>						<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		4	-34,4 to -28,9	118
	'Skyline'					<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>						<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		4	-34,4 to -28,9	118
angustifolia						<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>						<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		6b	-20,5 to -17,8	118
	'Elegantissima'		<input checked="" type="checkbox"/>						<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		6b	-20,5 to -17,8	119
	'Monophylla'					<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>						<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		6b	-20,5 to -17,8	119
	'Pleinweg'					<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		6b	-20,5 to -17,8	119
	'Raywood'					<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		6a	-23,3 to -20,6	119
biltmoreana						<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>						<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		5b	-26,1 to -23,3	119
excelsior						<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		4	-34,4 to -28,9	120
	'Allgold'					<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>						<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		4	-34,4 to -28,9	120
	'Altena'				<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		4	-34,4 to -28,9	120
	'Atlas'				<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		4	-34,4 to -28,9	120
	'Diversifolia'				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		4	-34,4 to -28,9	120
	'Eldik'					<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		4	-34,4 to -28,9	120
	'Eureka'					<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		4	-34,4 to -28,9	121
	'Geessink'					<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		4	-34,4 to -28,9	121
	'Grift'					<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		4	-34,4 to -28,9	121
	'Hessei'		<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				

# Tree finder

# Tree finder

		Small tree / spherical crown	Round / ovoid crown	Columnar crown	Weeping crown	Broad / large crown	Narrow streets	Broad streets / avenues	Landscape planting	Park tree / specimen tree	Coastal areas	Industrial areas	Shadow enduring	Little or no pruning	Tolerates pavement	Ornamental value	Valuable for bees, butterflies & birds	Drought resistant	Withstand wet periods	Hardiness zone (Europe)	Winter hardiness (°C)	Page	
	'Patmore'					•	•						•	•	•		•	•	•	4	-34,4 to -28,9	124	
	'Prairie Spire'		•			•	•				•		•	•	•		•	•	•	4	-34,4 to -28,9	124	
	'Summit'					•	•						•	•	•		•	•	•	4	-34,4 to -28,9	125	
	'Urbanite'					•	•						•	•	•		•	•	•	4	-34,4 to -28,9	125	
	'Zundert'					•	•						•	•	•		•	•	•	4	-34,4 to -28,9	125	
xanthoxyloides	var. dumosa	•					•			•			•	•	•		•	•	•	7b	-14,9 to -12,3	125	
<b>GINKGO</b>																							
biloba						•	•	•		•		•	•	•	•		•	•	•	5a	-28,8 to -26,1	126	
	'Autumn Gold'		•				•		•	•		•	•	•	•		•	•	•	5a	-28,8 to -26,1	126	
	'Fastigiata'			•			•		•	•		•	•	•	•		•	•	•	5a	-28,8 to -26,1	126	
	'Fastigiata Blagon'			•					•	•		•	•	•	•		•	•	•	5a	-28,8 to -26,1	126	
	'Globus'	•					•		•	•		•	•	•	•		•	•	•	5a	-28,8 to -26,1	127	
	'Horizontalis'				•				•	•		•	•	•	•		•	•	•	5a	-28,8 to -26,1	127	
	'Menhir'			•			•			•		•	•	•	•		•	•	•	5a	-28,8 to -26,1	127	
	'Obelisk'			•			•			•		•	•	•	•		•	•	•	5a	-28,8 to -26,1	127	
	'Pendula'				•				•	•		•	•	•	•		•	•	•	5a	-28,8 to -26,1	127	
	'Princeton Sentry'			•			•			•		•	•	•	•		•	•	•	5a	-28,8 to -26,1	127	
	'Saratoga'					•	•		•	•		•	•	•	•		•	•	•	5a	-28,8 to -26,1	128	
	'Tremonia'			•			•			•		•	•	•	•		•	•	•	5a	-28,8 to -26,1	128	
<b>GLEDITSIA</b>																							
triacanthos						•				•							•	•	•	5a	-28,8 to -26,1	129	
	'Elegantissima'			•			•			•			•	•	•		•	•	•	5a	-28,8 to -26,1	129	
	'Imperial'		•				•			•			•	•	•		•	•	•	5a	-28,8 to -26,1	129	
	var. inermis					•	•	•		•			•	•	•		•	•	•	5a	-28,8 to -26,1	130	
	'Moraine'					•	•	•		•			•	•	•		•	•	•	5a	-28,8 to -26,1	130	
	'RUBYlace'		•							•							•	•	•	5a	-28,8 to -26,1	130	
	'Shademaster'					•	•	•		•			•	•	•		•	•	•	5a	-28,8 to -26,1	130	
	'Skyline'					•	•	•		•			•	•	•		•	•	•	5a	-28,8 to -26,1	130	
	'Spectrum'		•				•	•		•			•	•	•		•	•	•	5a	-28,8 to -26,1	130	
	'Street Keeper'		•				•			•			•	•	•		•	•	•	5a	-28,8 to -26,1	131	
	'Sunburst'		•				•	•		•			•	•	•		•	•	•	5a	-28,8 to -26,1	131	
<b>GYMNOCLADUS</b>																							
dioica						•				•							•	•	•	5a	-28,8 to -26,1	132	
<b>HALESIA</b>																							
carolina			•							•			•	•	•		•	•	•	6a	-23,3 to -20,6	133	
	var. monticola		•							•			•	•	•		•	•	•	5b	-26,1 to -23,3	133	
monticola	var. vestita		•							•			•	•	•		•	•	•	5b	-26,1 to -23,3	133	

		Small tree / spherical crown	Round / ovoid crown	Columnar crown	Weeping crown	Broad / large crown	Narrow streets	Broad streets / avenues	Landscape planting	Park tree / specimen tree	Coastal areas	Industrial areas	Shadow enduring	Little or no pruning	Tolerates pavement	Ornamental value	Valuable for bees, butterflies & birds	Drought resistant	Withstand wet periods	Hardiness zone (Europe)	Winter hardiness (°C)	Page	
<b>HEPTACODIUM</b>																							
miconoides		•							•	•							•	•	•	5	-28,8 to -23,4	135	
	'Minhep'	•							•	•							•	•	•	5	-28,8 to -23,4	135	
<b>HIBISCUS</b>																							
syriacus				•						•							•	•	•	6b	-20,5 to -17,8	136	
	'Hamabo'	•					•				•						•	•	•	6b	-20,5 to -17,8	136	
	'Oiseau Bleu'	•					•				•						•	•	•	6b	-20,5 to -17,8	136	
	'Flower Tower Purple'			•			•										•	•	•	6b	-20,5 to -17,8	137	
	'Flower Tower White'			•			•										•	•	•	6b	-20,5 to -17,8	137	
<b>HIPPOPHAE</b>																							
salicifolia	'Robert'		•					•	•	•	•						•	•	•	6b	-20,5 to -17,8	138	
<b>HOVENIA</b>																							
dulcis			•							•							•	•	•	6b	-20,5 to -17,8	139	
<b>IDESIA</b>																							
polycarpa			•							•							•	•	•	5a	-28,8 to -26,1	140	
<b>ILEX</b>																							
aquifolium			•					•		•				•	•	•	•	•	•	6a	-23,3 to -20,6	141	
	'Alaska'			•				•		•				•	•	•	•	•	•	6a	-23,3 to -20,6	141	
	'J.C. van Tol'			•				•		•							•	•	•	6a	-23,3 to -20,6	141	
aquipernyi	'Dragon Lady'			•				•		•							•	•	•	6a	-23,3 to -20,6	142	
x meservae	'Blue Stallion'			•				•		•							•	•	•	6a	-23,3 to -20,6	142	
	'Goliath'			•				•		•							•	•	•	6a	-23,3 to -20,6	142	
	'Nellie R. Stevens'			•				•		•							•	•	•	6a	-23,3 to -20,6	142	
<b>JUGLANS</b>																							
ailantifolia							•		•	•	•						•	•	•	5a	-28,8 to -26,1	143	
nigra							•		•	•	•						•	•	•	5a	-28,8 to -26,1	143	
regia							•		•	•	•						•	•	•	5b	-26,1 to -23,3	143	
	'Broadview'						•		•	•	•						•	•	•	5b	-26,1 to -23,3	144	
	'Buccaneer'						•		•	•	•						•	•	•	5b	-26,1 to -23,3	144	
	'Laciniata'						•		•	•							•	•	•	5b	-26,1 to -23,3	144	
<b>KALOPANAX</b>																							
septemlobus							•			•							•	•	•	4	-34,4 to -28,9	145	
<b>KOELREUTERIA</b>																							
paniculata			•							•							•	•	•	6b	-20,5 to -17,8	147	
	'Coral Sun'		•							•							•	•	•	6b	-20,5 to -17,8	147	
	'Fastigiata'			•						•							•	•	•	6b	-20,5 to -17,8	147	
	'September'		•							•							•	•	•	6b	-20,5 to -17,8	147	

