



Botanica

The illustrated A-Z of over 10,000 garden
plants and how to cultivate them

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Major Plant Groups

Annuals & Perennials

Planting Combinations

By combining perennials with annuals in a more informal manner, the garden loses that 'all or nothing' effect which is so evident when a bed of annuals has 'finished' and is again planted out with tiny seedlings. By placing clumps of perennials beside drifts of annuals the eye is drawn from one accent to another, say from a group of low-growing annuals in front to the taller perennial flower spikes behind. Annuals are marvelous for providing a festive welcome to an entrance or a splash of color to a shrub border when the garden is to be used for a special event. For a continuous effect, group them with perennials, staggering the flowering times of the plants so that when a small pocket of annuals is nearly past its prime a perennial just behind is about to flower. This complementary display can take a few seasons to achieve, as many perennials need two years to bloom, but don't give up as experimenting in this way is one of the most rewarding aspects of gardening.

Apart from color combinations within a garden, try to tie in the house color to that of a garden display so they complement one another: a red or red-orange toned house looks good sur-

rounded by bright oranges, yellows, rusty reds and creams, while a white or pastel painted house blends well with soft blue, mauve, pink and white flowers plus masses of silver foliage.

Just as important as linking the house to the garden, is the overall siting of the garden beds. Most annuals demand full sun to flower well so be sure to choose an aspect where the plants will receive as much light, particularly morning sun, as possible. Give them generously wide beds ensuring the colorful display will not be overwhelmed by shrub foliage or robbed of nutrients by the roots of nearby permanent plants.

Instant Color Effects

One of the most welcome developments in recent years has been the increase in the number of annuals and perennials available in 'instant color' pots. Once red geraniums were the only available way to provide a splash of color in early spring; now, right through the seasons a pot or tray of mature flowering annuals can be purchased to add instant color to a garden dead spot or patio. And don't overlook hanging baskets filled with annuals to highlight a garden color scheme. If potting up seedlings to make a basket full of your own instant color, take care to choose plants that will fall gracefully over the

edge of the basket. If you are using large pots or tubs, both upright and sprawling plant types can produce a very decorative display.

Annuals, by their very nature, aim to set as many seeds as possible within a very short life span. Gardeners can extend the flowering period by cutting the blooms for indoor use or nipping off faded flowers before they set seed and so decide it's all over for another year. If you follow this procedure, remember it is good practice to provide regular nourishment to the plants in the form of a quick-acting fertilizer designed to promote flowers rather than foliage growth.

Soil Preparation and Planting

To ensure strong growth and maximum flowering, prepare your garden beds soundly. If the area to be planted has not been dug over before, it is a good idea to double dig. This means that the topsoil, say to a fork's depth, is weeded and put aside and the soil under this layer is dug over to the depth of a fork. Humus, such as well-rotted manure, or compost can be added to this layer to help break up heavy clay particles or to add moisture-retentive qualities to sandy soils. This double digging is particularly beneficial to perennials which may be left in the same position for some years. Replace the top layer of

RIGHT: A display of annuals like these pansies and double daisies takes a lot from the soil, which you have to put back if you want to repeat it.

BELOW: With their large, brightly colored, showy pea flowers, Lupinus species and hybrids will enhance any garden.



Palms

The palms are, by contrast to ferns, true trees, although usually they grow on a single unbranched trunk, with a crown of large leaves at the top. (Some form clumps of stems, but these are normally unbranched.) These leaves can be long and divided, like giant fern leaves, or they can be rounded and fan shaped, the two types being called 'feather' or 'fan' palms. They mostly grow in the company of other trees, so they like the shade, at least when they are young; but there are few among the taller palms that insist on it. Palms vary enormously in height; some of the clump-formers grow to only about 6 or 10 ft (1.8 or 3 m) tall and can be placed in the garden like shrubs; others can reach about 90 ft (27 m) and are sufficiently stately for the largest gardens. Alas, the most magnificent palms are strictly for frost-free climates, and the delights of a palm avenue are denied to the temperate climate gardener. He or she will have to be content with



growing some of the more modest palms indoors; but they are among the most attractive of all house plants. They are mostly easy to grow; give them reasonable light, don't over-water them, and don't use a pot that is too large for the size of the palm.

There are few groups of trees as useful as palms in the countries where they grow; thatch is made from the leaves, the trunks provide timber, and dates and coconuts are significant commercial crops, both borne by palms. Some species can have their sap tapped to make palm wine or toddy; and there are those whose young shoots can be cut out and cooked like cabbage.

Cycads

Cycads are an ancient group of plants usually grouped like the conifers in the gymnosperms, but with palm-like fronds. They are only found in limited, warmer parts of the world. They bear large, nut-like seeds that are rich in starch. However, they are not for the vegetable plot—the raw seeds contain poisonous alkaloids which have to be destroyed by long and elaborate preparation for consumption. This varies with the species, but may involve pounding the seeds, steeping them in water for long periods or both. This is an art perfected by the indigenous peoples of Australia and Africa, where most cycads grow. Some species contain a great deal of starch (called sago) in their growing shoots, although as cycads grow so very slowly it is not economical

LEFT: *Encephalartos friderici-guilielmi* is a striking cycad from South Africa. It is very hardy and adapts well to cultivation.

