PARK GUIDE

THE GREEN JEWEL OF DU LAC ET DU PARC GRAND RESORT





DU LAC ET DU PARC

GRAND RESORT

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PARK GUIDE

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DU LAC ET DU PARC

GRAND RESORT

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Preface

The dense texture of the Grand Resort's park with its many species of plants and flowers is made up of bamboo and palm trees and a typical Mediterranean flora, whose development is aided by the special climatic conditions of Upper Garda, whether it be the native flora such as holm oak, laurel, myrtle, Italian pine, or cultivated plants such as olive, cypress and oleander.

The flowering and the diversity of the various species are very exciting and encourage our guests to continue the tour of the park to explore its natural beauty. To satisfy your curiosity we have decided to create a small botanical guide that will help you recognize and appreciate the unique characteristics of each species.

While studying these elements, this spring we added a remarkable work of restoration and enhancement of plants, recovering some small but crucial characters of the landscape. The objectives of this project are not only the preservation and enhancement of the typical flora of our resort, but also a desire to offer new opportunities for a holiday centred on the discovery and observation of the environment and landscape. We have also provided a modern key to understanding, by selecting about 30 plants and marking them with a Qr-code that offers access to additional information and pictures of the plant.

We wish you a pleasant stay and many new discoveries within our park!

HOTEL PENSION WITZMANN HOTEL LAGO E PARCO HOTEL DU LAC ET DU PARC · SEE- UND PARKHOTEL



The park of Du Lac et Du Parc Grand Resort in Riva del Garda

The central structure of Du Lac et Du Parc Grand Resort is a historic hotel.

The location of the Grand Resort is referred to in the nineteenth-century documents with the names Grez. Sabbioni, Galenzana: this last name is derived from the Galenzana stream, originating in the area of Arco and before reaching the lake Garda, it passes under viale Rovereto to form the lakes in our park. In the 19th century the area where the river and lake waters met was swampy; it was referred to as "still waters" and was occupied by fishmongers, with numerous wooden bridges for transit. The land was divided into several larger parcels with a few farmhouses. One of them was bought by Baron Carl Justus Torresani, general director of the Lombardy-Veneto police, who retired to the villa after the revolution in Milan in 1848. The writer Carl Torresani, son of Carl Justus, left us a description of it, enabling us to reconstruct the surroundings. In 1900 he wrote:

"My delight, my paradise, was the garden. [...] Two streams, terse and spacious, teeming with crayfish, covered the entire length... At the lakeside there was a harbour with a large boat, changing cabin, a small forest of alder, in whose tresses the Ora wind played, the cool trade wind of Garda, spying on us each day during the afternoon hour, mitigating the heat by providing a pleasant coolness. In every corner there were bridges, sandstone benches, tiny chapels with ancient frescoes ... [...] It was not a mannerist garden, but that is why there was such an abundance of colourful flowers and I enjoyed the unconscious pleasure of the



colour's effects... And the aroma! In the morning ... I was overwhelmed by the smell of roses, lilies, carnations, hyacinths, wisteria and herbs: lavender, rosemary, thyme, mallow..."

After a few years, upon his death, the property was sold to the mayor of Riva, Gedeone Bernardinelli and later formed the first nucleus of Hotel Du Lac. In 1878 Bernardinelli leased the villa with the surrounding park to Ignaz Witzmann, a Viennese nobleman, who enlarged and transformed it into a hotel, which was run by members of his family until the war years.

During the World War II, the hotel was used as a military hospital and at the end of the conflict it was bought by Roberto Zontini.

In the early 1950s, he decided to renew the management, with his sights on the new trends in tourism; to expand and beautify the building and to enhance the sumptuous park in which it is immersed.

In 1800, following the fashion of the time, Baron Carl Justus Torresani had some exotic flora planted in the park, several of which were rarities for the gardeners of the time like the old example of *Taxodium distichum* or the *Sophora Japonica*. Many of these trees still exist and make this park stand out as one of the most beautiful gardens of Lake Garda.





MAP OF THE PARK AND DISTRIBUTION OF THE PLANTS

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Taxodium distichum L. PP. 28/29 Deciduous plants with tree appearance



Catalpa bignonioides Walter

Southern catalpa

Introduced in Europe in 1726.

suitable for fences and windbreaks.

It is a tree, with a full, rounded foliage. It is a very popular ornamental plant, because of its beautiful, though deciduous, leaves. Its fragrant flowers are gathered in large erect panicles in the spring and the characteristic fruits are elongated and hanging, about 30 cm long. Each individual flower is similar in shape to that of the climbing bignonia from which the species takes its name, in fact both belong to the order of Tubiflorae, i.e., with tubular flowers. Its flowers are hermaphrodites, having both male and female reproductive organs. Because of the fruit, a long and thin pod, it is also called the cigar tree. It is very hardy and prefers fresh soil. Its timber is Scientific classification

Family: **Bignoniaceae**

Genus: Catalpa

Species: Catalpa bignonioides Walter

Origin: temperate regions of North America



An Italian horticulturalist created a hybrid variety of catalpa in which the foliage and wood have an aroma that acts as a natural mosquito repellent. The variety is called *catambra*.





Gleditsia triacanthos L.

Honey locust

Introduced in Europe the beginning of the 1700s. It was introduced and cultivated in Italy in 1712 to line streets, as an ornamental plant in parks, gardens, and for impenetrable hedges as defense. Now naturalized in Italy, it grows in regions up to 700 m of altitude.