# Tree finder



	Small tree / spherical crown	Round / ovoid crown	Columnar crown	Weeping crown	Broad / large crown	Narrow streets	Broad streets / avenues	Landscape planting	Park tree / specimen tree	Coastal areas	Industrial areas	Shadow enduring	Little or no pruning	Tolerates pavement	Ornamental value	Valuable for bees, butterflies & birds	Drought resistant	Withstand wet periods	Hardiness zone (Europe)	Winter hardiness (°C)	Page
<b>+ LABURNOCYTISUS</b>																					
adamii		●					●		●				●		●	●	●		6b	-20,5 to -17,8	148
<b>LABURNUM</b>																					
anagyroides		●							●						●	●	●		5b	-26,1 to -23,3	149
		●				●			●				●	●	●	●	●		5b	-26,1 to -23,3	149
	'Yellow Rocket'	●							●				●	●	●	●	●		5b	-26,1 to -23,3	149
x watereri		●							●						●	●	●		5b	-26,1 to -23,3	149
<b>LAGERSTROEMIA</b>																					
indica			●						●						●	●	●		8a	-12,2 to -9,5	150
x 'Muskogee'			●			●			●				●	●	●	●	●		7a	-17,7 to -15,0	150
x 'Natchez'			●			●			●				●	●	●	●	●		7a	-17,7 to -15,0	150
x 'Tuscarora'		●							●	●			●	●	●	●	●		7a	-17,7 to -15,0	151
<b>LARIX</b>																					
decidua			●				●	●	●	●		●		●		●	●	●	3	-40,0 to -34,5	152
kaempferi			●				●	●	●	●		●		●		●	●	●	5a	-28,8 to -26,1	152
	'Jacobsen's Pyramid'		●				●	●	●	●		●		●		●	●	●	5a	-28,8 to -26,1	152
<b>LIGUSTRUM</b>																					
japonicum	●								●						●	●	●		7a	-17,7 to -15,0	153
<b>LIQUIDAMBAR</b>																					
acalycina		●					●		●			●	●	●	●	●	●	●	5b	-26,1 to -23,3	155
formosana		●					●		●			●	●	●	●	●	●	●	5b	-26,1 to -23,3	155
	'Ellen'		●				●		●		●		●	●	●	●	●	●	5b	-26,1 to -23,3	155
orientalis		●					●		●			●	●	●	●	●	●	●	8	-12,2 to -6,7	156
styraciflua		●					●		●			●	●	●	●	●	●	●	5b	-26,1 to -23,3	156
	'Aurea'		●				●		●			●	●	●	●	●	●	●	5b	-26,1 to -23,3	156
	'Brotzman'		●				●		●			●	●	●	●	●	●	●	5b	-26,1 to -23,3	156
	'Brotzman Select'		●				●		●		●		●	●	●	●	●	●	5b	-26,1 to -23,3	156
	'Burgundy'		●				●		●			●	●	●	●	●	●	●	5b	-26,1 to -23,3	156
	'Festival'		●				●		●			●	●	●	●	●	●	●	5b	-26,1 to -23,3	157
	'Gum Ball'	●			●				●			●	●	●	●	●	●	●	5b	-26,1 to -23,3	157
	'Happydaze'		●				●		●			●	●	●	●	●	●	●	5b	-26,1 to -23,3	157
	'Lane Roberts'		●				●		●			●	●	●	●	●	●	●	5b	-26,1 to -23,3	157
	'Levis'		●				●		●		●		●	●	●	●	●	●	5b	-26,1 to -23,3	157
	'Moraine'		●				●		●			●	●	●	●	●	●	●	5b	-26,1 to -23,3	157
	'Oakville Highlight'		●		●				●			●	●	●	●	●	●	●	5b	-26,1 to -23,3	158
	'Paarl'		●		●				●			●	●	●	●	●	●	●	5b	-26,1 to -23,3	158
	'Palo Alto'		●				●		●			●	●	●	●	●	●	●	5b	-26,1 to -23,3	158
	'Parasol'		●				●		●			●	●	●	●	●	●	●	5b	-26,1 to -23,3	158
	'Red Star'		●				●		●			●	●	●	●	●	●	●	5b	-26,1 to -23,3	158

# Tree finder



	Small tree / spherical crown	Round / ovoid crown	Columnar crown	Weeping crown	Broad / large crown	Narrow streets	Broad streets / avenues	Landscape planting	Park tree / specimen tree	Coastal areas	Industrial areas	Shadow enduring	Little or no pruning	Tolerates pavement	Ornamental value	Valuable for bees, butterflies & birds	Drought resistant	Withstand wet periods	Hardiness zone (Europe)	Winter hardiness (°C)	Page
		●					●		●			●	●	●	●	●	●	●	5b	-26,1 to -23,3	158
	'Silver King'		●				●		●			●	●	●	●	●	●	●	5b	-26,1 to -23,3	159
	'Slender Silhouette'		●				●		●			●	●	●	●	●	●	●	5b	-26,1 to -23,3	159
	'Worplesdon'	●					●		●			●	●	●	●	●	●	●	5b	-26,1 to -23,3	159
<b>LIRIODENDRON</b>																					
chinense					●		●		●				●	●	●	●	●	●	8	-12,2 to -6,7	160
tulipifera					●		●		●				●	●	●	●	●	●	5b	-26,1 to -23,3	160
	'Aureomarginatum'				●		●		●				●	●	●	●	●	●	5b	-26,1 to -23,3	160
	'Fastigiatum'		●			●			●					●	●	●	●	●	5b	-26,1 to -23,3	161
<b>MAACKIA</b>																					
amurensis		●							●						●	●	●	●	5a	-28,8 to -26,1	162
<b>MACLURA</b>																					
pomifera					●				●						●	●	●	●	6b	-20,5 to -17,8	163
<b>MAGNOLIA</b>																					
acuminata		●					●		●						●	●	●	●	5	-28,8 to -23,4	165
americana		●							●						●	●	●	●	5	-28,8 to -23,4	165
biondii		●							●						●	●	●	●	5	-28,8 to -23,4	165
x brooklynensis		●					●		●						●	●	●	●	5	-28,8 to -23,4	165
	'Black Beauty'		●				●		●						●	●	●	●	5	-28,8 to -23,4	165
	'Elizabeth'		●				●		●						●	●	●	●	5	-28,8 to -23,4	166
	'Yellow Bird'		●				●		●						●	●	●	●	5	-28,8 to -23,4	166
'Daybreak'		●					●		●						●	●	●	●	5	-28,8 to -23,4	166
denudata		●					●		●						●	●	●	●	5	-28,8 to -23,4	166
	'Yellow River'		●				●		●						●	●	●	●	5	-28,8 to -23,4	166
'Galaxy'			●				●		●						●	●	●	●	5	-28,8 to -23,4	166
'Genie'		●							●						●	●	●	●	5	-28,8 to -23,4	167
grandiflora		●					●		●						●	●	●	●	7b	-14,9 to -12,3	167
	'Alta'		●				●		●						●	●	●	●	7b	-14,9 to -12,3	167
	'Galissonière'		●				●		●						●	●	●	●	7b	-14,9 to -12,3	167
	'Kay Parris'		●				●		●						●	●	●	●	7b	-14,9 to -12,3	167
'Heaven Scent'			●				●		●						●	●	●	●	6b	-20,5 to -17,8	167
hypoleuca					●		●		●						●	●	●	●	6b	-20,5 to -17,8	168
'Joe McDaniel'		●					●		●						●	●	●	●	6b	-20,5 to -17,8	168
'Jon Jon'			●				●		●						●	●	●	●	6b	-20,5 to -17,8	168
kobus		●					●		●						●	●	●	●	6a	-23,3 to -20,6	168
	var. borealis		●				●		●						●	●	●	●	6a	-23,3 to -20,6	168
	'Fastigiata'		●				●		●						●	●	●	●	6a	-23,3 to -20,6	169
	'Isis'		●				●		●						●	●	●	●	6a	-23,3 to -20,6	169
liliflora	●								●						●	●	●	●	6b	-20,5 to -17,8	169