BELOW: Ferns and palms can be used to create an oasis in the suburban garden.



to cultivate them commercially to harvest the sago. In fact, commercial sago (tapioca) comes from a totally unrelated plant.

It is their agonisingly slow growth that limits the popularity of cycads in gardens; sow a seed and it will be years before you are rewarded with a fully developed clump of glossy, palm-like leaves, let alone the curious flower cones, which can be far larger than any pine cone. The plants bear male and female cones, usually on the same plant, and the female cones can be a striking sight when the seeds ripen. Eventually, most will develop a short thick trunk, but don't hold your breath waiting—the magnificent specimens you see in botanic gardens are usually at least 50 years old. Cycads are not exactly abundant and are usually protected by law. If you do acquire one, give it a climate free of frost, or almost so, a place in light shade, and fertile soil. Grow it in a big pot by all means, and if you like you can bring it inside to a sunny room.

Fruit & Nut Trees

Choosing a Fruit Tree

Fruit trees can be classed into two broad groups: the tropical fruits, members of several plant families, mainly evergreen, and often rather stately growers; and the temperate fruits, deciduous and almost all cousins of the rose. The citrus are a kind of link between the two; evergreen and with members that like hot climates and others that don't mind it coolish. Which to choose? Your own favorite, that goes without saying; but you need to take your climate into account. There is no joy in pining after mangoes if you suffer frost, or cherries if you can't provide them with the cold winters they need. Then, there is no point in growing just any sort of variety. Just about all types of fruit have been bred and improved by gardeners for centuries, and come in a bewildering number of varieties. Some of the tropical types (citrus too) can be grown from seed quite easily, but the resulting trees, while vigorous, almost always produce inferior fruit.

The named varieties are almost always grafted, and you may be offered the same one on several different understocks. Usually this is because by choice of a more or less vigorous stock you can tailor the final size of the tree, but sometimes one stock will be better than another in different soils. If in doubt, ask your supplier for advice, bearing in mind that bigger isn't necessarily better—you may prefer to have two smaller trees instead of one large one. That way you might have both a dessert and a cooking apple, or spread your crop by having an early-ripening variety and one that ripens later.

With some of the temperate fruits, notably apples, pears and sweet cherries, you need two trees in any case, as they are not 'self-fertile'—the flowers must receive the pollen of a different variety or there will be no fruit. Not that pollinating insects respect fences; the spouse tree could be in the garden of a co-operative



Abelmoschus moschatus 'Pacific Orange Scarlet'



Abelia chinensis

ABELIA

A genus of about 30 species of both deciduous and evergreen shrubs from eastern Asia and Mexico, the abelias are valued for their elegant growth and abundant small tubular or trumpet-shaped flowers over a prolonged summer season. They grow to about 6 ft (1.8 m) tall and have dark green foliage on arching canes.

CULTIVATION: Species vary from moderately frost hardy to somewhat tender. The frost-hardy species are trouble-free plants, capable of surviving harsh conditions. Abelias prefer sun or light shade, and need a well-drained soil with regular water in summer. They are easily propagated from cuttings and can withstand heavy pruning, for example, when used for low hedging.

Abelia chinensis

One of the hardier species, *Abelia chinensis* forms a spreading bushy shrub. It can be deciduous or semi-deciduous, and has reddish stems and small shiny leaves which turn bronze purple in fall (autumn). It blooms with a succession of small white flowers throughout summer and early fall, each conspicuous dull pink calyx persisting on the shrub long after the flower falls. ZONES 8–10.

Abelia floribunda

With the largest and most brightly hued flowers among the abelias, this species bears clusters of bright rose carmine, 2 in (5 cm) long flowers along arching branches in early summer. Only marginally frost hardy, in colder areas it is best grown in a warm sheltered spot such as against a wall or fence. ZONES 9–11.



Abelia floribunda

Abelia × *grandiflora*

This hybrid between *Abelia chinensis* and *A. uniflora* grows to 6–8 ft (1.8–2.4 m) tall and wide. It has arching reddish brown canes and small, glossy dark green leaves. Small mauve and white flowers appear in early summer, usually with a second flush at summer's end. The dull pink calyces persist on the shrub after the flower falls, contrasting with the leaves which turn purplish bronze. The cultivar 'Francis Mason' has yellow or yellow-edged leaves but it has a tendency to revert to plain green. ZONES 7–10.

Abelia schumannii

Less vigorous than *Abelia* × *grandiflora*, this deciduous shrub likes a sheltered situation. It has arching red canes and small pointed leaves; the upper part of each cane produces a succession of showy bell-shaped flowers from late spring to early fall (autumn). Flowers are rose pink with an orange blotch in the throat; the pale reddish calyx persists on the shrub after the flower falls. ZONES 7–10.

