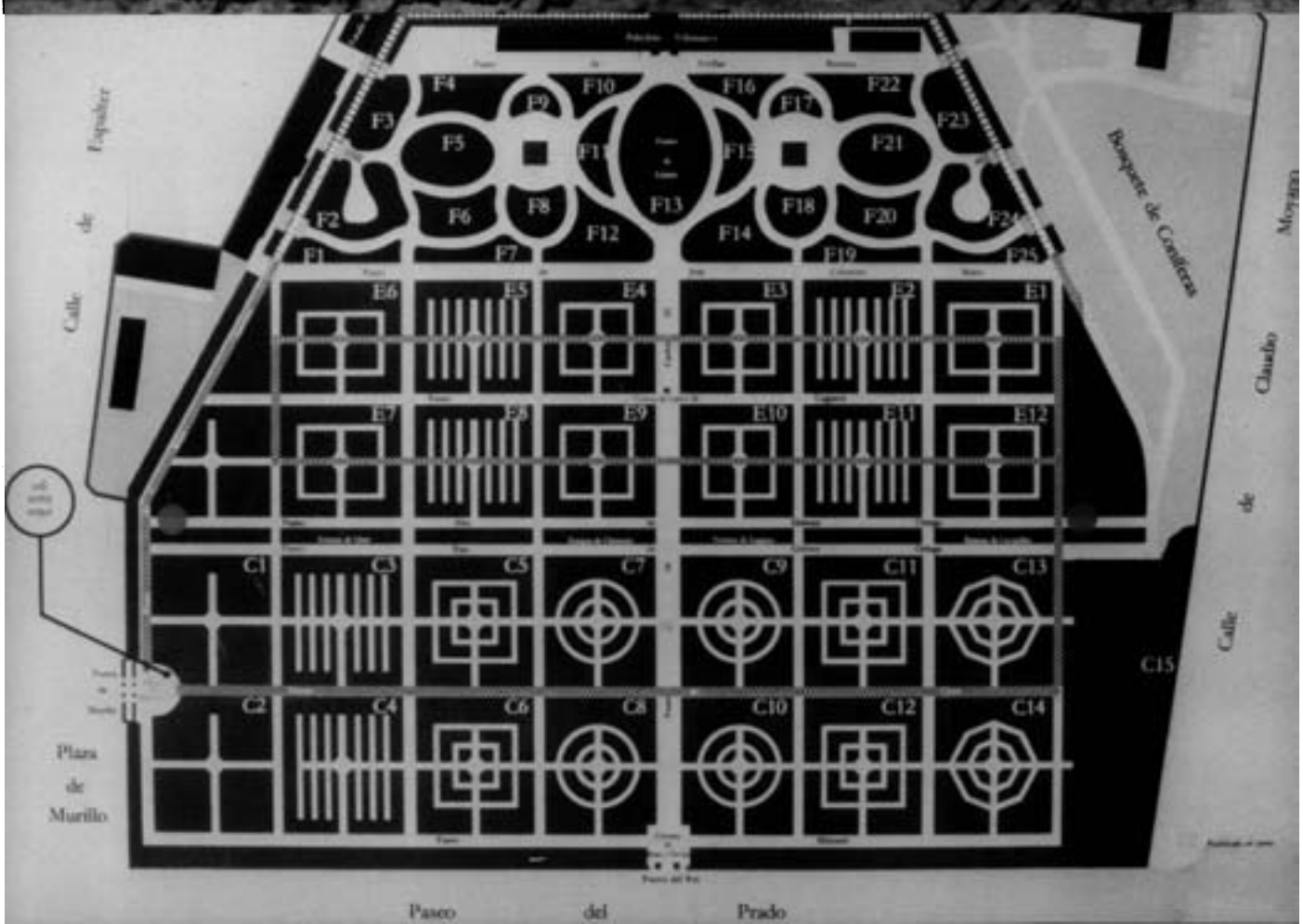


The Madrid Botanical Garden Today: A Brief Photographic Portfolio

Photographs by Ricardo R. Austrich and J. Walter Brain







La terraza alta del Jardín, tradicionalmente llamada Plan de la Flor, por su estructura en forma simétrica, fue remodelada en el año 1870, al estilo romántico italiano. De su trazado original sólo restaban, al siglo XX, apenas sólo los restos de las fuentes laterales, cuadradas y coronadas de urnas en el siglo XIX. La fuente central de Lario, agrandada durante la reforma de 1970, contrasta en el siglo XXI con el fin de los tiempos el eje central. En sus 23 figuras, el diseño de estos años de diseño, se conserva destacan ejemplares arbóreas y numerosas arbustivas ornamentales.