# Tree finder

# Tree finder

																				Hardiness zone (Europe)	Winter hardiness (°C)	Page
x loebneri	'Leonard Messel'	●						●	●				●	●	●	●	●	●	6a	-23,3 to -20,6	169	
	'Merrill'	●						●	●				●	●	●	●	●	●	6a	-23,3 to -20,6	169	
	'Sowdrift'	●						●	●				●	●	●	●	●	●	6a	-23,3 to -20,6	170	
'Peppermint Stick'		●						●	●				●	●	●	●	●	●	6a	-23,3 to -20,6	170	
salicifolia	'Louisa Fete'		●				●		●				●	●	●	●	●	●	6a	-23,3 to -20,6	170	
sieboldii		●					●		●				●	●	●	●	●	●	6a	-23,3 to -20,6	170	
soulangiana					●				●				●	●	●	●	●	●	6	-23,3 to -17,8	170	
'Spectrum'		●						●	●				●	●	●	●	●	●	6	-23,3 to -17,8	171	
stellata		●							●				●	●	●	●	●	●	6a	-23,3 to -20,6	171	
	'Rosea'	●						●	●				●	●	●	●	●	●	6a	-23,3 to -20,6	171	
	'Royal Star'	●						●	●				●	●	●	●	●	●	6a	-23,3 to -20,6	171	
'Sunsation'		●						●	●				●	●	●	●	●	●	6a	-23,3 to -20,6	171	
'Susan'		●					●		●				●	●	●	●	●	●	6a	-23,3 to -20,6	171	
tripetala		●							●				●	●	●	●	●	●	5b	-26,1 to -23,3	172	
virginiana		●						●	●				●	●	●	●	●	●	7a	-17,7 to -15,0	172	
	'Moonglow'	●						●	●				●	●	●	●	●	●	7a	-17,7 to -15,0	172	
'Wada's Memory'		●						●	●				●	●	●	●	●	●	6a	-23,3 to -20,6	172	
'Yellow Fever'		●					●	●	●				●	●	●	●	●	●	6a	-23,3 to -20,6	172	
<b>MALUS</b>																						
'Adams'		●						●	●				●	●	●	●	●	●	5a	-28,8 to -26,1	173	
'Adirondack'			●					●	●				●	●	●	●	●	●	5a	-28,8 to -26,1	173	
'Almey'		●						●	●				●	●	●	●	●	●	3	-40,0 to -34,5	173	
baccata	'Street Parade'		●					●	●				●	●	●	●	●	●	3	-40,0 to -34,5	174	
'Braendkjaer'		●						●	●		●		●	●	●	●	●	●	3	-40,0 to -34,5	174	
'Butterball'		●							●				●	●	●	●	●	●	5	-28,8 to -23,4	174	
'Coccinella'		●							●				●	●	●	●	●	●	5	-28,8 to -23,4	174	
'Coralburst'		●							●				●	●	●	●	●	●	5	-28,8 to -23,4	174	
'Courtabri'		●							●				●	●	●	●	●	●	5a	-28,8 to -26,1	175	
'Donald Wyman'		●							●				●	●	●	●	●	●	5	-28,8 to -23,4	175	
'Evereste'		●						●	●				●	●	●	●	●	●	5	-28,8 to -23,4	175	
floribunda		●							●				●	●	●	●	●	●	4	-34,4 to -28,9	175	
'Golden Hornet'		●						●	●				●	●	●	●	●	●	5	-28,8 to -23,4	175	
'Gorgeous'		●						●	●				●	●	●	●	●	●	5	-28,8 to -23,4	175	
'Greenstar'		●						●	●				●	●	●	●	●	●	5	-28,8 to -23,4	176	
'Hopa'		●						●	●				●	●	●	●	●	●	4	-34,4 to -28,9	176	
hupehensis	'Arie Mauritz'	●							●				●	●	●	●	●	●	5	-28,8 to -23,4	176	
'Jewelcole'			●					●	●				●	●	●	●	●	●	5	-28,8 to -23,4	176	
'John Downie'		●							●				●	●	●	●	●	●	5a	-28,8 to -26,1	176	

																				Hardiness zone (Europe)	Winter hardiness (°C)	Page
'Liset'			●					●		●					●	●	●	●	4	-34,4 to -28,9	177	
'Madonna'				●				●		●					●	●	●	●	5	-28,8 to -23,4	177	
'Makamik'			●					●		●					●	●	●	●	4	-34,4 to -28,9	177	
'Mokum'				●				●		●					●	●	●	●	5	-28,8 to -23,4	177	
'Professer Sprenger'			●					●		●					●	●	●	●	4	-34,4 to -28,9	177	
'Profusion'			●					●		●					●	●	●	●	4	-34,4 to -28,9	178	
'Radiant'			●						●						●	●	●	●	3	-40,0 to -34,5	178	
'Red Baron'				●				●		●					●	●	●	●	5	-28,8 to -23,4	178	
'Red Obelisk'				●				●		●				●	●	●	●	●	5	-28,8 to -23,4	178	
'Red Sentinel'			●						●						●	●	●	●	3	-40,0 to -34,5	178	
'Robinson'					●				●						●	●	●	●	5	-28,8 to -23,4	178	
'Royalty'			●					●	●	●		●	●	●	●	●	●	●	4	-34,4 to -28,9	179	
'Rudolph'			●					●	●	●					●	●	●	●	2	-45,5 to -40,1	179	
'Sugar Tyme'				●				●		●					●	●	●	●	5	-28,8 to -23,4	179	
sylvestris								●	●	●				●	●	●	●	●	4	-34,4 to -28,9	179	
toringo								●	●	●				●	●	●	●	●	5a	-28,8 to -26,1	179	
	'Brouwers Beauty'							●	●	●				●	●	●	●	●	5a	-28,8 to -26,1	180	
	'Rosea'		●						●						●	●	●	●	5a	-28,8 to -26,1	180	
	'Scarlett'	●						●		●					●	●	●	●	5a	-28,8 to -26,1	180	
	var. sargentii		●					●		●					●	●	●	●	5a	-28,8 to -26,1	180	
tschonoskii				●				●		●					●	●	●	●	6a	-23,3 to -20,6	180	
	'Belmonte'			●				●		●					●	●	●	●	6a	-23,3 to -20,6	180	
'Van Eseltine'				●				●		●					●	●	●	●	4	-34,4 to -28,9	181	
'Vanguard'				●				●		●					●	●	●	●	3	-40,0 to -34,5	181	
'Velvet Pillar'				●				●		●					●	●	●	●	4	-34,4 to -28,9	181	
'White Angel'			●						●						●	●	●	●	4	-34,4 to -28,9	181	
'Wintergold'			●					●		●					●	●	●	●	4	-34,4 to -28,9	181	
<b>MELIA</b>																						
azedarach								●	●	●				●	●	●	●	●	7b	-14,9 to -12,3	182	
<b>MESPILUS</b>																						
germanica								●		●					●	●	●	●	5b	-26,1 to -23,3	183	
	'Bredase Reus'		●						●	●	●	●	●	●	●	●	●	●	5b	-26,1 to -23,3	183	
	'Westerveld'							●		●					●	●	●	●	5b	-26,1 to -23,3	183	
<b>METASEQUOIA</b>																						
glyptostroboides								●	●	●		●	●	●	●	●	●	●	5b	-26,1 to -23,3	184	
	'Fastigiata'							●	●	●		●	●	●	●	●	●	●	5b	-26,1 to -23,3	181	
	'Goldrush'							●	●	●		●	●	●	●	●	●	●	5b	-26,1 to -23,3	181	



