



Royal Botanic Gardens **Kew**

THE BOOK OF ORCHIDS

A LIFE-SIZE GUIDE TO SIX HUNDRED SPECIES
FROM AROUND THE WORLD

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SUBFAMILY	Orchidoideae
TRIBE AND SUBTRIBE	Cranichideae, Chloraeinae
NATIVE RANGE	Central and southern Chile to southwestern Argentina
HABITAT	Shrubs or forest and along lakes and rivers, usually in humid environments
TYPE AND PLACEMENT	Terrestrial
CONSERVATION STATUS	Not assessed
FLOWERING TIME	Mid-November to early January (spring to summer)

FLOWER SIZE
1 1/8 in (3 cm)

PLANT SIZE
Up to 30 x 4 in
(75 x 10 cm),
including inflorescence



GAVILEA ARAUCANA
ARAUCANIA ORCHID

(PHILIPPI). M. N. CORREA, 1956



Actual size

When the pollinator of the Araucania Orchid, most likely a wasp, tries to drink nectar produced at the base of the column, it lands on the hinged lip and moves inward, eventually passing the balance point and finding itself pressed into the column. The pollen of this species is not formed into pollinia, and the pollinator first gets smeared with stigmatic fluid and then dusted with dry pollen. However, in some cases the flowers may also self-pollinate. Underground is a short stem (rhizome) that has a cluster of thick hairy roots radiating outward.

Gavilea araucana is named for the region in Chile called Araucanía, a former independent kingdom ruled by the indigenous Mapuche people. It was here that botanists first encountered the species.



The flower of the Araucania Orchid has creamy white, ovate-lanceolate sepals with long green tips, and the petals have green dashed lines or spots. The lip is cupped with a red, narrow claw and three lobes, the middle lobe irregularly green-striped, the two lateral erect lobes yellow.



SUBFAMILY	Orchidoideae
TRIBE AND SUBTRIBE	Cranichidae, Chloraeinae
NATIVE RANGE	Montane regions of Chile and Argentina
HABITAT	Patagonian steppe, pre-Andean shrublands
TYPE AND PLACEMENT	Terrestrial
CONSERVATION STATUS	Not threatened
FLOWERING TIME	Early spring after snow melts

FLOWER SIZE
2-3 in (5-8 cm)

PLANT SIZE
10-20 basal leaves
up to 6 in (15 cm) long,
generally flat to the
ground in a basal rosette

CHLORAEA MAGELLANICA
PORCELAIN ORCHID

J. D. HOOKER, 1846

The Porcelain Orchid is one the most widespread and exceptionally beautiful species of *Chloraea* found in the extreme southern latitudes of South America. The plant's common name comes from the porcelain-like quality of its relatively large, white flowers with bold, vivid green veins, carried above compact foliage. The species, like all members of *Chloraea*, manages to survive in the harsh and punishing Patagonian climate, blooming as the snow melts. The species name refers to its occurrence in the Straits of Magellan on the tip of South America.

It has been suggested that the lip has scent-producing glands on its surface. The floral morphology is compatible with pollination by bees, and there are images of pollination of some species of *Chloraea* by bumblebees. No reward is obvious, so this is likely to be a case of deceit. Underground, this species has a cluster of thick roots.

The flower of the Porcelain Orchid is greenish white, highly textured, with dark green reticulations. While the sepals spread, the petals draw inward, providing a hood for the column and downturned, inverted spotted lip.



Actual size



SUBFAMILY	Orchidoideae
TRIBE AND SUBTRIBE	Cranichideae, Spiranthinae
NATIVE RANGE	Japan, the Korean Peninsula, part of Russia, Iraq, Southeast Asia, Indonesia, Australia, New Zealand and many Pacific islands
HABITAT	Open, moist grassy areas, bogs, and even lawns, and often in disturbed habitats such as the berms of rice paddies (naturalized in many parts of the world)
TYPE AND PLACEMENT	Terrestrial
CONSERVATION STATUS	Not threatened
FLOWERING TIME	July to August

FLOWER SIZE
3/8 in (1 cm)

PLANT SIZE
6–15 × 4–8 in
(15–38 × 10–20 cm),
including inflorescence



SPIRANTHES SINENSIS
PINK LADY'S TRESSES
(PERSOON) AMES, 1908

This pretty, ubiquitous weed of temperate and tropical Asia thrives, spreads, and seeds itself readily in almost any open sunny, grassy areas that have ample moisture. With an incredible latitudinal range, the species has adapted to a wide variety of climates, tolerating harsh frozen winters and torrid humidity. Happily colonizing disturbed and cultivated areas, it often appears in prepared flower beds.