The Triachanthos species name means "three thorns" because they often have a long central spine and two shorter lateral ones. Instead, the name of the genus was given by Carl Linnaeus to honor the German botanist Gleditsch. The Italian name Spino di Giuda (*Thorn of Judas*) clearly refers to the crown of thorns worn by Jesus. The tree, which can grow up to 30-40 meters tall, has a crown composed of ascending branches with woody thorns, some of which are fertile, others sterile. The leaves are compound and deciduous. The flowers are greenish yellow, fragrant and inconspicuous, are arranged in axillary *racemes* along an elongated unbranched axis. Flowering is in May-June. The fruit is a large pod 20-40 centimeters long, slightly sickle-shaped, and reddish brown that falls whole in winter; that is, the seeds do not fall out before (*indehiscent*). Scientific classification

Family: Fabaceae

Genus: **Gleditsia**

Species: Gleditsia triacanthos L.

Origin:

Northeast America (the Great Lakes), tropical Africa, Central Asia



The three thorns of the gleditsia





Magnolia soulangeana Soul. - Bod

Saucer magnolia

The Magnoliaceae family originates from two different geographical areas, Asia and America.

The Magnolia of Soulange, which is named after the botanist who obtained it by crossing two other species of magnolia, comes to us from the East, as opposed to the *Magnolia* grandiflora, originally from North America. It is therefore a hybrid. It has deciduous leaves that appear only after flowering. Flower color varies from white to pink, to violet, because there are many varieties (about a hundred) and there is a higher variability among hybrids. The growth can be both arboreal and shrub, often multi-trunk, with irregular crowns, and usually with many branches.

Although it is resistant to cold temperatures, it cannot withstand spring frosts that can destroy early flowering in the beginning of spring. Scientific classification

Family: Magnoliaceae

Genus: **Magnolia**

Species: Magnolia soulangeana Soul. - Bod

Origin: China and Japan





Metasequoia glyptostroboides Hu & Cheng Dawn redwood

In China it was called "water fir", as it prefers moist soil if not marshes. Its shape is pyramidal, majestic; dimensions are significant; the plant can reach 30 m in height. The leaves are light green in color, needle-like, opposed, thin, flattened and slightly curved at the end. They are soft to the touch and feel like feathers. The fruits, round *cones*, have a long stem like cherries.

It is one of the few conifers that sheds its leaves in the fall, along with taxodium and larch. Until 1945 this was known only to paleobotanists for the fossil remains found, and it was considered extinct since the late Pliocene era; at least 2 million years ago. In the mid 1940s, a group of Chinese botanists ventured into a secluded valley, where about 100 large live specimens were found that had until then escaped the attention of botanists. Scientific classification

Family: Cupressaceae

Genus: Metasequoia

Species: Metasequoia glyptostroboides Hu & Cheng

Origin: China



20/21





Paulownia tomentosa Thunberg

Princess tree

In Europe since the mid-1800s.

The plant is native to China, where for centuries it was believed to have magical virtues: an essay from the eleventh century describes its use to slow aging and hair loss. The plant came to Italy from Japan.

A majestic plant with very fast growth, it reaches over 10-15 metres in height. With large heart-shaped leaves, green on top and furry underneath, it loses its leaves in early fall. The flower buds are present on the plant throughout the winter gathered in rigid bunches, covered with a thin brownish fuzz. They open in spring, before the leaves, with a show of beautiful flowers. with a tubular corolla that is lavender blue in color. The leaves are opposite and about 30 cm long. The fruits are large green capsules, oval with a pointed apex. They are divided into two chambers that open when ripe, allowing the release of numerous small seeds, equipped with short wings to be transported by the wind. The dry capsules remain on the plant all winter, along with the flower buds. There are paulownia plantations for its use as an ornamental plant, but also for the superior quality of the wood it is used for reforestation, as fuel and for construction.

Scientific classification

Family: Paulowniaceae

Genus: **Paulownia**

Species: Paulownia tomentosa Thunberg

Origin: China and Japan



Interesting is that the name derives from Anna Pavlovna (or Paulowna), daughter of Tsar Paul I of Russia.





Platanus hybrida Broterus s.l.

Plane tree

Natural hybrid between the Oriental plane and Western plane, but for its morphological characteristics, it is closest to the Oriental plane.

The hybridization took place in 1670 in England and spread to almost entirely replace the two wild species. It is a large tree, up to 15-30 meters, with very sturdy branches and with the characteristic bark that peels off in large, thin layers.

It is a very robust tree, able to live up to 300 years. The leaves are palmate, alternate, deciduous, with 3-5 lobes of which the center is as wide as it is long. The fruits are achenes, varying in number from 2 to 5, fixed and aligned on a long dangling stalk that remains on the plant most of the year. When the fruit dries, it opens, releasing the feathery seeds that are carried away by the wind. It lives well in moist kinds of soil as do our own specimens. It is used as an ornamental plant and also withstands polluted urban environments.

The wood is of great quality and durability.



Scientific classification

Family: Platanaceae

Genus: **Platanus**

Species: Platanus hybrida Broterus s.l.



Unfortunately plane trees were recently subject to attacks of an insect and a cryptogam, which can cause the death of mature trees.



Sophora japonica pendula L.

Japanese pagoda tree

Introduced in Europe in the 1700s as an ornamental plant. This specimen belongs to the *pendula* variety, whose branches are stretched and hanging, sometimes down to the ground, often with particularly pronounced undulations and twisted so as to appear deliberately obtained. The plant is known for its decorative dome shape of the crown and the beautiful flowering that occurs between June and July with clusters of yellowish-white fragrant flowers similar to those of the bean. It does not flower before approximately 10 years of age.