# Tree finder

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	'Bunderbos'					●	●	●		●	●	●						●	●	5a	-28,8 to -26,1	205
	'De Moffart'					●	●	●		●	●	●						●	●	5a	-28,8 to -26,1	205
	'Enniger'					●		●	●		●	●						●	●	5a	-28,8 to -26,1	205
	'Honthorpa'					●		●	●		●	●						●	●	5a	-28,8 to -26,1	205
	'Schijndel'					●		●	●		●	●						●	●	5a	-28,8 to -26,1	206
	'Schubu'					●		●	●		●	●						●	●	5a	-28,8 to -26,1	206
	Tatenberg'					●		●	●		●	●						●	●	5a	-28,8 to -26,1	206
	'Witte van Haamstede'					●		●	●		●	●						●	●	5a	-28,8 to -26,1	206
tremula						●		●	●	●		●	●					●	●	2	-45,5 to -40,1	206
	'Erecta'		●				●				●	●						●	●	2	-45,5 to -40,1	206
	'Tapiau'					●		●	●		●	●						●	●	2	-45,5 to -40,1	207
tremuloides		●				●		●	●		●	●						●	●	2	-45,5 to -40,1	207
SECTION Leucoides																						
lasiocarpa						●				●	●	●						●	●	6a	-23,3 to -20,6	208
SECTION Tacamahaca																						
balsamifera						●			●	●	●	●						●	●	4	-34,4 to -28,9	209
simonii		●						●	●		●	●						●	●	4	-34,4 to -28,9	209
	'Fastigiata'		●						●		●	●						●	●	4	-34,4 to -28,9	209
trichocarpa						●			●		●	●						●	●	5a	-28,8 to -26,1	209
	'Blom'					●			●		●	●						●	●	5a	-28,8 to -26,1	209
	'Columbia River'					●			●		●	●						●	●	5a	-28,8 to -26,1	210
	'Heimbürger'					●		●			●	●						●	●	5a	-28,8 to -26,1	210
	'Trichobel'					●			●		●	●						●	●	5a	-28,8 to -26,1	210
SECTION Aigeiros																						
x berlinensis	Berlin'					●		●	●		●	●	●					●	●	4	-34,4 to -28,9	211
x canadensis	'Agathe F.'					●			●		●	●	●					●	●	4	-34,4 to -28,9	211
	'Albelo'					●			●		●	●	●					●	●	4	-34,4 to -28,9	211
	'Dano'					●			●		●	●	●					●	●	4	-34,4 to -28,9	211
	'Degrosso'					●			●		●	●	●					●	●	4	-34,4 to -28,9	211
	'Dorschkamp'					●			●		●	●	●					●	●	4	-34,4 to -28,9	212
	'Ellert'					●			●		●	●	●					●	●	4	-34,4 to -28,9	212
	'Flevo'					●			●		●	●	●					●	●	4	-34,4 to -28,9	212
	'Florence Biondi'					●			●		●	●	●					●	●	4	-34,4 to -28,9	212
	'Gaver'					●			●		●	●	●					●	●	4	-34,4 to -28,9	212
	'Gelrica'					●			●		●	●	●					●	●	4	-34,4 to -28,9	212
	'Ghoy'					●			●		●	●	●					●	●	4	-34,4 to -28,9	213
	'Gibecq'					●			●		●	●	●					●	●	4	-34,4 to -28,9	213
	'Hees'					●			●		●	●	●					●	●	4	-34,4 to -28,9	213

	'Heidemij'					●		●	●		●	●						●	●	4	-34,4 to -28,9	213
	'Isières'					●		●	●		●	●						●	●	4	-34,4 to -28,9	213
	'I 214'					●		●	●		●	●						●	●	4	-34,4 to -28,9	214
	'Koster'					●		●	●		●	●						●	●	4	-34,4 to -28,9	214
	'Marilandica'					●		●	●		●	●						●	●	4	-34,4 to -28,9	214
	'Ogy'					●		●	●		●	●						●	●	4	-34,4 to -28,9	214
	'Polargo'					●		●	●		●	●						●	●	4	-34,4 to -28,9	214
	'Primo'					●		●	●		●	●						●	●	4	-34,4 to -28,9	215
	'Robusta'					●		●	●		●	●						●	●	4	-34,4 to -28,9	215
	'Rona'					●		●	●		●	●						●	●	4	-34,4 to -28,9	215
	'Serotina'					●		●	●		●	●						●	●	4	-34,4 to -28,9	215
	'Serotina de Selys'			●			●				●	●						●	●	4	-34,4 to -28,9	215
	'Spijk'					●		●	●		●	●						●	●	4	-34,4 to -28,9	215
	'Tardif de Champagne'					●		●	●		●	●						●	●	4	-34,4 to -28,9	216
deltoides						●			●		●	●						●	●	4	-34,4 to -28,9	216
	'Purple Tower'					●			●		●	●						●	●	4	-34,4 to -28,9	216
	'Siouxland'					●			●		●	●						●	●	4	-34,4 to -28,9	216
x generosa						●			●		●	●						●	●	4	-34,4 to -28,9	216
	'Barn'					●			●		●	●						●	●	4	-34,4 to -28,9	216
	'Beaupré'					●			●		●	●						●	●	4	-34,4 to -28,9	216
	'Boelare'					●			●		●	●						●	●	4	-34,4 to -28,9	217
	'Donk'					●			●		●	●						●	●	4	-34,4 to -28,9	217
	'Hazendans'					●			●		●	●						●	●	4	-34,4 to -28,9	217
	'Hoogvorst'					●			●		●	●						●	●	4	-34,4 to -28,9	217
nigra						●			●		●	●						●	●	4	-34,4 to -28,9	217
	'Ankum'					●			●		●	●						●	●	4	-34,4 to -28,9	217
	'Brandaris'					●			●		●	●						●	●	4	-34,4 to -28,9	217
	'Italica'			●							●	●						●	●	4	-34,4 to -28,9	218
	'Loenen'					●			●		●	●						●	●	4	-34,4 to -28,9	218
	'Schoorldam'					●			●		●	●						●	●	4	-34,4 to -28,9	218
	'Vereecken'		●						●		●	●						●	●	4	-34,4 to -28,9	218
	'Wolterson'					●			●		●	●						●	●	4	-34,4 to -28,9	218
UNCLASSIFIED crosses																						
	'Bakan'					●			●		●	●						●	●	4	-34,4 to -28,9	219
	'Bellebeek'					●			●		●	●						●	●	4	-34,4 to -28,9	219
	'Bello'					●			●		●	●						●	●	4	-34,4 to -28,9	219
	'Dender'					●			●		●	●						●	●	4	-34,4 to -28,9	219
	'Grimminge'					●			●		●	●						●	●	4	-34,4 to -28,9	219
	'Grosso'					●			●		●	●						●	●	4	-34,4 to -28,9	220



# Tree finder

	Small tree / spherical crown	Round / ovoid crown	Columnar crown	Weeping crown	Broad / large crown	Narrow streets	Broad streets / avenues	Landscape planting	Park tree / specimen tree	Coastal areas	Industrial areas	Shadow enduring	Little or no pruning	Tolerates pavement	Ornamental value	Valuable for bees, butterflies & birds	Drought resistant	Withstand wet periods	Hardiness zone (Europe)	Winter hardiness (°C)	Page
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# Tree finder

	Small tree / spherical crown	Round / ovoid crown	Columnar crown	Weeping crown	Broad / large crown	Narrow streets	Broad streets / avenues	Landscape planting	Park tree / specimen tree	Coastal areas	Industrial areas	Shadow enduring	Little or no pruning	Tolerates pavement	Ornamental value	Valuable for bees, butterflies & birds	Drought resistant	Withstand wet periods	Hardiness zone (Europe)	Winter hardiness (°C)	Page
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'Umineko'			●						●					●	●	●	●	●	6	-23,3 to -17,8	235
virginiana		●					●		●				●	●	●	●	●	●	3	-40,0 to -34,5	235
	'Canada Red'																		3	-40,0 to -34,5	235
	'Shubert'	●							●					●	●	●	●	●	3	-40,0 to -34,5	235
x yedoensis						●		●	●					●	●	●	●	●	6a	-23,3 to -20,6	236
	'Akebono'					●		●	●					●	●	●	●	●	6a	-23,3 to -20,6	236
	'Ivensii'					●		●	●					●	●	●	●	●	6a	-23,3 to -20,6	236
	'Melstar'		●			●		●	●				●	●	●	●	●	●	6a	-23,3 to -20,6	236
	'Shidare-Yoshino'			●				●	●					●	●	●	●	●	6a	-23,3 to -20,6	236
<b>PSEUDOCYDONIA</b>																					
sinensis			●			●		●	●	●			●		●	●	●	●	6	-23,3 to -17,8	237
<b>PTELEA</b>																					
trifoliata		●							●					●	●	●	●	●	5a	-28,8 to -26,1	238
<b>PTEROCARYA</b>																					
fraxinifolia					●		●		●	●				●	●	●	●	●	6b	-20,5 to -17,8	239
	var. dumosa		●												●	●	●	●	6b	-20,5 to -17,8	239
	'Heereplein'					●		●	●	●			●	●	●	●	●	●	6b	-20,5 to -17,8	239
x rehderiana	'Fern Leaf'					●		●	●	●			●	●	●	●	●	●	6b	-20,5 to -17,8	239
stenoptera						●			●					●	●	●	●	●	6b	-20,5 to -17,8	240
<b>PTEROSTYRAX</b>																					
corymbosa		●							●						●	●	●	●	6a	-23,3 to -20,6	241
hispidia		●							●						●	●	●	●	6a	-23,3 to -20,6	241
<b>PYRUS</b>																					
betulifolia			●						●					●	●	●	●	●	5a	-28,8 to -26,1	242
calleryana	'Aristocrat'		●						●	●				●	●	●	●	●	5a	-28,8 to -26,1	242
	'Autumn Blaze'		●				●		●	●				●	●	●	●	●	5a	-28,8 to -26,1	242
	'Bradford'		●						●	●				●	●	●	●	●	6a	-23,3 to -20,6	243
	'Capital'		●						●	●				●	●	●	●	●	6a	-23,3 to -20,6	243
	'Chanticleer'		●				●		●	●				●	●	●	●	●	5b	-26,1 to -23,3	243
	'Early Red'		●				●		●	●				●	●	●	●	●	5b	-26,1 to -23,3	243
	'New Bradford'		●				●		●	●				●	●	●	●	●	5b	-26,1 to -23,3	243
	'Redspire'		●				●		●	●				●	●	●	●	●	5b	-26,1 to -23,3	244
	'Trinity'		●				●		●	●				●	●	●	●	●	5b	-26,1 to -23,3	244
	'Valzam'			●			●		●	●				●	●	●	●	●	5b	-26,1 to -23,3	244
	'Whitehouse'		●						●	●				●	●	●	●	●	5b	-26,1 to -23,3	244
x canescens			●						●					●	●	●	●	●	6	-23,3 to -17,8	244
communis	'Beech Hill'		●				●		●	●				●	●	●	●	●	5a	-28,8 to -26,1	244
	subsp. caucasica		●						●	●				●	●	●	●	●	5a	-28,8 to -26,1	245
elaagnifolia kotschyana			●				●		●	●				●	●	●	●	●	5a	-28,8 to -26,1	245