ABELMOSCHUS

This is a genus of around 15 species from the tropics of Africa and Asia. In older books all the species were included in the larger genus *Hibiscus*. They are annuals, biennials or short-lived perennials with tough bark (sometimes used for fiber) and maple-like leaves. Some species die back to a large tuber in the tropical dry season. The hibiscus-like flowers occur in shades of yellow, pink, orange or red. Several species make attractive ornamentals and the vegetable okra or gumbo (*Abelmoschus esculentus*) is grown for its edible young pods.



Abelia × *grandiflora*

CULTIVATION: They are mostly grown as summer annuals, requiring fertile, well-drained soil, a sheltered position in full sun, and plentiful water. Propagate from seed in spring. Rust disease can be a problem: spray with a fungicide.

Abelmoschus esculentus

syn. *Hibiscus esculentus*

OKRA, GUMBO, LADY'S FINGERS

Long cultivated in parts of Africa and Asia (where it originated), this 6 ft (1.8 m) tall species was taken to the Americas with slaves from West Africa and has remained a traditional ingredient of many dishes in the USA's Deep South. It is an attractive plant with red-eyed yellow flowers. Both flower buds and the long starchy immature pods are eaten. Okra requires a long hot summer for successful growth. ZONES 9–11.

Abelmoschus manihot

AIBIKA

This is a perennial species 6–8 ft (1.8–2.4 m) tall. The stems are covered with small, bristly hairs and the 3- to 7-lobed leaves are up to 18 in (45 cm) across. The flowers are white to yellow with purple centers, borne singly or in small racemes, and followed by 3 in (8 cm) fruit. ZONES 10–12.

Abelmoschus moschatus

MUSK MALLOW

This tropical Asian species is very variable, with many wild and cultivated races. Some are used for fiber and the seeds (musk seeds) yield oils and fats (ambrette) used medicinally and in perfumery. The whole plant has a slight musky smell. The hairs on the leaves are often bristly and the large flowers are typically pale yellow with a purple eye. Ornamental cultivars have a range of flower colors. The cultivar 'Mischief' is a



Abelia × *grandiflora* 'Francis Mason'

compact plant that grows well in pots or can be naturalized in a sunny sheltered position; red, pink or white flowers are borne in summer and fall (autumn).

'Pacific Light Pink' is an 18 in (45 cm) dwarf cultivar with 2-tone pink flowers up to 4 in (10 cm) wide. 'Pacific Orange Scarlet' (syn. 'Oriental Red') is also very popular. ZONES 8–12.

ABIES

FIR

The true firs, sometimes known as silver firs to distinguish them from *Picea* (which have pendent, not upright, cones), comprise 40-odd species of evergreen conifers. Among the most stately of all conifers, firs come from cool- to cold-climate mountain areas of the northern hemisphere. The majority are from China and western North America, but a few species extend into the tropics on the high mountains of Central America and Southeast Asia. The short, stiff needles, which are distributed evenly along the twig, usually have 2 longitudinal blue bands on their undersides.

CULTIVATION: Their narrow shape and often slow growth allow many species to fit comfortably into the larger suburban garden, but they will not tolerate urban pollution and prefer a moist climate without extremes of heat. Soils must have adequate depth, drainage and moisture retention. Propagation is from seed. Grafting is used for selected clones, including named cultivars. The only pruning or shaping needed is the removal of twin leading shoots as soon as they appear.

Abies alba

EUROPEAN SILVER FIR

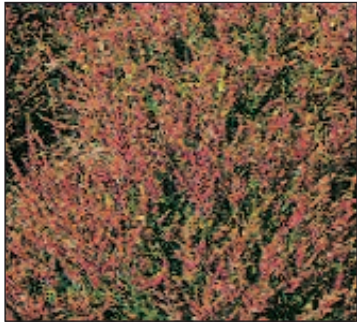
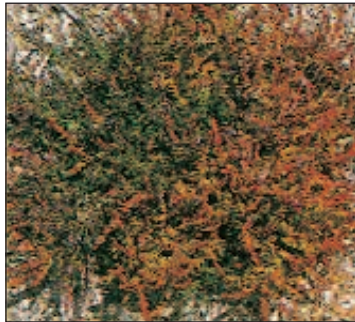
Originating in the mountains of central and southern Europe this conifer can grow to 180 ft (55 m). It has glossy dark



Abelia × *grandiflora* cultivar



Abies alba

*Calluna vulgaris* 'Allegretto'*Calluna vulgaris* 'Anchy Ann'*Calluna vulgaris* 'Dark Beauty'*Calluna vulgaris* 'Fred J. Chapple'*Calluna vulgaris* 'Heidesinfonia'*Calluna vulgaris* 'Kerstin'*Calluna vulgaris* 'Multicolor'

CALLUNA

HEATHER, LING

The sole species of this genus, heather, is an evergreen shrub and is the dominant moorland plant of the colder parts of the UK and northern Europe; it is closely related to the heath genus *Erica*. White, pink, red or purple are the usual colors for the small bell-shaped flowers, borne in dense clusters. In winter the foliage turns brownish or dull purple. Mostly grown in gardens are the numerous cultivars, selected for dwarf or compact growth and for flower or foliage color. **CULTIVATION:** It is an extremely frost-hardy plant, thriving in very exposed situations and often performing poorly under kinder conditions. The soil should be acidic, gritty, and of low fertility. After flowering cut back to keep bushes compact. In areas with warm, humid summers it is prone to root- and stem-rot. Propagation is usually from tip cuttings or rooted branches can be detached.