Plants are perennial but short-lived—about five years—and are thought to replace themselves regularly by producing copious seed. The species is the only *Spiranthes* that strays from white or yellow in its color scheme. The striking flowers, variable in color, are usually pink or purple, although lavender, red, and white forms also exist. They arrange themselves gracefully in a spiral around the upright inflorescence. Pollination by megachilid (leaf-cutting) bees has been documented.

The flower of the Pink Lady's Tresses is small, with the blooms arranged in a spiral raceme on an upright stem. Sepals and petals are vibrant pink or purple often with a pure crystalline white lip.



Actual size



SUBFAMILY	Orchidoideae
TRIBE AND SUBTRIBE	Cranichideae, Spiranthinae
NATIVE RANGE	Mexico, the Caribbean to Peru
HABITAT	Moister areas of seasonally dry semi-deciduous forests, often on steep embankments near seeps, at 3,950–9,850 ft (1,200–3,000 m)
TYPE AND PLACEMENT	Terrestrial, occasionally epiphytic
CONSERVATION STATUS	Not threatened
FLOWERING TIME	Winter

FLOWER SIZE
3/4 in (1.8 cm)

PLANT SIZE
8–36 × 6–10 in
(20–91 × 15–25 cm),
including inflorescence



STENORRHYNCHOS SPECIOSUM
VERMILION LADIES TRESSES
(JACQUIN) RICHARD, 1817

One of the more spectacular of the terrestrial orchids, also amenable to cultivation, the widespread Vermilion Ladies Tresses has a basal rosette of spirally arranged, variegated (striped or spotted) leaves reminiscent of the garden plant of *Hosta*. True spectacle ensues when brilliant red spikes emerge from the center of the rosettes, bearing dazzling, torch-like racemes of up to 50 (usually 20–30) small red and white flowers, each subtended by a bright red bract. Pollinating hummingbirds are irresistibly drawn to these flowers, which are waxy and tough enough to stand up to the onslaught of a bird's beak.

The handsome plants have a cluster of thick, hairy roots that sustain them through dry seasons when leaves wither. This dormancy usually occurs shortly after blooming takes place. Some forms of this species have entirely green leaves without variegation.

The flower of the Vermilion Ladies Tresses is small, cupped, and white but infused with brilliant red and subtended by a dazzling red bract, which makes the blooms and inflorescence appear to be completely red.



Actual size



SUBFAMILY	Orchidoideae
TRIBE AND SUBTRIBE	Diurideae, Thelymitrinae
NATIVE RANGE	Southwestern Western Australia, in coastal regions north to Kalbarri and east to Israelite Bay
HABITAT	<i>Banksia</i> woodland among low shrubs
TYPE AND PLACEMENT	Terrestrial on sandy soil
CONSERVATION STATUS	Not threatened
FLOWERING TIME	September to October (spring)

FLOWER SIZE
1/4 in (2 cm)

PLANT SIZE
7–20 × 4–10 in
(18–51 × 10–25 cm),
including inflorescence



THELYMITRA CAMPANULATA
BELL SUN ORCHID

LINDLEY, 1840



SUBFAMILY	Orchidoideae
TRIBE AND SUBTRIBE	Diurideae, Thelymitrinae
NATIVE RANGE	Southwestern Western Australia
HABITAT	Open clearings among shrubs and grass tussocks
TYPE AND PLACEMENT	Terrestrial in sandy soil
CONSERVATION STATUS	Not assessed
FLOWERING TIME	June to September (late winter to spring)

FLOWER SIZE
1 1/2 in (4 cm)

PLANT SIZE
6–14 × 2–4 in
(15–35 × 6–10 cm),
including inflorescence



THELYMITRA VARIEGATA
QUEEN OF SHEBA

(LINDLEY) F. MUELLER, 1865



Actual size

The flowers of the Bell Sun Orchid open up widely only when the weather is sunny and warm. The species is closely related to the Blue Sun Orchid (*Thelymitra canaliculata*) and Azure Sun Orchid (*T. azurea*), but the flowers are lighter blue with darker venation.