nivalis		●							●						●	●	●	●	6a	-23,3 to -20,6	245
	'Catalia'		●						●						●	●	●	●	6a	-23,3 to -20,6	245
regelii		●							●						●	●	●	●	5	-28,8 to -23,4	245
salicifolia	'Pendula'		●						●						●	●	●	●	5b	-26,1 to -23,3	245
serrulata		●							●						●	●	●	●	6	-23,3 to -17,8	245
<b>QUERCUS</b>																					
acutissima									●						●	●	●	●	6	-23,3 to -17,8	246
alba									●		●				●	●	●	●	5	-28,8 to -23,4	246
	'Wieting'								●		●				●	●	●	●	5	-28,8 to -23,4	246
bicolor									●						●	●	●	●	4	-34,4 to -28,9	247
x bimundorum	'Crimson Spire'		●						●						●	●	●	●	5	-28,8 to -23,4	247
buckleyi			●						●						●	●	●	●	5	-28,8 to -23,4	247
x bushii	'Seattle Trident'		●						●						●	●	●	●	7a	-17,7 to -15,0	247
castaneifolia									●						●	●	●	●	7a	-17,7 to -15,0	248
	'Greenspire'								●						●	●	●	●	7a	-17,7 to -15,0	248
cerris									●						●	●	●	●	6a	-23,3 to -20,6	248
	'Marvellous'		●						●						●	●	●	●	6a	-23,3 to -20,6	248
coccifera			●						●						●	●	●	●	5b	-26,1 to -23,3	248
coccinea									●						●	●	●	●	5b	-26,1 to -23,3	249
	'Splendens'								●						●	●	●	●	5b	-26,1 to -23,3	249
'Columna'			●						●						●	●	●	●	5a	-28,8 to -26,1	249
dentata			●						●						●	●	●	●	6a	-23,3 to -20,6	249
	'Carl Ferris Miller'		●						●						●	●	●	●	6a	-23,3 to -20,6	249
	'Sir Harold Hillier'		●						●						●	●	●	●	6a	-23,3 to -20,6	249
ellipsoidalis									●						●	●	●	●	4	-34,4 to -28,9	250
frainetto									●						●	●	●	●	6a	-23,3 to -20,6	250
	'Trump'		●						●						●	●	●	●	6a	-23,3 to -20,6	250
x hispanica			●						●						●	●	●	●	7	-17,7 to -12,3	250
	'Ambrozyana'		●						●						●	●	●	●	7	-17,7 to -12,3	250
	'Fullhamensis'		●						●						●	●	●	●	7	-17,7 to -12,3	250
	'Lucombeana'		●						●						●	●	●	●	7	-17,7 to -12,3	251
	'Wageningen'		●						●						●	●	●	●	7	-17,7 to -12,3	251
x ilex			●						●						●	●	●	●	8a	-12,2 to -9,5	251
imbricaria									●						●	●	●	●	5b	-26,1 to -23,3	251
libani									●						●	●	●	●	6b	-20,5 to -17,8	251
'Macon'									●						●	●	●	●	6a	-23,3 to -20,6	251
macranthera									●						●	●	●	●	6a	-23,3 to -20,6	252
macrocarpa			●						●						●	●	●	●	6a	-23,3 to -20,6	252

# Tree finder

# Tree finder

		Small tree / spherical crown	Round / ovoid crown	Columnar crown	Weeping crown	Broad / large crown	Narrow streets	Broad streets / avenues	Landscape planting	Park tree / specimen tree	Coastal areas	Industrial areas	Shadow enduring	Little or no pruning	Tolerates pavement	Ornamental value	Valuable for bees, butterflies & birds	Drought resistant	Withstand wet periods	Hardiness zone (Europe)	Winter hardiness (°C)	Page	
'Mauri'																				5a	-28,8 to -26,1	252	
myrsinifolia																					6a	-23,3 to -20,6	252
nigra																					6	-23,3 to -17,8	252
palustris																					5a	-28,8 to -26,1	252
	'Green Dwarf'																				5a	-28,8 to -26,1	253
	'Green Pillar'																				5a	-28,8 to -26,1	253
	'Helmond's Red Globe'																				5a	-28,8 to -26,1	253
petraea																					5	-28,8 to -23,4	253
	'Eastcolumn'																				5a	-28,8 to -26,1	253
	'Mespilifolia'																				5a	-28,8 to -26,1	254
phellos																					6b	-20,5 to -17,8	254
	'Hightower'																				6b	-20,5 to -17,8	254
	'Upperton'																				6b	-20,5 to -17,8	254
pinus																					6b	-20,5 to -17,8	254
pubescens																					6a	-23,3 to -20,6	255
robur																					5a	-28,8 to -26,1	255
	'Alpha'																				5a	-28,8 to -26,1	255
	'Beta'																				5a	-28,8 to -26,1	255
	'Concordia'																				5a	-28,8 to -26,1	255
	'Cupressoides'																				5a	-28,8 to -26,1	255
	'Fastigiata'																				5a	-28,8 to -26,1	256
	'Fastigiata Koster'																				5a	-28,8 to -26,1	256
	'Gamma'																				5a	-28,8 to -26,1	256
	'Pectinata'																				5a	-28,8 to -26,1	256
	'Regal Prince'																				5a	-28,8 to -26,1	256
	'Timuki'																				5a	-28,8 to -26,1	256
rubra																					5a	-28,8 to -26,1	257
	'Aurea'																				5a	-28,8 to -26,1	257
	'Boltes Gold'																				5a	-28,8 to -26,1	257
	'Magic Fire'																				5a	-28,8 to -26,1	257
rysophylla	'Maya'																				6	-23,3 to -17,8	257
x sargentii	'Thomas'																				5a	-28,8 to -26,1	258
shumardii																					5	-28,8 to -23,4	258
texana	New Madrid Group																				6b	-20,5 to -17,8	258
x turneri	'Pseudoturneri'																				7b	-14,9 to -12,3	258
velutina	'Albertsii'																				5a	-28,8 to -26,1	258
x warei	'Chimney Fire'																				5a	-28,8 to -26,1	259
	'Nadler'																				5a	-28,8 to -26,1	259