Calluna vulgaris

Common heather makes a spreading shrub 12–36 in (30–90 cm) high. The flowers of wild plants are pale pink to a strong purplish pink, occasionally white. Flowering time is variable: some races and cultivars flower through summer, others from mid-summer to early fall (autumn). With over 400 cultivars

available in the UK alone it is hard to decide which to mention, but the following are representative and will add interest and diversity to the garden. 'Allegretto' is a low-growing compact form with cerise flowers. 'Allegro' is medium sized with a neat habit and purple-red blooms. 'Anchy Ann' has very long spikes of mauve flowers on 24 in (60 cm) bushes. 'Anthony Davis' is a good variety for cutting with long sprays of single white flowers. 'Beoley Gold' is 18 in (45 cm) tall with a spread of 24 in (60 cm) and has yellow-flushed foliage and single white flowers. 'County Wicklow' is 10 in (25 cm) tall by 15 in (38 cm) and is a semi-prostrate shrub with double, pale pink flowers. 'Dark Beauty' has rich, deep pinkish red flowers on small, compact plants. 'Darkness' is 10 in (25 cm) tall with a spread of 15 in (38 cm) and has crimson-purple single blooms. 'Elsie Purnell' is a somewhat larger bush growing to 15 in (38 cm) and spreading to 30 in (75 cm) with gray-green foliage and long spikes of silvery pink double blooms that are good for cutting and/or drying. 'Fred J. Chapple' forms neat, dense mounds dusted with white flowers. 'Gold Haze' has a height and spread of 18 in (45 cm), pale golden foliage and white single flowers. 'H. E. Beale' is quite a tall specimen to 30 in (75 cm) with grayish green foliage and long racemes of

silvery pink double flowers held late in the season. 'Heidesinfonia' is one of the best of the mauve-pink forms; flowers are produced abundantly on long spikes that are good for cutting. 'J. H. Hamilton' is a dwarf plant to 6 in (15 cm) with a spread of 10 in (25 cm) and needs careful siting to prevent it being overgrown by larger varieties; it has double pink flowers. 'Joy Vanstone' has light-colored foliage turning orange in winter and produces single pink flowers. 'Kerstin' has a spread of 18 in (45 cm) and foliage that turns deep lilac-gray in winter then cream to red as spring unfurls; flowers are mauve. 'Kinlochruel' grows to 12 in (30 cm) tall with a spread of 15 in (38 cm) and has bright green foliage, turning bronze in the colder months, and double white flowers; it is very free flowering. 'Mair's Variety' is an upright shrub which grows to 24 in (60 cm) in height with an almost identical spread and has pure white single flowers held on long stems, making it excellent for cutting. 'Mullion' grows to 8 in (20 cm) with lilac-pink flowers held on short racemes. 'Multicolor' is 4 in (10 cm) tall with a 10 in (25 cm) spread and is a compact variety with interesting yellow-green foliage tinged orange and red with racemes of mauve blooms. 'Orange Queen' is a very compact plant grown for its foliage, golden yellow in summer changing to

deep burnt-orange in winter; it has single pink flowers. 'Robert Chapman' is 12 in (30 cm) tall by twice this in width and is an excellent accent plant with golden-yellow foliage in spring and summer turning to bronze shades during the colder months; it has lavender flowers. 'Silver Queen' is 15 in (38 cm) tall and spreads to 24 in (60 cm) with downy, silver-gray leaves offset by pale mauve single flowers. 'Sir John Charrington' is 15 in (38 cm) and has golden-yellow foliage during the summer turning to fall tones during winter with single mauve-pink blooms. 'Sister Anne' is a compact bush that grows to only 4 in (10 cm) high but spreads to 10 in (25 cm) and is covered with mauve blooms offsetting the gray-green foliage, which becomes bronze during the colder months. 'Spring Cream' is 15 in (38 cm) tall by 18 in (45 cm) wide with cream-tipped mid-green leaves in spring and white single flowers. 'Sunset' is 10 in (25 cm) tall with golden-yellow spring foliage becoming deeper in summer and turning to vivid fall tones in winter; it has lilac-pink flowers. 'Tib' has a more open habit with a spread of 15 in (38 cm) and deep pink double flowers during the height of summer. 'Velvet Dome' is attractive in or out of bloom, forming tight buns of dense, deep green foliage. 'Walter Ingwersen' has a loose, open habit and

*Calluna vulgaris* 'Walter Ingwersen'*Calluna vulgaris* 'Orange Queen'*Calluna vulgaris* 'Velvet Dome'*Calluna vulgaris* 'Robert Chapman'*Calluna vulgaris* 'Spring Cream'

*Erythrina acanthocarpa**Erythrina* × *bidwillii**Erysimum ochroleucum*

***Erysimum* ‘Golden Bedder’**
syn. *Cheiranthus* ‘Golden Bedder’

This is one of the color forms of the Bedder Series, bred for compact shape and available in shades from cream through yellow to orange and red. They can flower for months, often starting in winter in mild climates. ‘Golden Bedder’ is a rich golden yellow. ZONES 8–10.