The leaves are composed of 9-15 small oval leaves that are dark green on top, with the underside a slight bluish tone. The fruits are typical of the family: light green pods, fleshy, with bottlenecks that separate one seed from the other, like a rosary.

Scientific classification

Family: Fabaceae

Genus: Sophora

Species: Sophora japonica pendula L.

Origin: China and Korea. It was later introduced in Japan







Taxodium distichum L.

Bald cypress

In Europe since 1640, the first example was introduced in Italy in 1828 in the botanical gardens of Padua. The taxodium existing in Pavia in the garden of the Geophysical Observatory is considered monumental, with a circumference of 390-400 cm and height of 32 m, as well as the one at Villa Flavia, with a circumference of 480 cm and a height of 32 m. Our specimen has a circumference of 620 cm and height exceeding 30 meters but unfortunately there is no documentation on its planting. The leaves are thin and needle-like and a striking feature is their red coloration before they fall. The adjective "bald" was given to the plant because of the transience of its leaves. It prefers wetlands and this causes the formation of particular structures like "knees" that are evident at the base of the trunk (gerial roots), which are essential for the oxygenation of the roots, making the plant unmistakable. The same phenomenon is found in different plant species but in a similar environment: the mangrove forests of the Equator. After fertilization, the female reproductive organs produce a round fruit with diamond-shaped scales (cones). Its wood is used as timber for heavy construction and for ships, as well as for railroad ties.

Scientific classification

Family: Cupressaceae

Genus: **Taxodium**

Species: Taxodium distichum L.

Origin: Southeast regions of the United States



Aerial roots of the taxodium





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Cinnamomum camphora L. PP. 34/35

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Thuja plicata J. Donn PP. 48/49

Evergreen plants with tree appearance

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Calocedrus decurrens Torrey

Incense cedar tree

This tree was introduced in Europe in 1853.

The genus name, calocedrus, comes from the Greek kalòs = beautiful, and cedar, and means "beautiful cedar" even if it is not to be put in the category with the plants that we call cedars. The species name, *decurrens*, refers to the fact that small scale-shaped leaves, originate on the twig (bringing to mind the scales of snakes, or the tiles on a roof). It is a tree that can reach 40 m in height: the highest known measures 67 m.

The trunk is slender, the silhouette is column-like and it becomes irregular in old specimens. The bark is thin, smooth, greyish-green, becoming thick, brownish red, and deeply furrowed with age. The branches, on young twigs, are ascending flattened and narrow. The fruits are single cones, oblong when closed, 17-30 mm long, reddish brown, and containing small winged seeds, like those of other conifers. In our park there is also the *gold variegated* variety with dark green and yellow gold leaves. Scientific classification

Family: Cupressaceae

Genus: Calocedrus

Species: Calocedrus decurrens Torrey

Origin: forests of western North America, from Oregon to Southern California







Cinnamomum camphora L.

Camphor tree

In Italy, the first camphor tree is presumed to have been planted in 1820 in the gardens of Palazzo Borromeo on Isola Bella on Lake Maggiore. It is a large evergreen tree which can exceed 30 meters in height.

It lives a long time, the silhouette is erect, branched, and the foliage is dense, consisting of oval leaves, opposite, with three major veins, red when young, light green when ripe, and red before falling again.

The bloom is inconspicuous: the flowers are small and whitish with short and sparse spikes on the axis of the leaves, and *drupes* turn black when ripe.

All parts of the plant are rich in essential oil: to obtain camphor crystals, wood chips are distilled in a current of steam. Scientific classification

Family: Lauraceae

Genus: Cinnamomum

Species: Cinnamomum camphora L.

Origin: China, Japan and Formosa, where it forms entire forests



In 1300, Marco Polo said he crossed in China forests with "many trees that make camphor".




Cryptomeria japonica D. Don and C. j. cultivar elegans

Japanese cedar

In Japan and China its natural state is wild, but it is the Japanese form with short leaves that was introduced to Europe in the mid-19th century.

In Japan, known by the common names "peacock pine" and "fir of mercy", it is often planted near temples. Dense forests of Cryptomeria are present in the Japanese island of Hondo, where it is cut, taking advantage of its particular feature, rare among conifers, of producing new shoots.

The superficial part of the bark is red-brown and comes off in long lengthwise strips. The leaves are needle-shaped and curved, tender although sharp, and are arranged in spiral form on the branch. One feature, the change of color of its leaves in the winter, is particularly evident in the elegans and turns from green to a soft brown purple. The male flowers are globular and brown, gathered in small groups, while the female flowers are small green isolated rosettes at the apex of the branches. The fruits, which are a transformation of the fertilized female flowers, are rounded cones, formed by scales with curved hooks that open at maturity. The triangular seeds have a very small wing. The wood is strong, durable and easy to work with: in Japan, it is used for construction.



Scientific classification

Family: Cupressaceae

Genus: Cryptomeria

Species: Cryptomeria japonica D. Don.

Origin: Japan and southern China





Cupressus cashmeriana Royle

Kashmir cypress

The plant was first reported in 1838 by J. F. Royle in a garden in Kashmir. It is probably native to Bhutan, and it is not known to grow wild. According to many experts, it could be a form of *cupressus torulosa*, a Himalayan plant as well, which has retained some of its characteristics from its early stage of life. It is a massive conifer, rather rare, which can reach 45 meters in height.

Its shape is pyramidal, with a distinguishing feature of the plant: the secondary long pendulous branches. The leaves, in the form of scales, the same as all the plants of its family, are green. The small cones are brown.