		Small tree / spherical crown	Round / ovoid crown	Columnar crown	Weeping crown	Broad / large crown	Narrow streets	Broad streets / avenues	Landscape planting	Park tree / specimen tree	Coastal areas	Industrial areas	Shadow enduring	Little or no pruning	Tolerates pavement	Ornamental value	Valuable for bees, butterflies & birds	Drought resistant	Withstand wet periods	Hardiness zone (Europe)	Winter hardiness (°C)	Page		
	'Windcandle'																				5a	-28,8 to -26,1	259	
<b>QUILLAJA</b>																								
saponaria																						7b	-14,9 to -12,3	260
<b>RHUS</b>																								
potaninii																						4	-34,4 to -28,9	261
typhina																						4	-34,4 to -28,9	261
<b>ROBINIA</b>																								
x ambigua	'Decaisneana'																					3	-40,0 to -34,5	262
	'Rozsaszin AC'																					3	-40,0 to -34,5	262
x margaretta	'Pink Cascade'																					5	-28,8 to -23,4	263
pseudoacacia																						5a	-28,8 to -26,1	263
	'Appalachia'																					5a	-28,8 to -26,1	263
	'Bessoniana'																					5a	-28,8 to -26,1	263
	'Coluteoides'																					5a	-28,8 to -26,1	263
	'Frisia'																					5a	-28,8 to -26,1	263
	'Lombarts'																					5a	-28,8 to -26,1	264
	'Myrtifolia'																					5a	-28,8 to -26,1	264
	'Nyrsegi'																					5a	-28,8 to -26,1	264
	'Pyramidalis'																					5a	-28,8 to -26,1	264
	'Rozyskiana'																					5a	-28,8 to -26,1	264
	'Sandraudiga'																					5a	-28,8 to -26,1	264
	'Semperflorens'																					5a	-28,8 to -26,1	265
	'Tortuosa'																					5a	-28,8 to -26,1	265
	'Umbraculifera'																					5a	-28,8 to -26,1	265
	'Unifoliola'																					5a	-28,8 to -26,1	265
x slavini	'Hillieri'																					5a	-28,8 to -26,1	265
viscosa																						5a	-28,8 to -26,1	265
<b>SALIX</b>																								
acutifolia	'Pendulifolia'																					4	-34,4 to -28,9	266
alba																						4	-34,4 to -28,9	266
	'Amstelveen'																					4	-34,4 to -28,9	266
	'Barlo'																					4	-34,4 to -28,9	266
	'Belders'																					4	-34,4 to -28,9	267
	'Bredevoort'																					4	-34,4 to -28,9	267
	'Chermesina'																					4	-34,4 to -28,9	267
	'Drakenburg'																					4	-34,4 to -28,9	267
	'Green Valley'																					4	-34,4 to -28,9	267
	'Het Goor'																					4	-34,4 to -28,9	267

# Tree finder

# Tree finder

	Small tree / spherical crown	Round / ovoid crown	Columnar crown	Weeping crown	Broad / large crown	Narrow streets	Broad streets / avenues	Landscape planting	Park tree / specimen tree	Coastal areas	Industrial areas	Shadow enduring	Little or no pruning	Tolerates pavement	Ornamental value	Valuable for bees, butterflies & birds	Drought resistant	Withstand wet periods	Hardiness zone (Europe)	Winter hardiness (°C)	Page
'Lichtenvoorde'			●					●	●	●							●	●	4	-34,4 to -28,9	267
'Limpde'			●					●	●	●							●	●	4	-34,4 to -28,9	268
'Lieveldde'					●			●	●	●							●	●	4	-34,4 to -28,9	268
'Red Hunter'				●	●			●	●								●	●	4	-34,4 to -28,9	268
'Rockanje'					●			●	●	●							●	●	4	-34,4 to -28,9	268
'Sericea'					●				●						●		●	●	4	-34,4 to -28,9	268
'Vitellina'					●			●	●						●		●	●	4	-34,4 to -28,9	268
babylonica				●				●	●						●		●	●	5b	-26,0 to -23,4	268
'Tortuosa'			●					●	●						●		●	●	5b	-26,0 to -23,4	269
'Umbraculifera'		●						●	●						●		●	●	5b	-26,0 to -23,4	269
pentandra		●						●	●	●					●		●	●	5b	-26,0 to -23,4	269
rubens					●			●	●	●							●	●	4	-34,4 to -28,9	269
x sepulcralis				●				●							●		●	●	5a	-28,8 to -26,1	269
<b>SAMBUCUS</b>																					
nigra			●		●						●	●	●	●	●	●	●	●	5a	-28,8 to -26,1	270
<b>SASSAFRAS</b>																					
albidum		●						●							●	●	●	5b	-26,0 to -23,4	271	
<b>SEQUOIA</b>																					
sempervirens					●			●	●	●		●			●		●	●	8a	-12,2 to -9,5	272
<b>SEQUIADENDRON</b>																					
giganteum					●			●	●			●			●		●	●	7a	-17,7 to -15,0	273
'Glaucum'					●			●	●			●			●		●	●	7a	-17,7 to -15,0	273
<b>SORBUS</b>																					
alnifolia			●					●				●			●	●	●	5a	-28,8 to -26,1	274	
aria					●			●					●	●	●	●	●	5a	-28,8 to -26,1	274	
'Favorit'			●		●			●				●	●	●	●	●	●	5a	-28,8 to -26,1	274	
'Gigantea'					●			●						●	●	●	●	5a	-28,8 to -26,1	274	
'Lutescens'					●			●						●	●	●	●	5a	-28,8 to -26,1	275	
'Magnifica'					●			●						●	●	●	●	5a	-28,8 to -26,1	275	
'Majestica'					●			●						●	●	●	●	5a	-28,8 to -26,1	275	
x arnoldiana			●					●						●	●	●	●	6a	-23,3 to -20,6	275	
'Schouten'			●		●			●				●	●	●	●	●	●	6a	-23,3 to -20,6	275	
aucuparia					●			●	●	●				●	●	●	●	4	-34,4 to -28,9	275	
'Aspleniifolia'					●			●	●	●				●	●	●	●	4	-34,4 to -28,9	276	
'Autumn Spire'			●		●			●				●	●	●	●	●	●	4	-34,4 to -28,9	276	
'Edulis'					●			●	●	●				●	●	●	●	4	-34,4 to -28,9	276	
'Fastigiata'			●		●			●	●	●				●	●	●	●	4	-34,4 to -28,9	276	
'Fingerprint'			●		●			●						●	●	●	●	4	-34,4 to -28,9	276	

	Small tree / spherical crown	Round / ovoid crown	Columnar crown	Weeping crown	Broad / large crown	Narrow streets	Broad streets / avenues	Landscape planting	Park tree / specimen tree	Coastal areas	Industrial areas	Shadow enduring	Little or no pruning	Tolerates pavement	Ornamental value	Valuable for bees, butterflies & birds	Drought resistant	Withstand wet periods	Hardiness zone (Europe)	Winter hardiness (°C)	Page
'Rossica Major'		●					●		●	●					●	●	●	●	4	-34,4 to -28,9	276
'Sheerwater Seedling'			●						●		●				●	●	●	●	4	-34,4 to -28,9	277
'Wettra'			●				●								●	●	●	●	4	-34,4 to -28,9	277
'Xanthocarpa'			●					●	●	●					●	●	●	●	4	-34,4 to -28,9	277
'Chinese Lace'		●						●	●	●					●	●	●	●	6a	-23,3 to -20,6	277
commixta					●			●	●						●	●	●	●	6a	-23,3 to -20,6	277
'Belmonte'			●					●	●						●	●	●	●	6a	-23,3 to -20,6	277
devoniensis			●					●	●						●	●	●	●	5	-28,8 to -23,4	278
discolor			●					●	●						●	●	●	●	5	-28,8 to -23,4	278
'Dodong'			●					●	●						●	●	●	●	5	-28,8 to -23,4	278
domestica			●				●		●						●	●	●	●	5b	-26,0 to -23,4	278
folgneri			●						●						●	●	●	●	5b	-26,0 to -23,4	278
'Emiel'			●						●						●	●	●	●	5b	-26,0 to -23,4	278
hupehensis			●						●						●	●	●	●	5	-28,8 to -23,4	279
hybrida			●						●						●	●	●	●	5a	-28,8 to -26,1	279
x incana			●						●	●					●	●	●	●	5a	-28,8 to -26,1	279
intermedia					●			●	●	●					●	●	●	●	5a	-28,8 to -26,1	279
'Brouwers'					●			●	●	●					●	●	●	●	5a	-28,8 to -26,1	279
'Joseph Rock'			●						●						●	●	●	●	6a	-23,3 to -20,6	279
latifolia			●				●		●	●	●				●	●	●	●	5a	-28,8 to -26,1	280
'Henk Vink'			●						●	●					●	●	●	●	5a	-28,8 to -26,1	280
'Sunshine'			●						●						●	●	●	●	5a	-28,8 to -26,1	280
thibetica			●						●						●	●	●	●	8	-12,2 to -6,7	280
x thuringiaca			●						●			●			●	●	●	●	5b	-26,0 to -23,4	280
'Fastigiata'			●						●						●	●	●	●	5b	-26,0 to -23,4	281
torminalis					●			●							●	●	●	●	5b	-26,0 to -23,4	281
vilmorinii			●						●						●	●	●	●	6a	-23,3 to -20,6	281
<b>STAPHYLEA</b>																					
pinnata			●						●						●	●	●	●	6a	-23,3 to -20,6	282
<b>STEWARTIA</b>																					
pseudocamellia			●						●						●	●	●	●	6b	-20,5 to -17,8	283
rostrata			●						●			●			●	●	●	●	6b	-20,5 to -17,8	283
<b>STYPHNOLOBIUM</b>																					
japonicum					●			●							●	●	●	●	6a	-23,3 to -20,6	285
'Columnaris'			●				●		●						●	●	●	●	6a	-23,3 to -20,6	285
'Fastigiata'			●						●						●	●	●	●	6a	-23,3 to -20,6	285
'Fleright'			●						●						●	●	●	●	6a	-23,3 to -20,6	286
'Golden Standard'			●						●						●	●	●	●	6a	-23,3 to -20,6	286