***Erysimum* ‘Harpur Crewe’**
syn. *Erysimum* × *kewensis* ‘Harpur Crewe’

This lovely hybrid between *Erysimum cheiri* and *E. bicolor* has sweetly scented, double yellow flowers. It grows to 12 in (30 cm) high. It has been known since the seventeenth century. ZONES 8–10.

Erysimum helveticum
syn. *Erysimum pumilum*

This small, tufted perennial from the mountains of southern, central and eastern Europe grows to 6 in (15 cm) tall with linear, lance-shaped leaves and fragrant, bright yellow flowers in late summer. ‘**Yellow Bird**’ is a dwarf, compact grower to 4 in (10 cm). ZONES 5–9.

*Erysimum linifolium*

Erysimum hieraciifolium
SIBERIAN WALLFLOWER

Native to Europe and northern Asia, this bushy evergreen is short lived and should be grown as a biennial. It has toothed, mid-green leaves and bears bright yellow or orange flowers in spring, putting on a dazzling display for a long period. Slow growing, it reaches a height and spread of about 12 in (30 cm). It is fully frost hardy, preferring light, well-drained, fertile soil and a sunny position. ZONES 6–9.

***Erysimum* ‘Jubilee Gold’**

This is a bushy plant to 15 in (38 cm) high with lance-shaped leaves and golden-yellow flowers in short clusters in spring. ZONES 7–10.

Erysimum linifolium

Native to Spain and Portugal, this narrow-leafed, mat-forming perennial grows to about 30 in (75 cm) tall and has long spikes of comparatively small, deep mauve flowers almost all year round in mild climates. Several forms exist including ‘**Bicolor**’, with pink-mauve as well as white flowers, and ‘**Variegatum**’, with mauve flowers and white-edged leaves. ZONES 6–10.

***Erysimum* ‘Moonlight’**

This is a mat-forming evergreen perennial to 10 in (25 cm) tall and about 18 in (45 cm) wide. It flowers from early spring well into summer and produces short racemes of cheerful sulfur-yellow flowers. *Erysimum* ‘Moonlight’ would make a most attractive rock-garden plant or subject for the front of a border. ZONES 6–9.

*Erysimum* ‘Golden Bedder’

Erysimum mutabile
syn. *Cheiranthus mutabilis*

This much-branched shrub from the Canary Islands and Madeira grows to 3 ft (1 m) high and has narrow, lance-shaped leaves. In spring the flowers open pale yellow and age to a purplish color. It is marginally frost hardy. ZONES 9–11.

Erysimum ochroleucum
syn. *Erysimum decumbens*

This short-lived perennial should be grown as a biennial. It has spreading stems to 12 in (30 cm) or more tall, lance-shaped leaves and bright yellow flowers in spring and summer. ZONES 6–9.

Erysimum perofskianum

This biennial or short-lived perennial is usually treated as an annual in gardens. It grows to 15 in (38 cm) tall and about 10 in (25 cm) wide and has dark green, slightly toothed leaves to 4 in (10 cm) long. It produces its orange to orange-red flowers in spikes of up to 40 blooms in summer. This rosette-forming plant is native to Afghanistan and Pakistan. ZONES 7–9.

ERYTHRINA
CORAL TREE

The 108 species of deciduous and semi-evergreen trees and shrubs in this genus occur wild in tropical and subtropical regions around the world, though with most species in the Americas and Africa. Belonging to the bean tribe of the legumes, they are grown as ornamentals for their vividly hued flowers. Their trunks and branches are protected by short, sharp prickles; many species have weak branches that tend to fall in storms. The leaves are compound with 3 broad, often diamond-shaped leaflets. Bean-like flowers in scarlet, crimson or orange are borne in racemes towards the ends of the branches at varying times of the year

*Erysimum perofskianum**Erysimum* ‘Jubilee Gold’

(some species in mid-winter), followed by narrow seed pods that dry and brown as they ripen.

CULTIVATION: Most species are not frost hardy, but some are happy enough in exposed coastal locations. They all enjoy full sun and well-drained soil. Spider mites may be a problem. Propagation is from seed in spring or cuttings in summer.

Erythrina acanthocarpa
TAMBOOKIE THORN

This deciduous shrub from southern Africa forms a thicket of stiff, thorny branches to 6 ft (1.8 m) tall and often wider. The elongated pea-flowers, scarlet tipped with yellow and green, make a spectacular show in late spring and early summer. ZONES 9–11.

Erythrina* × *bidwillii
HYBRID CORAL TREE

This hybrid between *Erythrina crista-galli* and *E. herbacea* originated in Australia in the 1840s. It is an upright, deciduous shrub growing to around 10 ft (3 m) tall. The vivid dark red flowers appear from late spring to mid-fall (autumn) on long racemes at the ends of the current season’s growth so it is important to prune in early spring to ensure a good floral display. In cooler climates it is best treated as an herbaceous plant. ZONES 9–11.