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|----------------------------|--|-------------------------------|
| F1 Capá, Capá laurentino | F11 Pálamo, Capá de Italia | F18 Tapa |
| F2 Clavos, Capá de la Tapa | F12 Nigella, Capá | F19 Cálamo |
| Conservatorio de Vigilia | F13 Walligonia, Pálamo, Capá de Italia | F20 Cálamo del Alba, Madrid |
| Capá de Lario, Madrid | F14 Nigella | F21 Lavandula |
| Capá de Lario | F15 Capá de Italia | F22 Escudilla, Capá de Italia |
| | F16 Pálamo, Capá de Italia | F23 Tapa (Capá de la Tapa) |
| | | F24 Pálamo de la Tapa |

Información general

Pabellón Villanueva

Emparrado

This page. Above: Sign showing the layout of the Romantic "Isabelino" section of the Garden. Below: Sign for the parterre with plants in the Caryophyllidae and Dilleniidae. Opposite page. A Nineteenth Century invernáculo (conservatory, or greenhouse). Page 25. Top: Watercolor of the Royal Gate, by Leandro Silva Delgado. Bottom: Plan of the Garden at the Murillo Gate. Note the "Isabelino" portion of the Garden at the top. Photographs by Ricardo R. Austrich.



En esta cascada se han reunido representantes del superorden Caryophyllales, que son de cuatro órdenes y 34 familias, de distribución tropical, templada o boreal, y de sus primeros miembros del superorden Dilleniidae, que consta de diez órdenes y 79 familias, en su mayoría tropicales, algunas de distribución templada o mediterránea y algunas boreales.

El primer superorden, que ocupa los cuatro cuadros interiores, consta de plantas o maggotas herbáceas, con hojas simples, linealmente carinadas y a veces tricolores en su parte superior. Sus flores son regulares y bisexuales. El número de sépalos, pétalos y otros partes de la flor varían en las inflorescencias primarias de 4 a 5 en las más evolucionadas, al menos en sus partes superiores.

En este superorden se encuentran las numerosas especies de cactus, muchas plantas de mariposa (clavos, besugos), algunas comestibles (arceles, remolachas), y hasta un tipo de mala hierba, y plantas de terreno salino.

Las familias del segundo superorden representadas en los cuadros exteriores, están guiadas por plantas de su mayoría herbáceas, con hojas simples, habitualmente alternas, muchas con desarrollo de espinas. Las flores suelen ser regulares y bisexuales. El involucramento entre pétalos o un múltiplo de esta cifra, numerosas entomofitas y otros tipos.

En este grupo hay especies ornamentales herbáceas (geranio, malva, violeta, begonia) y arbóreas (tilo, álamo, manzano), plantas comestibles (lechuga, zanahoro, papaya), arbustos decorativos en los jardines (magnolia, medlar, etc.), y otros tipos.

Información general

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Emparrado

Itinerario aconsejado



Above: Fountain in front of the Pabellon Villanueva, which is used for public exhibitions, and an attached Eighteenth Century invernáculo (conservatory, or greenhouse). Photograph by J. Walter Brain. Below: View of a parterre, or escuela botánica. Note the boxwood edging around the beds and the fountain. Photograph by Ricardo R. Austrich.

Above: Fountain in front of the Pabellon Villanueva, which is used for public exhibitions, and an attached Eighteenth Century invernáculo (conservatory, or greenhouse). Photograph by J. Walter Brain. Below: View of a parterre, or escuela botánica. Note the boxwood edging around the beds and the fountain. Photograph by Ricardo R. Austrich.





Above: Close-up view of a fountain. Below: One of the Eighteenth Century invernáculos (greenhouses) at the Pabellon Villanueva. The bust on the pedestal in the fountain is of Linnæus. Both photographs were taken by Ricardo R. Austrich.