# Tree finder

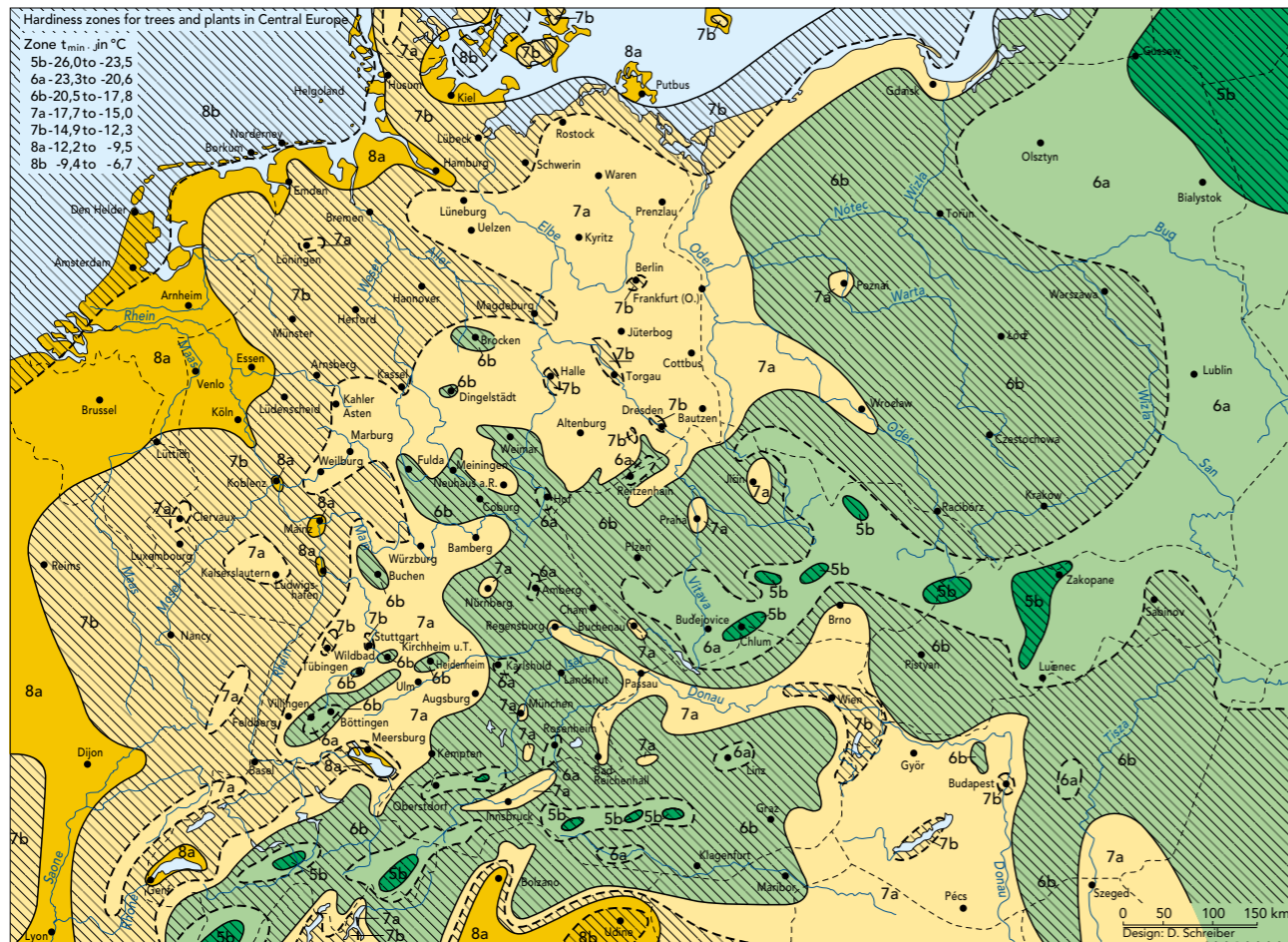
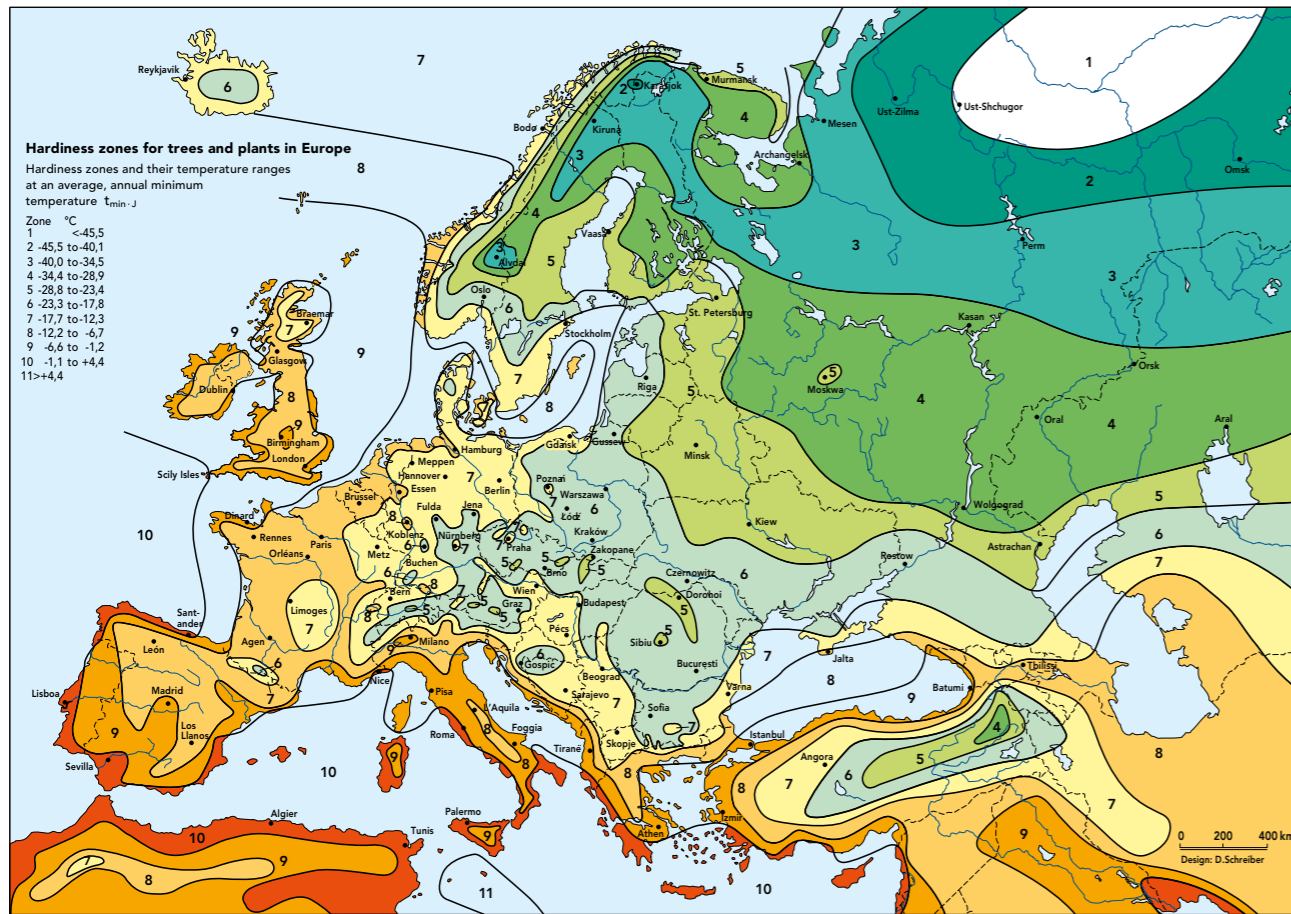
# Tree finder