Some species of the genus are reported to be self-pollinating, but *T. campanulata* appears to be typical of those species that are pollinated by bees seeking nectar or pollen. No nectar is present, and it has been suggested that this species is mimicking blue-flowered species of the families Iridaceae, Asphodelaceae, and possibly Solanaceae. Buzz pollination (where the bee vibrates its wings, releasing pollen that is collected as feed for its young) is likely, but the orchid does not provide pollen as a reward.

The flower of the Bell Sun Orchid has spreading sepals, petals, and lip, all of similar shape and size and pale blue with darker blue veins. The column is short and dark purple with a yellow anther cap and wings and a fuzzy white appendage.

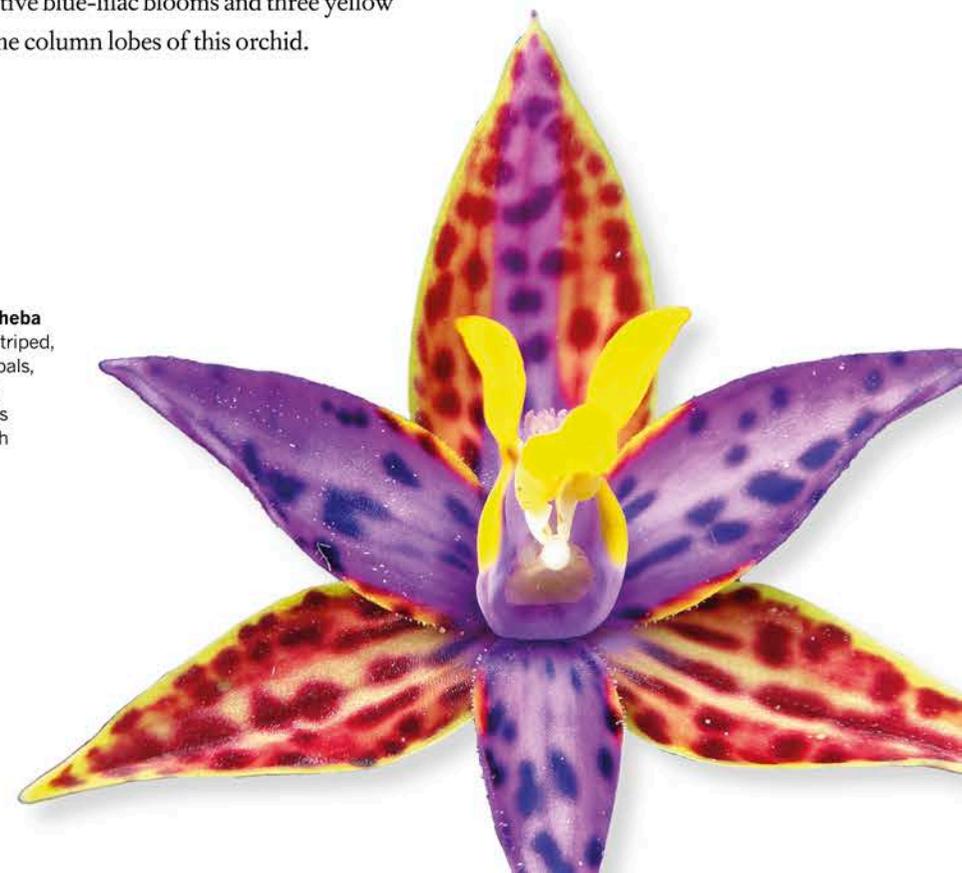
A spectacular orchid with a spectacular name, the Queen of Sheba has a peculiar spirally twisted leaf, emerging mid-season from a pair of subterranean tubers, and an inflorescence bearing up to five flowers. Its lip, unlike that of most orchids, is similar to the other floral parts, and the column, which is prominent and highly ornamented, seems to have taken on the role of attracting and positioning the pollinator.

The flowers of *Thelymitra variegata* mimic those of the Tinsel Flower (genus *Calectasia*, in the Dasygogonaceae family). These plants have reflective blue-lilac blooms and three yellow stamens, mimicked by the column lobes of this orchid.

The flower of the Queen of Sheba has bluish lavender, orange-striped, and dark maroon-spotted sepals, petals and lip, all of the same shape and size. The column is cup-shaped and adorned with three yellow lobes.