Erythrina caffra
syns *Erythrina constantiana*, *E. insignis*
SOUTH AFRICAN CORAL TREE, KAFFIRBOOM

This semi-evergreen tree with a broad, open crown quickly reaches about 30–60 ft (9–18 m) and is often grown as a shade tree in its native South Africa. The compound leaves, 6 in (15 cm) wide, have 3 broad leaflets. From late spring to early summer clusters of pale orange to orange-red flowers are borne on almost bare branches (sometimes quite thorny).

*Erysimum* ‘Moonlight’

*Gymnocalycium mihanovichii**Gymnocladus dioica**Gymnocladus dioica**Gymnostoma australianum****Gymnocalycium mihanovichii***
PLAID CACTUS

This Paraguayan species has flattened, grayish green, globular stems 2 in (5 cm) in diameter. These have 8 ribs and horizontal grooves above and below the areoles which bear short brownish yellow spines. Pink or greenish yellow flowers appear in early summer. A number of cultivars with stems of different colors or variegated have become popular. Some lack chlorophyll and so must be grafted onto a normal green cactus to survive; the best known is the brilliant red 'Red Head' (syn. 'Hibotan'). 'Variegatum' has stems irregularly blotched red and bronzy green. ZONES 9–11.

Gymnocalycium quehlianum

From Argentina, this cactus grows to 2 in (5 cm) high and 3 in (8 cm) across. It has a gray-green stem with up to 15 ribs. Pale brown spines develop in whorls, but there are no central spines. It bears white funnel-shaped flowers with pinkish throats in early summer. ZONES 9–11.

Gymnocalycium saglionis

Native to northwestern Argentina, this rounded cactus grows to 4 in (10 cm) high and up to 12 in (30 cm) wide. It has a mid-green stem with 30 or more ribs with prominent tubercles. Reddish brown spines develop in whorls and there are about 3 central spines. It bears small, very pale pink to almost white flowers in early summer. ZONES 9–11.

Gymnocalycium tillianum

This short, squat Argentinian cactus grows 4 in (10 cm) tall and 6 in (15 cm) wide. It has long, black-brown spines and small pink flowers in spring. Spherical fruit follow in summer. ZONES 9–11.

GYMNOCARPIUM

Consisting of 5 species, this genus of deciduous, ground-covering ferns that spread by creeping rhizomes can be found on all northern continents. All are attractive and useful ferns, 12–15 in (30–38 cm) tall with triangular fronds that may be bluish, green or yellow-green in color. Rhizomes are tough and tenacious and the plants should only be

*G. mihanovichii* 'Variegatum'

grown where they can be contained or where they will not become a nuisance. **CULTIVATION:** Best and most luxuriant in full shade but tolerant of a few hours of daily sun, these ferns need moist, fertile soil that contains plenty of rotted organic matter. They are an appropriate ground cover under groups of trees or large shrubs so long as their water needs are not neglected. Hardiness varies with species but all will take at least some frost. Propagate by sowing spores or by division.

Gymnocarpium dryopteris

OAK FERN

From Europe, Asia and North America, this is a lovely fern with yellowish fronds about 15 in (38 cm) long. The creeping rhizome by which it spreads is wiry, black and shiny and the triangular fronds unroll from a tight sphere. 'Plumosum', with its larger, denser fronds, is generally thought to be even more attractive. ZONES 3–9.

GYMNOCLADUS

Distinctive for their enormous, handsome bipinnate leaves, the 4 deciduous trees of this genus, allied to *Gleditsia*, come from North America and East Asia. Small, greenish white flowers appear only in prolonged warm weather. The seeds and pods of different species have been used for soap and as a coffee substitute. Only female trees bear fruits. **CULTIVATION:** Cool-climate plants, they require full sun and deep, well-drained, fertile soil. Propagate from seed in fall (autumn).

Gymnocladus dioica

KENTUCKY COFFEE TREE

From moist woodland areas of the eastern USA, this slow-growing tree reaches 70 ft (21 m) tall and 50 ft (15 m) wide. The large compound leaves, up to 3 ft (1 m) long, are pinkish bronze when

*Gymnocalycium saglionis*

young. The small, star-shaped white flowers are fragrant and are borne in early summer followed, on the female plants, by pendent reddish brown pods to 10 in (25 cm) long. The seeds were once roasted and ground for a coffee-like beverage. ZONES 4–10.

GYMNOSTOMA

This genus of about 20 species of attractive cypress-like trees occurs in islands of the southwest Pacific and Malay Archipelago; a single species occurs in northern Australia. They are not conifers but are close relatives of *Casuarina*, in which genus they were formerly included. They differ from *Casuarina* and *Allocasuarina* by having only 4 tiny scale leaves at each joint of the slender needles, and by the long 'beaks' radiating from the cone-like structures containing the seeds. One or two species are planted for ornament and shade in wetter parts of the Asian tropics, and the Australian species is becoming well known in cultivation. **CULTIVATION:** They prefer sheltered, humid situations and deep, moist, humus-rich soil. Propagation is from seed or cuttings.