		Small tree / spherical crown	Round / ovoid crown	Columnar crown	Weeping crown	Broad / large crown	Narrow streets	Broad streets / avenues	Landscape planting	Park tree / specimen tree	Coastal areas	Industrial areas	Shadow enduring	Little or no pruning	Tolerates pavement	Ornamental value	Valuable for bees, butterflies & birds	Drought resistant	Withstand wet periods	Hardiness zone (Europe)	Winter hardiness (°C)	Page
	'Wandell'					●	●		●	●	●				●	●	●	●	●	6a	-23,3 to -20,6	303
<b>TOONA</b>																						
sinensis			●			●			●							●	●	●	●	6b	-20,5 to -17,8	304
	'Flamingo'		●			●			●							●	●	●	●	6b	-20,5 to -17,8	304
<b>ULMUS</b>																						
americana	'Princeton'		●				●	●	●	●	●	●	●	●	●	●	●	●	●	5	-28,8 to -23,4	305
	'Arno'		●				●	●	●	●	●	●	●	●	●	●	●	●	●	5	-28,8 to -23,4	305
	'Camperdownii'				●				●	●	●	●	●	●		●	●	●	●	5a	-28,8 to -26,1	305
	'Clusius'			●			●	●		●	●				●		●	●	●	5a	-28,8 to -26,1	306
	'Columella'			●			●			●	●				●		●	●	●	5a	-28,8 to -26,1	306
	'Dodoens'					●	●			●	●				●	●	●	●	●	5a	-28,8 to -26,1	306
	'Fiorente'					●		●	●	●	●				●	●	●	●	●	5a	-28,8 to -26,1	306
	'Frontier'		●				●	●	●	●	●				●	●	●	●	●	5a	-28,8 to -26,1	307
	glabra					●			●	●					●		●	●	●	5a	-28,8 to -26,1	307
	'Exoniensis'					●	●		●	●	●				●	●	●	●	●	5a	-28,8 to -26,1	307
	'Lutescens'					●			●	●					●		●	●	●	5a	-28,8 to -26,1	307
	'Pendula'				●				●	●	●				●	●	●	●	●	5a	-28,8 to -26,1	307
x hollandica	'Commelin'					●	●	●		●	●				●	●	●	●	●	5a	-28,8 to -26,1	308
	'Dampieri'		●			●			●	●	●				●	●	●	●	●	5a	-28,8 to -26,1	308
	'Groeneveld'		●			●	●		●	●	●				●	●	●	●	●	5a	-28,8 to -26,1	308
	'Pioneer'					●	●		●	●					●	●	●	●	●	5a	-28,8 to -26,1	308
	'Vegeta'					●	●	●	●	●					●		●	●	●	5a	-28,8 to -26,1	308
	'Wredei'		●			●			●	●	●				●	●	●	●	●	5a	-28,8 to -26,1	309
'Homestead'						●	●		●	●	●				●	●	●	●	●	5a	-28,8 to -26,1	309
japonica	'Triumph'		●				●	●		●	●				●	●	●	●	●	5a	-28,8 to -26,1	309
laevis						●			●	●					●		●	●	●	5a	-28,8 to -26,1	309
	'Helena'					●	●		●	●	●				●		●	●	●	5a	-28,8 to -26,1	309
'Lobel'						●	●	●		●	●				●		●	●	●	5a	-28,8 to -26,1	310
'Lutece'			●				●		●	●	●				●	●	●	●	●	5a	-28,8 to -26,1	310
minor						●			●	●					●		●	●	●	5a	-28,8 to -26,1	310
	'Christine Buisman'			●			●		●	●	●				●		●	●	●	5a	-28,8 to -26,1	310
	'Hoersholmiensis'					●			●						●		●	●	●	5a	-28,8 to -26,1	311
	'Sarniensis'					●	●		●	●	●				●	●	●	●	●	5a	-28,8 to -26,1	311
	'Umbraculifera'		●				●		●	●					●	●	●	●	●	5a	-28,8 to -26,1	311
'Morfeo'						●		●	●	●	●				●	●	●	●	●	5a	-28,8 to -26,1	311
'New Horizon'						●	●	●	●	●	●				●		●	●	●	5a	-28,8 to -26,1	311
'Plantijn'						●	●	●		●	●				●		●	●	●	5a	-28,8 to -26,1	312
'Plinio'						●		●	●	●	●				●		●	●	●	5a	-28,8 to -26,1	312

		Small tree / spherical crown	Round / ovoid crown	Columnar crown	Weeping crown	Broad / large crown	Narrow streets	Broad streets / avenues	Landscape planting	Park tree / specimen tree	Coastal areas	Industrial areas	Shadow enduring	Little or no pruning	Tolerates pavement	Ornamental value	Valuable for bees, butterflies & birds	Drought resistant	Withstand wet periods	Hardiness zone (Europe)	Winter hardiness (°C)	Page
	'Rebella'		●					●	●	●	●				●		●	●	●	5a	-28,8 to -26,1	312
	'Rebona'					●		●	●	●	●				●		●	●	●	5a	-28,8 to -26,1	312
	'Regal'					●		●	●	●	●				●		●	●	●	5a	-28,8 to -26,1	312
	'San Zanobi'					●		●	●	●	●				●		●	●	●	5a	-28,8 to -26,1	313
	'Sapporo Autumn Gold'							●	●	●	●				●	●	●	●	●	5a	-28,8 to -26,1	313
	'Urban'					●		●	●	●	●				●	●	●	●	●	5a	-28,8 to -26,1	313
	'Vada'					●		●	●	●	●				●	●	●	●	●	5a	-28,8 to -26,1	313
<b>ZANTHOXYLUM</b>																						
piperitum			●						●						●		●	●	●	6	-23,3 to -17,8	314
simulans			●						●						●		●	●	●	6	-23,3 to -17,8	314
<b>ZELKOVA</b>																						
carpinifolia	'Pyramidalis'			●			●		●	●					●	●	●	●	●	6a	-23,3 to -20,6	315
serrata						●		●		●					●	●	●	●	●	6a	-23,3 to -20,6	315
	'Fastigiata'			●			●								●	●	●	●	●	6a	-23,3 to -20,6	315
	'Flekova'					●		●		●					●	●	●	●	●	6a	-23,3 to -20,6	316
	'Halka'					●		●	●	●					●	●	●	●	●	6a	-23,3 to -20,6	316
	'Musashino'			●				●		●					●	●	●	●	●	6a	-23,3 to -20,6	316
	'Urban Ruby'					●		●	●	●					●	●	●	●	●	6a	-23,3 to -20,6	316
	'Village Green'		●					●	●	●					●	●	●	●	●	6a	-23,3 to -20,6	316
<b>ZIZIPHUS</b>																						
jujuba			●						●						●		●	●	●	8	-12,2 to -6,7	317
'Lang'			●						●						●		●	●	●	8	-12,2 to -6,7	317
'Li'			●						●						●		●	●	●	8	-12,2 to -6,7	317

# Hardiness zones

# Tree shapes



Standard clear stem



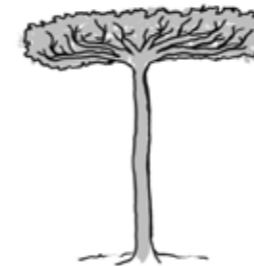
Half standard



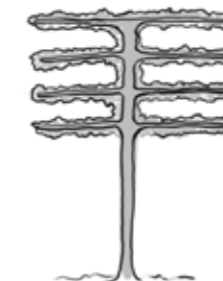
Low stem



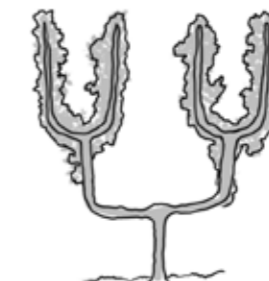
Feathered



Roof shape



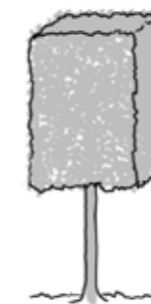
Espalier



Double U shape



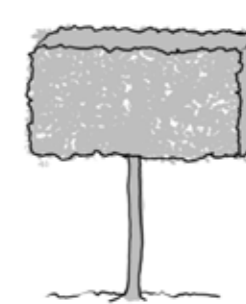
Palmette oblique



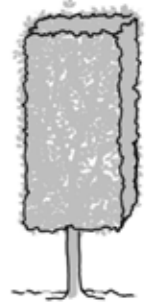
Box head shape



Cube shape



Pleached



Screen



Pollarded



Multi-stem



Multi-stem umbrella



Multi-stem roof

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### **Bibliography**

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