The “Tapada da Ajuda,” Portugal’s First Botanical Garden

Antonio de Almuda Monteiro

Jules Janick

The Jardim Botânico da Ajuda, a small, “deeply Portuguese” botanical garden in Lisbon, has had a distinguished history since it was established over two centuries ago, in the wake of the great earthquake of 1755

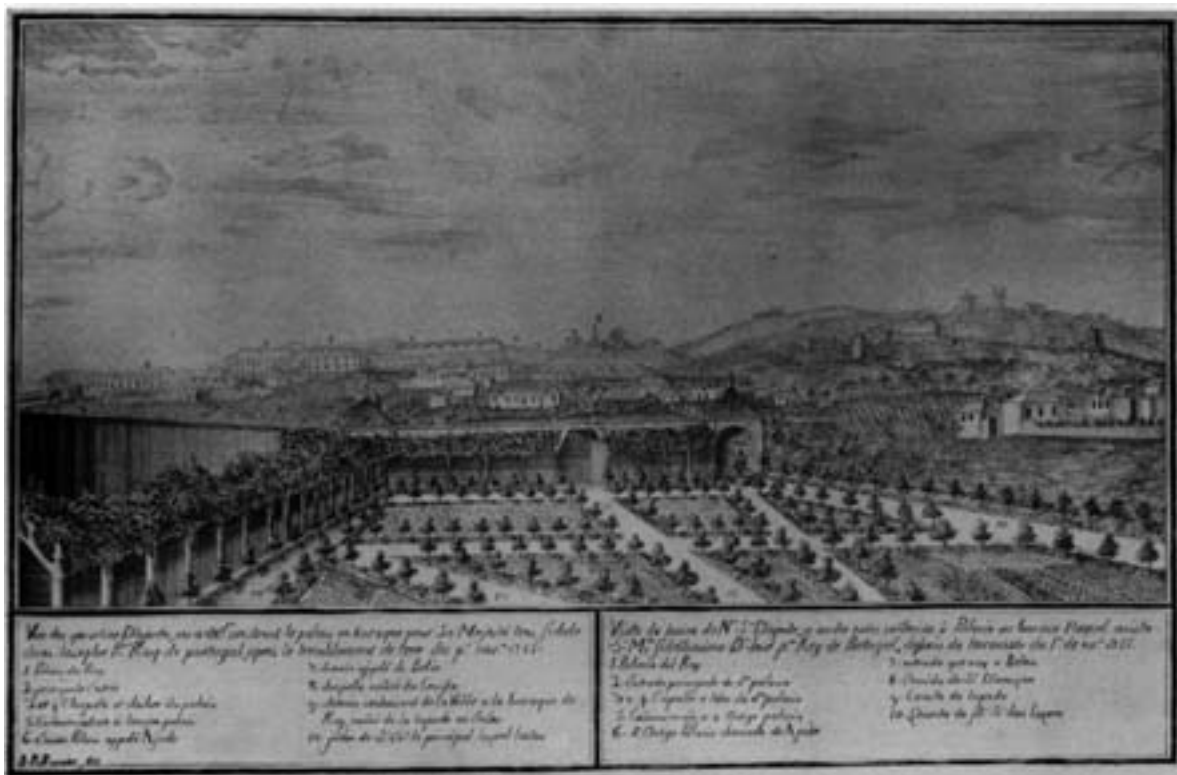
At 9:40 on the morning of Saturday, November 1, 1755, as the faithful attended church to commemorate All Saints’s Day, a violent earthquake swept Portugal’s picturesque capital, Lisbon. In six terrifying minutes thirty thousand people were either killed instantly or fatally injured. Simultaneously, a strong tidal wave pushed the Tagus River (Rio Tejo) over its banks, inundating the lower quarter of the city. Lisbon was almost completely destroyed, and what remained was consumed by an enormous conflagration that burned for three days. The gorgeous palaces full of paintings and art objects acquired by merchants and nobles from the Orient and Europe were reduced to smoldering embers.

The earthquake was to be the most significant event in Portuguese history since Vasco da Gama’s discovery of the maritime route to India in 1500. The disaster was used by the formidable and controversial prime minister, Sebastião José de Carvalho e Mello—

Marquês de Pombal (1699–1782)—as just the excuse he needed to impose his authority and to remold the country to the new economic and cultural concepts he had observed during his travels as ambassador to London and Vienna. Pombal personally directed the rebuilding with an iron hand, and a reborn Lisbon arose from the ashes. Long, straight avenues, flanked by new buildings all in the same style, replaced narrow Mediæval alleys.

As a part of Lisbon’s renewal, the omnipotent Pombal charged Domingos (Domenico) Vandelli (1735–1816), professor of botany in the University of Coimbra, with building a garden. The location was to be a choice piece of property just purchased by King José I (1714–1777), close to the new wooden palace in Ajuda, a suburb of Lisbon, where the royal family had camped out before a more appropriate home could be constructed. In 1768, Vandelli called on the Italian landscape architect, Julio Mattiazzi, from the famed botanical garden at Padua, to draw up plans for what was to become the first botanical garden in Portugal. But its placement, near the palace, suggests that behind the scientific aim was a royal wish that the garden serve for Court recreation and the education of the Crown Prince.