This cypress is without a doubt the most ornamental but requires the most mild and humid climates.

Some beautiful specimens are found in gardens along the banks of the great pre-alpine lakes: such as in our case.

Scientific classification

Family: Cupressaceae

Genus: Cupressus

Species: Cupressus cashmeriana Royle

Origin: eastern Himalayas, Bhutan and North-East India



The hanging branches and cones of the Kashmir cypress





Cupressus sempervirens L.

Italian cypress

The genus name may have come from the word Cyprus, and in fact the plant is native to the eastern Mediterranean, probably introduced in Italy in ancient times, perhaps by the Etruscans or by the Phoenicians.

It has spread so much that it has become an extraordinary element of typical Italian landscapes, such as Tuscany and Umbria. In the north of Italy it is often planted near burial sites. It is a very long-living evergreen tree that can reach 30 m in height and more in older specimens. The shape of the silhouette is varied, from pyramidal-conical and pointed to expanded with almost horizontal branches.

Its dark foliage is due to scaly leaves, typical of the family, about I mm long and densely overlapping like the scales of a fish. The male and female flowers are on the same plant (monoecious, from Greek, meaning in one house). After pollination, fruits form cones with woody shield-shaped (peltate) scales and a multi-faceted shape with a diameter of about 2-4 cm. Each scale contains up to 20 small winged seeds that, when the scales dry out, fall out and are dispersed by the wind. Scientific classification

Family: Cupressaceae

Genus: Cupressus

Species: Cupressus sempervirens L.

Origin: Eastern Mediterranean



For the past fifty years, these cypresses have been threatened by a fungal disease, widespread in Italy, which causes the slow destruction of the plant and the fight to combat it is proving difficult.





Eriobotrya japonica Thunberg

Loquat tree

This tree was introduced to Europe in 1787 by China and Japan, as an ornamental and for its edible fruits.

It is fast-growing, with an erect trunk and umbrella shaped crown.

It has large leathery leaves, evergreen, dark green on top and with rusty-colored fur on the underside. The flowers are yellowish-white, bunched in dense furry panicles in the shape of a pyramid, and give off a pleasant scent of bitter almonds. They bloom from November to February. The bloom is very rich.

Its beautiful yellow-orange, sweet and juicy fruit ripens in late spring. Initially the fruit is covered with a thin fuzz, which disappears during maturation. The large and shiny seeds are brown in color, varying in number from 2 to 3 per fruit. Distribution: The plant is considered naturalized in the entire Italian peninsula. In the Garda region, nearly every house in the countryside has an old loquat tree. Scientific classification

Family: **Rosaceae**

Genus: Eriobotrya

Species: Eriobotrya japonica Thunberg

Origin: China and Japan







Magnolia grandiflora L.

Large-flowered magnolia

It was first introduced in Europe in 1837. The genus name comes from Pierre Magnol, the French botanist, who lived between 1600 and 1700.

It is an ancient plant. It is believed that the plants of this family are the first *angiosperms* (plants with flowers, fruit, and protected seeds and ovules) that appeared on earth. It has large oval leaves that are evergreen, very shiny on top and rust color on the underside. The life of the leaf is two years, so a change is not frequent. The flowers are solitary and large, as the name of the species implies, and white and fragrant. The cone-shaped fruits contain bright red seeds which, once mature, emerge from their place and remain hanging from a long flexible stem before falling to the ground. The wood is very hard, suitable for furniture and fixtures. Scientific classification

Family: Magnoliaceae

Genus: **Magnolia**

Species: Magnolia grandiflora L.

Origin: Eastern North America



Archaeologists have found by about 80 species of magnolia fossils dating back 95 million years ago, so we can consider them living fossils.





Pinus pinea L.

Stone pine

A Mediterranean tree par excellence, whose area extends from Crimea to Portugal and Algeria. It is highly likely that it is indigenous to Italy, where it has been grown and planted since ancient times.

Its specific name refers to the cone and the edible seeds that contain pine nuts.

It is a majestic tree, with large umbrella-like foliage; it reaches 25-30 metres in height and can reach 200-250 years of age. In adult trees, the bark is reddish- gray externally with deep longitudinal cracks. The sinuous pale green needles are grouped in pairs, are 10-15 cm long and remain on the plant for 2 or 3 years before falling. Flowering occurs in April and May: the male cells are grouped in small yellow cylindrical cones and the female ones are pink-violet, oval, rigid and about 2 cm long. These cones are 8 to 14 cm long and 7-10 cm wide. Reddish brown when ripe, they are shiny and resinous. They have thick, woody scales, each of which protects 2 large seeds about 2 cm long containing the edible pine nuts, the main motive for cultivation.

Its wood, very resinous and heavy, it is of poor quality and is mainly used for construction and coverings.

Pine nuts are the main ingredients of pesto and zelten (typical Trentino cake).

Scientific classification

Family: **Pinaceae**

Genus: **Pinus**

Species: Pinus pinea L. SO_2 (anidride solforosa)

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This tree is very sensitive to sulfur dioxide and fluoride: they produce specific symptoms that allow us to consider the tree as a biological indicator.



Evergreen plants with tree appearance

Thuja plicata J. Donn

Pacific redcedar

Introduced in Europe in 1853,

This is the largest of the thuja and one of the most important forest species of the North American Pacific coast where it forms mixed forests with other conifers. The maximum size reported is 75 m in height and 20 m in circumference. The foliage is irregular, formed by branches spread out mainly horizontally; the bark is quite thick, fibrous, and reddish when young. The leaves are scale-like and flatly pressed. A characteristic of this species is the fruity scent emanating from the crushed leaves. Male and female cones are found on

from the crushed leaves. Male and female cones are found or the same plant (*monoecious*), but not on the same branch. Cones, just over 1 cm long, are rigid and green when young, brown when ripe: when the scales open, the winged seeds rely on the wind.