Actual size





SUBFAMILY	Orchidoideae
TRIBE AND SUBTRIBE	Orchideae, Orchidinae
NATIVE RANGE	Europe, east to Mongolia and north to Siberia and southern Scandinavia
HABITAT	Forests, forest margins, or wet to dryish meadows, usually on calcareous soils, from sea level to 7,545 ft (2,300 m)
TYPE AND PLACEMENT	Terrestrial
CONSERVATION STATUS	Frequent
FLOWERING TIME	June to August (summer)

FLOWER SIZE
¾ in (1 cm)

PLANT SIZE
Up to 24 × 4 in
(60 × 10 cm),
including inflorescence



DACTYLORHIZA FUCHSII
COMMON SPOTTED ORCHID
(DRUCE) SOÓ, 1962

The genus name *Dactylorhiza* refers to the finger-shaped roots, from the Greek word for finger, *daktulos*. The species is named in honor of the German botanist Leonhart Fuchs (1501–66). It is one of the most common of all Eurasian orchids, and is known to hybridize with other species.

In the spring, a loose cluster of usually purple-spotted leaves emerges and produces a leafy stem with up to 100 whitish to pink, purple-spotted flowers. Underground, a fingered tuber is produced each season. The Common Spotted Orchid's root type is shared with its closest relatives in this subtribe, but it is otherwise unknown in orchids. Only one member of *Dactylorhiza*, *D. viridis*, produces nectar, so pollination of nearly all species of the genus happens by the deception of insects, including sawflies, wasps, and bees.



Actual size

The flower of the Common Spotted Orchid is pink or white with a short spur. Sepals and petals form a hood over the column. The lip, usually decorated with purple loops or dots and dashes, has three lobes, with the midlobe half the size of the lateral ones.



SUBFAMILY	Orchidoideae
TRIBE AND SUBTRIBE	Orchideae, Orchidinae
NATIVE RANGE	Europe, east to Ukraine
HABITAT	Dry meadows, alpine grasslands, open woods and clearings, on calcareous or siliceous soil, at 985–6,600 ft (300–2,000 m)
TYPE AND PLACEMENT	Terrestrial
CONSERVATION STATUS	Least concern, but decreasing
FLOWERING TIME	April to July (spring)

DACTYLORHIZA SAMBUCINA
ELDER-SCENTED ORCHID
(LINNAEUS) SOÓ, 1962

This remarkable orchid has flowers that smell like elderflower (*Sambucus nigra*), hence the name *sambucina*. In Sweden, the plant is named “Adam and Eve,” referring to the two color variants (yellow and purple). Flowers of this species are mostly pollinated by bumblebees, which are attracted by the scent but are offered no reward. The two color forms, however, make it more difficult for the bees to learn to avoid the plants and so increase the chances for more visits and higher pollination rates.

Dactylorhiza sambucina receives the royal treatment in that, unusually for an orchid, it is pollinated by naïve queen bumblebees just emerging from hibernation. Climate change can cause a mismatch in the timing of flowering and queen bumblebee emergence, which may be a factor in the recent decline observed in this species.



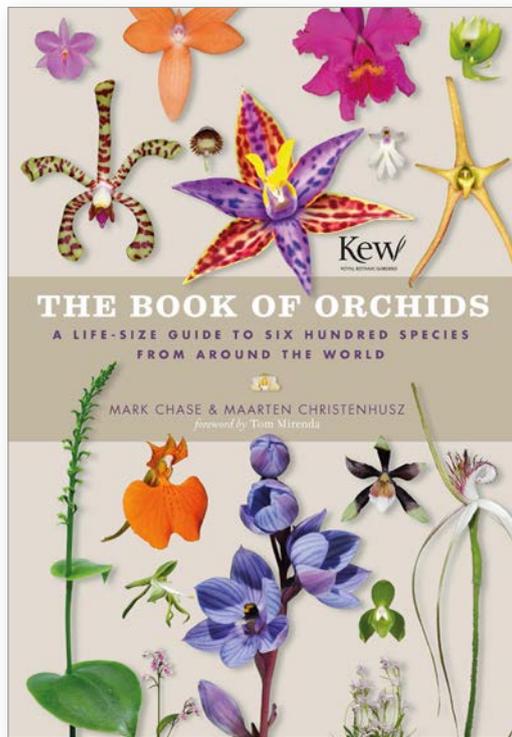
FLOWER SIZE
¾ in (1 cm)

PLANT SIZE
Up to 16 × 4 in
(40 × 10 cm),
including inflorescence



Actual size

The flower of the Elder-scented Orchid comes in purple or yellow forms, typically in the same population without intermediate colors. It has a fat spur in which there is no nectar. The sepals are held above the flower like wings, with petals forming a hood over the column.



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The Book of Orchids

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