Gymnostoma australianum

This is Australia's only member of the genus, known in the wild solely on one high granite mountain near the mouth of the Daintree River in northeastern Queensland. It can become a small, bushy crowned tree of about 20 ft (6 m), but is usually grown as a neat, conical, 10 ft (3 m) shrub with dense, deep green foliage. ZONES 10–12.

GYNANDRIRIS

This genus of 9 species of iris-like cormous plants is native mainly to South Africa, but also occurs in the Mediterranean region and southwest Asia. They have one or two narrow, channelled basal leaves and produce a succession of short-lived flowers. Each flower consists of 3 long, spreading outer petals and 3 smaller, erect inner petals.

CULTIVATION: Moderately frost hardy, they require well-drained soil in full sun. They are from winter rainfall areas and need dry summer conditions. Propagate from seed or cormlets.

Gynandriris sisyrinchiumsyn. *Iris sisyrinchium*

This species from the Mediterranean and western Asia grows to 8 in (20 cm) high and bears violet-blue, iris-like flowers

*Gymnocalycium tillianum*

Leucospermum cordifoliumsyn. *Leucospermum nutans*

NODDING PINCUSHION

Growing 3–6 ft (1–1.8 m) tall with a spread of about 3 ft (1 m), this species has a well-branched habit with sturdy, flowering branches bearing gray-green, very broad leaves and terminal flowerheads. These distinctive, dome-shaped blooms in yellow, orange and red tones are held over a long period through summer. ‘Flame Spike’ has deep orange-red flowerheads. ‘Red Sunset’, a hybrid with *Leucospermum lineare*, bears red and gold flowers in spring. ZONES 9–11.

Leucospermum erubescens

A somewhat rare species in the wild, *Leucospermum erubescens* is restricted to the Langeberg Mountains east of Cape Town, where it grows on dry rocky hills. It is an erect, rather stiff shrub up to 6 ft (1.8 m) high with narrow, blunt leaves toothed at the apex. From late winter to

*Leucospermum mundii*

early summer it produces clusters of flowerheads at the branch tips, opening honey yellow but ageing dull pink. This is only one of many beautiful *Leucospermum* species that await more general cultivation. ZONES 9–10.

Leucospermum formosum

Closely allied to and very similar to the green-leaved *Leucospermum catherinae*, this native of the southwest Cape has hairy gray-green leaves and in spring produces hemispherical flowerheads with pale orange-yellow styles. ZONES 9–10.

Leucospermum glabrum

This shrub measures 10 ft (3 m) and has bright green leaves. The flowers have bright scarlet styles and deep red ribbons. ZONES 9–10.

Leucospermum grandiflorum

Found in the hills and mountains of southeastern Cape Province, this 5 ft (1.5 m) tall species is notable for its unusual flowerheads. They open from mid-winter to early summer and have relatively few styles. The styles, which are

*Leucospermum grandiflorum**Leucospermum glabrum**Leucospermum erubescens**Leucospermum cordifolium**Leucospermum oleifolium**Leucospermum tottum* ‘Scarlet Ribbon’

yellow, point almost directly upwards and are tipped with red pollen receptacles. ZONES 9–11.

Leucospermum mundii

This species, another from the Langeberg Mountains, has light green leaves with up to 17 notch-like teeth at their tips. The small brush-like flowerheads occur in clusters at the stem tips and open pale yellow then age to golden brown. They appear from mid-winter to late spring. ZONES 9–10.

Leucospermum oleifolium

This shrub grows 3–5 ft (1–1.5 m) tall and has clusters of flowers that are pale yellow changing to orange then deep crimson. ZONES 9–10.

*Leucospermum formosum**Leucospermum cordifolium* ‘Flame Spike’*Leucospermum reflexum**Leucospermum reflexum* var. *luteum**Leucospermum tottum****Leucospermum reflexum***

ROCKET PINCUSHION

This species makes an erect shrub up to 10 ft (3 m) tall with a spread of 6 ft (1.8 m). The small, silvery leaves are clasped to the stems in a compact manner while the terminal crimson, yellow-tipped, spiky, reflexed flowers are borne profusely through spring and summer. *Leucospermum reflexum* var. *luteum* grows to over 12 ft (3.5 m) tall and has light, gray-green foliage and clear light yellow flowers. ZONES 9–10.

Leucospermum tottumsyn. *Leucospermum gueinzii*

FIREWHEEL PINCUSHION

This dense shrub grows to 5 ft (1.5 m) high and wide. Its long, narrow, gray-green, oblong leaves are covered with fine, short hairs. The dome-shaped flowerheads, 3–4 in (8–10 cm) wide and opening in spring and summer, are pinkish red with numerous cream styles radiating from the central boss.