It prefers deep and humid, slightly acidic soil.

Scientific classification

Family: Cupressaceae

Genus: **Thuja**

Species: Thuja plicata J. Donn

Origin: West coast of North America

The wood of this tree is precious, lightweight (guitars are made from it), durable and easily workable.

The natives of North America exploited its light weight and water resistance to build their canoes, but also to carve their sacred totems.







MAP OF THE PARK AND DISTRIBUTION OF THE PLANTS

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Acca sellowiana O. Berg PP. 52/53

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Aucuba japonica Thunberg PP. 54/55

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Buxus sempervirens L. PP. 56/57

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Myrtus communis L. PP. 58/59

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Nerium oleander L. PP. 60/61 Evergreen plants with shrub appearance

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Acca sellowiana O. Berg

Guavasteen

It is an evergreen shrub.

The oval leaves are grayish green on top and gray underneath, and are thick and leathery. They have particularly beautiful flowers, white-pink with very long stamens of red, in small clusters like tiny fireworks. The fruits are oval, from 4 to 8 cm long, edible and the plant is cultivated in many countries, including Australia, Africa and even in the South of Italy. It has a scent reminiscent of pineapple and matures only in warm climates. The harvest begins in October and lasts for a couple of months.

Elsewhere, the plant is grown for purely ornamental purposes: the ideal climate for the plant is wherever olives can be grown.

Scientific classification

Family: Myrtaceae

Genus: **Acca**

Species: Acca sellowiana O. Berg

Origin: warm forests of South America







Aucuba japonica Thunberg

Japanese laurel

This is an evergreen shrub that had been cultivated in China and Japan long before its introduction in Europe in the late 1700s.

It has a dense and rounded crown. The leaves are large, oval, green thickly variegated white. The leaf contour is serrated. Male and female flowers grow on the same plant (*monoecious* plant = one house) and are grouped in terminal panicles. The fruits are bright red berries. Each fruit contains a single seed. Aucuba grows well in semi-shady areas and withstands cold temperatures. There are other varieties in addition to this, some of which are also in the park, with completely green leaves or variegated green and yellow with a white border. The crushed leaves were used in Chinese folk medicine to treat burns, swelling or chilblains: the active ingredient, the glycoside *aucubin* is the subject of experimental studies to verify its properties, not yet confirmed.

Scientific classification

Family: Garryaceae

Genus: **Aucuba**

Species: Aucuba japonica Thunberg

Origin: Japan, Korea, Taiwan and the southern provinces of China



The flowers with yellow center buttons are male (producing pollen grains), those with green buttons are female (producing an egg to be fertilized)







Buxus sempervirens L.

Boxtree

It is a native species which grows mainly on calcium-rich soil and has spread from sea level to mountainous areas, in heatloving broadleaf forests. Typically, this plant is found in a shrub form, seldom arboreal.

The evergreen leaves, opposed and with smooth edges, are glossy, dark green on the top and lighter underneath. The edges of the leaves are slightly rounded. The inflorescence is yellowish, with a female flower without petals in the center, surrounded by more male flowers. The fruit is a lobed capsule; each lobe ends with a point.

In the past it was much sought after for its exceptionally hard wood, like all woods of slow-growing plants, and nondeformable, used to build *boxes* (see the English name box), chess pieces, taps for casks, musical instruments, mathematical tools, and in the Middle Ages, even containers for consecrated bosts

The plant is used in medicine (*medicinal plant*) as anti-fever, anti-rheumatic, and for a time it even replaced quinine in the treatment of malaria. However, the presence of the toxic *buxina* alkaloid makes it strictly inadvisable for domestic use. Scientific classification

Family: Buxaceae

Genus: Buxus

Species: Buxus sempervirens L.

Origin:

Spontaneous of the western Alps and north and central Apennines to the hills Albani and Abruzzo



The boxwood is so heavy that it does not float on the water!





Myrtus communis L.

True myrtle

It is woody shrub.

A typically Mediterranean plant, it is found mainly along its west coast, up to 500 meters above sea level. It prefers sandy soil, such as beaches and dunes. It tolerates drought well. The young bark is rosy and peels longitudinally in fibrous bundles. The small leaves are opposite, leathery, sessile (no petiole), elliptical or lance-shaped with an acute apex; it has an aromatic scent when crushed - releasing a resin with the presence of terpenes in its essential oil.

The flowers are white and intensely fragrant, solitary or paired and located at the leaf axils. The fruits, elliptical black berries, are used for the production of liquors and in cooking, especially in Sardinia, in fish and meat dishes.

The essential oil extracted from the leaves is known for its balsamic and antiseptic properties for the respiratory tract (it is an ingredient in cough syrups), and is used in the perfume industry for the manufacture of soaps, bath foams and fragrances. Scientific classification

Family: Myrtaceae

Geneus: **Myrtus**

Species: Myrtus communis L.



The aromatic water obtained by distillation of myrtle flowers is a traditional product called Angel Water, used to refresh and hydrate sensitive and reddened skin.





Nerium oleander L.

Common oleander

A typically Mediterranean plant, growing in regions where olives can be cultivated.

It is a small tree or more often a shrub; evergreen with long and very flexible branches. Leaves are permanent, simple, leathery, usually in whorls of three, and with short petioles. Their shape is oblong with a pointed apex, glossy and dark green on the upper side and lighter underneath. To better withstand arid climates, the leaf contains a cavity with coated hairs to protect the pore (organs comparable to small mouths whose opening controls water leakage) to limit transpiration. The flowers are hermaphrodite, showy, with 5 pink, white or yellow petals, and a 5 lobed calyx. The number 5 is also significant for the reproductive organs, at least for the *stamens*, bearing the male reproductive cells. The fruit is a brown *follicle*, 10-15 cm long which opens at maturity scattering feathery seeds - *anemophilous* (propagated by the wind).

The habitat of the plant is in the wild: rocky environments, along a sandy riverbed or limestone walls, from sea level to 200 m altitude.

Scientific classification

Family: Apocynaceae

Genus: **Nerium**

Species: Nerium oleander L.



The plant is poisonous in all its parts due to the presence of toxic alkaloids. In some Italian regions is called donkey killer or horse killer.





MAP OF THE PARK AND DISTRIBUTION OF THE PLANTS

0

Ligustrum lucidum W. T. Aiton PP. 64/65

2

Osmanthus fragrans Lour PP. 66/67

8

Photinia serrulata Lindley PP. 68/69

4

Prunus laurocerasus L. PP. 70/71

6

Quercus ilex L. PP. 72/73

6

Taxus baccata L. PP. 74/75





Ligustrum lucidum W. T. Aiton

Chinese privet

It was introduced in Europe in 1794.

It grows as a shrub and a small tree (up to 8-9 m).

The leaves are opposite, evergreen, oval - tapering to a point, with the top shiny and clear, and the underside opaque. The edges are clear cut. The tiny white flowers are grouped in erect pyramidal bunches 10-20 cm long. The fruits are spherical and opaque blue, very numerous. The bark is smooth and light gray. It is widely used in parks, for the formation of hedges and street trees, due to its resistance to pollution.

It is becoming naturalized, especially in olive groves. Some parts of the plant are used in traditional Chinese medicine for various disorders: dizziness, ringing in the ears, eye disorders, and others.

Some Italian authors consider the plant at least suspect if not downright toxic.

Scientific classification

Family: Oleaceae

Genus: Ligustrum

Species: *Ligustrum lucidum* W. T. Aiton

Origin: China, Korea and Japan

The Chinese call the privet "pe-lo shoo" or wax bush. In fact wax is deposited on the leaves by the action of insect pests. Its wood is called white wax wood. It is a hard but flexible wood and can be hit without breaking. It has long been used in China and Korea for the construction of slats, spears, walking sticks and weapons for martial arts.







Osmanthus fragrans Lour

Fragrant olive

The *olea fragrans* (another name for the plant) is evergreen and can have the appearance of a tree or a shrub. Cultivated as an ornamental plant, it has a long history in the country of origin as a medicinal plant and used as a flavoring for tea. The genus name is derived from the greek *osmanthus*, *osma* meaning fragrance and *anthos* meaning flower. The Chinese city of Guilin (forest of sweet osmanthus) is known for its wealth of osmanthus trees. In the Himalayas it grows up to 1200 - 3000 m above sea level.

The leaves are opposite, oblong, serrated and glossy green. The flowers are small, with four petals, in axillary bunches (between the branch and the leaf) of off-white color and quite fragrant; they bloom in early autumn, when no other aroma can confuse us.

The *aurantiacus* variety has orange flowers and is used in the East to give aroma to green tea.

There is a variety (*osmanthus aquifolium*) with foliar *dimorphism*, meaning leaves of different shapes, also present in the park. Some leaves have sharp edges like holly and others have smooth edges but with a point at the apex.

It is a common, slow-growing tree like other plants of the same family (the olive, for example) and prefers rich and fresh soil. It suffers when there is drought in the southern regions, and it is grown most successfully in gardens in northern Italy. Scientific classification

Family: Oleaceae

Genus: Osmanthus

Species: Osmanthus fragrans Lour

Origin: China and Japan





Photinia serrulata Lindley

Chinese photinia

The name derives from the greek *photos* = light, perhaps for the luster of its leaves. It may take the arboreal form (reaching 5-8 meters in height) or remain a shrub, where it is widely used for hedges.

The long evergreen leaves are leathery, oblong, with a finely serrated margin. They are evergreen, but they assume a bright red color in the budding stage before they fall. The small white flowers, appearing in April, are grouped in light umbrella shapes (*corymbs*).

The fruits are small red berries. It adapts to any terrain and is very hardy.



Scientific classification

Family: **Rosaceae**

Genus: Photinia

Species: Photinia serrulata Lindley

Origin: China and Japan





Prunus laurocerasus L.

Cherry laurel

A shrub or small tree native to Asia Minor, which was introduced in Italy in the second half of the sixteenth century. It is widely cultivated in gardens, isolated or in groups, to make dense hedges as it tolerates pruning. It grows throughout Italy but only in areas with a Mediterranean climate. The large evergreen leaves are alternate, glossy and bright green. Their shape is oblong with a finely serrated contour. If crushed, they emit the odor of bitter almonds: *prussic* acid, the same as in bitter almonds, which makes the plant poisonous in all its parts except the pulp of the fruit. The small white flowers are on long vertical *racemes* which grow from the nodes of the leaf and mature in March-April. The fruits are *berries*, black and shiny when ripe, about 8-12 mm long in hanging clusters. Scientific classification

Family: **Rosaceae**

Genus: Prunus

Species: Prunus laurocerasus L.