‘Scarlet Ribbon’ is a cross between *Leucospermum tottum* and *L. glabrum* with bright pink flowers and yellow styles. ‘Golden Star’, a cross between *L. tottum* and *L. cordifolium*, has light yellow flowers on long slender stems. ZONES 9–11.

Miscanthus sinensis

EULALIA

Probably one of the most beautiful and least invasive of ornamental grasses, this Asian species has undergone more selection of cultivars than probably any other grass. The wild form makes neat, upright to slightly arching clumps up to 12 ft (3.5 m) tall although usually less. Its leaves have a white midrib and die to a soft straw color in winter. The flower-heads are usually soft gray tinted purple-brown. 'Gracillimus' has very fine leaves that color well in fall (autumn), have a white mid-rib and arch elegantly; it rarely exceeds 4 ft (1.2 m) in height. 'Kleine Fontaine' has arching leaves and flowers in early to mid-summer. 'Morning Light', similar to 'Gracillimus', has a fine silver variegated leaf edge. 'Silberfeder' (syn. 'Silver Feather') grows to 8 ft (2.4 m) and produces a generous crop of light, open, silvery pink flowers

*Miscanthus sinensis* 'Variegatus'

on slender, erect stems in fall. 'Variegatus' has creamy white leaves with pale green bands. 'Yaku Jima' is a dwarf form to about 30 in (75 cm) or so with narrow arching leaves. 'Zebrinus' is a tall variety with bands of gold irregularly positioned across the leaf blade, giving it the common name of zebra grass. ZONES 4–10.

MITCHELLA

PARTRIDGE BERRY

Two species of evergreen perennials make up this genus: one a native of North America, the other found in Japan and South Korea. They trail across the ground and have glossy, deep green, oval leaves up to 1 in (25 mm) long. In spring, they produce pairs of 4-lobed, funnel-shaped flowers about ½ in (12 mm) long. The American species has white flowers; the Asian pink. The flowers are followed by ½ in (12 mm) 2-lobed white or red berries, rather like 2 berries fused together.

CULTIVATION: Plant in moist, well-drained soil in sun or part-shade. They are fully frost hardy. Propagate from seed, layers or cuttings.

*Miscanthus sinensis* 'Zebrinus'*Miscanthus sinensis* 'Gracillimus'*Mitchella repens*

TWO-EYED BERRY, RUNNING BOX, PARTRIDGEBERRY

This North American species grows into a prostrate mat of dark green foliage with white veins to ¾ in (18 mm) long. Its small white flowers are often tinged pink; they are produced in early summer and are followed by bright red berries. It prefers acid soil and plenty of moisture. ZONES 3–9.

MITELLA

BISHOP'S CAP, MITREWORT

This genus of some 20 species of rhizomatous perennials originates in North America and northeast Asia. Allied to *Heuchera* and *Tiarella*, and very similar in appearance, they form clumps of roughly heart-shaped leaves with shallow lobes and a covering of fine hairs. The leaf size varies from ½–4 in (1.2–10 cm) across, depending on the species. The tiny green, white or pink flowers are carried in spikes on upright, wiry stems that extend well above the foliage clump. Up to 60 flowers per spike appear in spring.

CULTIVATION: These woodland plants prefer moist, well-drained, humus-rich soil in sun or part-shade. They will not tolerate prolonged dry conditions, but will withstand temperatures down to –10°F (–23°C). Propagate from seed or by dividing established clumps in late winter to early spring.

Mitella breweri

A dainty if somewhat inconspicuous clumping plant from North America, this species has pleasant light green foliage that is slightly hairy and about 4 in (10 cm) long. Through these densely

*Mitella breweri**Miscanthus sinensis* 'Morning Light'

furnished leaves erupt its fine erect flower stems supporting tiny green flowers, hardly showy but en masse an attractive sight. If grown in a moist, semi-shaded aspect it will self-seed and make a good ground cover. It grows to 6 in (15 cm) tall in bloom. ZONES 6–10.

MITRARIA

This genus includes just one species, an evergreen scrambling or climbing subshrub from the south of Chile and Argentina. Its wiry stems are clothed in pointed elliptical leaves with toothed edges. The leaves, around 1 in (25 mm) long, have fine hairs along their midribs and petioles. From late spring to fall (autumn), it produces 4- or 5-lobed, narrow-mouthed, orange-red tubular flowers that are up to 1½ in (35 mm) long. The flowers are followed by ½ in (12 mm), fleshy, berry-like fruits.

CULTIVATION: This climber is very easy to grow, if a little untidy. Plant it in cool, moist, humus-rich, peaty soil. Provided the roots are cool, its foliage will tolerate full sun and the plant flowers better for it; otherwise grow in part-shade. Propagate from seed, layers or cuttings.

Mitraria coccinea

This is a useful and attractive subshrub with rich glossy green leaves and a long flowering season. It can be allowed to trail over the ground, spill over banks, cascade from a hanging basket or climb up a fence through trellis or wire. Its stems can grow to 6 ft (1.8 m) or more in length. ZONES 9–11.

MOLINERIA

This small tropical genus of about 7 species of lily-like perennials is distrib-

*Miscanthus sinensis* 'Kleine Fontaine'

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