Origin: Asia Minor



In spite of the toxicity of the plant, birds eat the fruit with impunity.




Quercus ilex L.

Holly oak

This is an evergreen oak in tree form and can grow up to 20-25 metres. It assumes the form of a shrub if the plant grows on poor soil or rocky terrain. The leathery leaves are a very dark green on the upper side and covered with fine fuzz underneath. Their shape is extremely variable, and the outline can be straight or toothed. The small male and female flowers are separate, while living on the same plant (monoecious plant) and the result, as in all oaks, is a brown acorn, protected by a hemispheric dome with a short stalk or sessile (without stalks). It lives preferably on acid soils, where there are calcium-rich rocks such as those of our mountains. This tree is the main component of the Mediterranean area. present along the entire Italian coastline with our special climatic conditions; it grows just north of Lake Garda, as a relic of previous, warmer climates. If we look up our mountains, steep and inhospitable cliffs, we are sure to see the dark green of oak shrubs.

Scientific classification

Family: Fagaceae

Genus: Quercus

Species: Quercus ilex L.

Origin: Mediterranean



One of the largest, presumably centuriesold specimens in our area is located in Sarche, along the state road SS 45, near a square next to an orangery. Its circumference, measured at 1.30 m from the base, is 515 cm and it is 25 meters high.





Taxus baccata L.

English yew

Medium-sized tree, reaching 15-18 metres, can exceed these dimensions in very old specimens; in Supramonte, Sardinia, there is a tree 28 metres tall. Extraordinarily long-living plant, it is not uncommon in Europe to see examples that are over thousands of years old. In Italy, it grows wild in the beech forest, from 300 to 1600 m above sea level.

The trunk is short, often branched from the base, the foliage is a beautiful dark green, pyramid-shaped and rounded initially in adult plants. The bark is red -brown and peels off in thin plates. The linear leaves are flexible, acute but not thorny; the upper surface is a glossy, dark green, while the underside is yellowish.

The flowers: being *dioecious* (= two houses in Greek), the male reproductive cells are carried by one, and the female by another. Flowering occurs between February and April. The seed is blackish, oval and is almost completely surrounded by a bright red gelatinous cup (*aril*).

Leaves and seeds are very poisonous to humans and contain taxine alkaloids: birds feed on the sweet aril, expelling the seed with feces and thus promote the dissemination without intoxication.

The wood is very durable and flexible, in the past it was an excellent material for the construction of bows and sought after by furniture makers and sculptors.

As a result of recent discoveries, a precursor of taxol is extracted from the bark, an active ingredient which has been effective against some tumours of the female genitalia.

Scientific classification

Family: **Taxaceae**

Genus: **Taxus**

Species: *Taxus baccata* L.



Next to Otzi, the lceman mummy, was found a wooden yew bow of 182 cm dating back more than 5000 years.



MAP OF THE PARK AND DISTRIBUTION OF THE PLANTS

0

Chamaerops humilis L. PP. 78/79

2

Phoenix canariensis Chabaud PP. 80/81

3

Phyllostachys mitis A. and C. Rivière PP. 82/83

4

Trachycarpus fortunei Hook PP. 84/85

6

Washingtonia filifera Linden PP. 86/87 Palm trees and bamboo



Chamaerops humilis L.

European fan palm

Palm tree with strong roots and short trunk compared to the other trees of the same family. At the base of the trunk new shoots are produced which give the plant the characteristic bunch-like appearance. The leaves (*fronds*) are fan-shaped, green and shiny on the upper surface, opaque and whitish underneath. They are grouped in a terminal tuft as in all palm trees. Their semi-cylindrical *stem* has sharp, rigid spines along the edges.

It is a plant that is well adapted to our climate, even enduring temperatures of 10-12 centigrade degrees below zero. At the end of the spring, showy inflorescences, in the form of cobs (*spadix*) are released from the two leaf sheaths and show several small greenish flowers. The fruits are fleshy elliptical *drupes* 2-3 cm in length which become brownish at maturity, similar to real dates, only smaller and with a woody seed inside.

Scientific classification

Family: Arecaceae

Genus: Chamaerops

Species: Chamaerops humilis L.

Origin: Mediterranean Europe



Sharp spines along the trunk





Phoenix canariensis Chabaud

Canary Island date palm

Shape: the stem is columnar with a thick tuft of leaves on the ends, plume shaped, with rigid and pointed segments, 2 to 5 metres long. It resembles the date palm, differing by its thicker, truly majestic crown.

This is one of the most famous palm trees and regarded as one of the most ornamental found in Mediterranean gardens. The flowers are unisexual brought by a spike inflorescence, and while female flowers can reach 2 metres in length, the male measures about 50 centimetres. The fruit is an oval *drupe*, similar to that of the date palm, but is not considered edible. It has a woody seed inside. Scientific classification

Family: Arecaceae

Genus: Phoenix

Species: Phoenix canariensis Chabaud

Origin: Canary Islands



A few years ago the Asian palm weevil arrived in Italy, the parasite that attacks many kinds of palms, but especially the Phoenix, causing their death. It seems that wild plants, born from seeds that have fallen to the ground from the mother plant do not become infested, as opposed to those that are cultivated.





Phyllostachys mitis A. and C. Rivière^{*} Bamboo

A herbaceous plant that grows to considerable heights (8-12 m) and also notable for its occupation of territory: it has creeping stems that reach below ground, so that subterranean barriers must be constructed to stop its spread.

The part that emerges from the soil that we see, are the *culms* or stalks, gnarled and hollow, like rods, with a diameter that can reach up to 10-15 cm.

Their branches are composed of thin twigs, opposed leaves and have a green sheath. The characteristic shape of the leaves is linear with distinct parallel ribs.

When the plants have finished growing in height, they also stop increasing in width, also in the spaces between the nodes of their stalks. Flowers only appear on adult trees at the end of their lives and in some species occur always in the same period, at a precise time and simultaneously throughout the world. For example, the *bambusa arundinacea* blooms every 32 years, and the *phyllostachys nigra* blooms on its 120th year. The tender shoots of this bambusacea are edible. Scientific classification

Family: Poaceae

Genus: Phyllostachys

Species: Phyllostachys mitis A. and C. Rivière

Origin: China and Japan



It seems that the common name for bamboo (similar also in other European languages) evokes the noise produced by an explosion, resulting from the habit of burning young reeds, common in the past, to scare away any animals with the noise produced during combustion.





Trachycarpus fortunei Hook

Windmill palm

Shape: A long thin trunk with a crown of dark green leaves that are shiny on the top and matte underneath. The leaf is fan-shaped with linear rigid segments welded together about halfway up the leaf. The *petiole* is long and devoid of spines on the stem and continues even after the death of the leaf. It is a very hearty palm, and very well adapted to our climate, so much so that it even grows wild.

It produces a very long inflorescence (*spadix*) that has male yellow and female green flowers. The cluster of small blackish fruits that comes out is very large and thick: the fruit has a very thin layer of pulp and is therefore not very attractive to animals.

Scientific classification

Family: **Arecaceae**

Genus: **Trachycarpus**

Species: Trachycarpus fortunei Hook

Origin: **China**







Washingtonia filifera Linden

Desert fan

It has a large column-like trunk which can reach 20-25 meters in height. Typical of the variety is the pattern formed on the stem from the intersection of the broad bases of the leaf petioles, visible after pruning. It has a full tuft of palmate fanshaped leaves, with robust segments, meeting up in the middle leaf and frayed at the edges. Under the green leaves, the old leaves split and hang as frond.

The leaf stalks can be up to 1-2 meters and have strong spines. The fruits are similar to berries, in bunches; small round blackish fruits, containing one ellipsoid seed with a major axis of about 1/2 cm. One of the oldest in Upper Garda is located on the lawn behind the apse of the Collegiate Church of Arco.

Scientific classification

Family: Arecaceae

Genus: Washingtonia

Species: Washingtonia filifera Linden

Origin: California



The name of the genus is not that of the botanist who first classified it, but of the first U.S. President George Washington, to which it was dedicated.

86/87



Glossary

Aerial roots

Are roots above the ground. They are almost always adventitious. They are found in diverse plant species, including epiphytes such as orchids, tropical coastal swamp trees such as mangroves, the resourceful banyan trees, the warmtemperate rainforest rata.

Anemophilous

Refers to a seed, the disclosure of which is entrusted to the wind.

Angiosperm

Plants with ovules contained in a closed ovary and seeds protected inside a fruit. Apetalous (Of a flower) having no petals.

Aril

An exterior covering or appendage of some seeds (as of the yew) that develops after fertilization as an outgrowth from the ovule stalk.

Baccetum

Multiple fruit aggregate consisting of fleshy-indehiscent.

Capitulum

A type of flower head where the bracts are located under the basis.



Cone

A unisexual reproductive structure of plants such as conifers and cycads, consisting of a central axis around which there are scaly, overlapping, spirally arranged leaflike organs that develop pollen-bearing sacs or seeds.

Corymbs

A flat-topped inflorescence in which the flower stalks arise at different levels on the main axis and reach about the same height and in which the outer flowers open first.

Dioecious

Having male reproductive organs in one individual and female in another.

Drupe

Simple fruit , fleshy, formed by a thin, membranous epicarp (skin) , dry or fleshy mesocarp (pulp) and a woody endocarp (stone) that contains the seed ; Examples: cherry, apricot, plum etc.

Edible Can be consumed safely.

Follicle

A dry unilocular fruit formed from one carpel (female reproductive organ) containing two or more seeds.

Gymnosperm

A group of seed-producing plants that includes conifers meaning naked seeds after the unenclosed condition of their seeds.

Indehiscent

Not opening at maturity.

Monoecious

A plant that bears the same individual flowers of both sexes.

Peltate

Shield-shaped.

Raceme

is an unbranched, indeterminate type of inflorescence bearing pedicellate flowers flowers having short floral stalks calledpedicels - along its axis.

Sessile

Attached directly by the base: not raised upon a stalk or peduncle.

Spadix

a type of spike inflorescence having small flowers borne on a fleshy stem.

Stamen

is the pollen-producing reproductive organ of a flower.

Stipe

Stalk that supports some other structure.

Stoma

Microscopic opening, formed by two reniform cells facing one another, which can open or close depending on the turgor of the two cells; the function of the stomata is to regulate plant gas exchange with the outside.

Tomentum

Short, soft covering of fine, soft hairs.



How to use the Qr-code in the park

Do you want more information on the plants of the park? Seen those funky little QR (quick response) bar codes floating around? When you find a QR-code in the park, grab your smartphone and open an app for reading QR-code, framing the symbol and keep it fixed at the center of the screen.

Voila! Here is all the information on the plant you have in front of you!



Piante caducifoglie a portamento arboreo

Bignoniaceae *Catalpa bignonioides* Walter

Catalpa Southern catalpa vöhnlicher Trompetenbaum





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NOTES











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