Monument to the Marquês de Pombal in the center of Lisbon. The Marquês, escorting a lion, surveys the city he rebuilt after the disastrous earthquake of 1755. A. Bermudas and C. Couto, architects, and F. Santos, sculptor, designed the monument, which was completed in 1934.



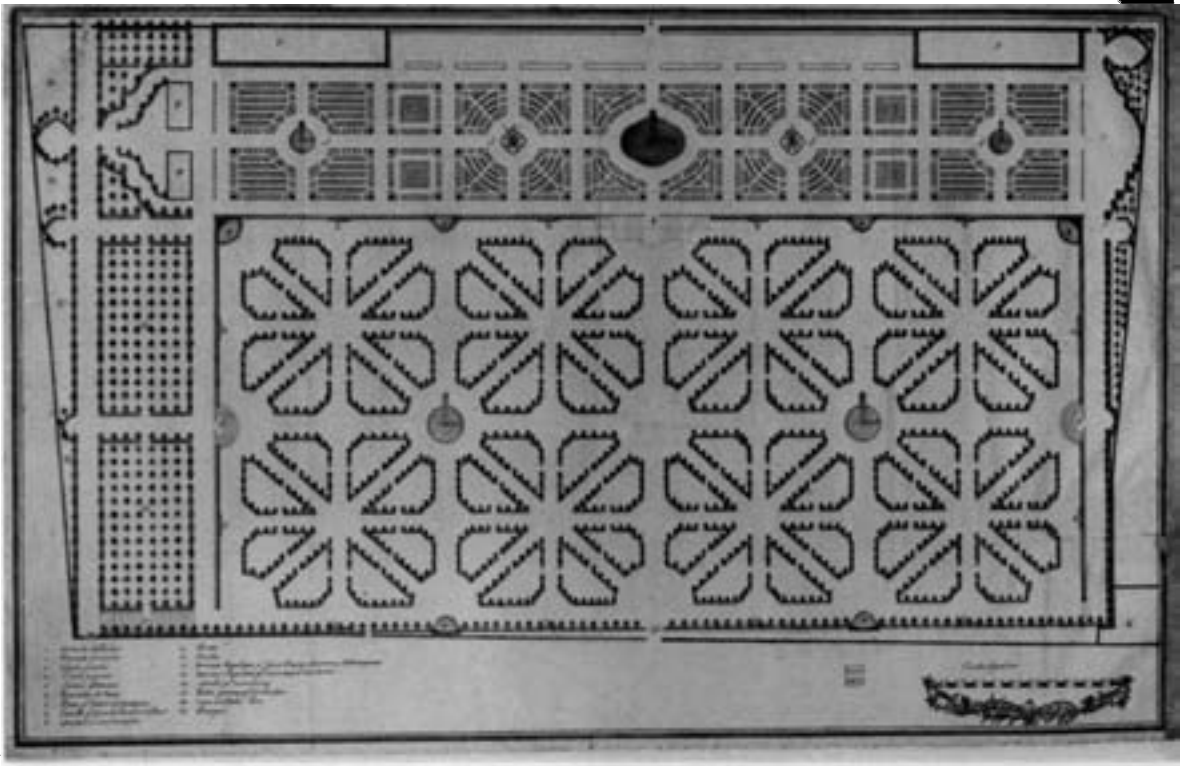
General view of the Ajuda quarter of Lisbon, showing the wooden palace where King José I resided after the earthquake of November 1, 1755. On the bottom of the hill is "Quinta de Don Lazaro," one of the numerous gardens in Lisbon. From the Lisbon City Museum.

The great European botanical gardens of Pisa, Padua, Leipzig, and Leiden had been established more than two centuries earlier. Portugal's late entry was due, not to any lack of interest in plants, native or exotic, among its people, but to the different way in which they appreciated plants: instead of the traditional gardens of France or Italy, the Portuguese preferred *tapadas*, or "enclosures." These were relatively large, green areas, encircled by walls, situated near towns and used for recreation by the aristocracy. They existed mostly in the southern half of Portugal, where the climate is hotter and drier than it is in the northern half. Here it was possible to preserve native woodlands and to maintain

exotic species in small gardens with irrigation. The *tapadas* were protected by walls from increasing pressure for agricultural land and firewood and became oases in a degraded landscape. In Lisbon, two of them, Tapada das Necessidades and Tapada da Ajuda, can still be visited today. As a result of urban sprawl, however, they are no longer on the outskirts but almost at the center of the city.

Mattiuzzi's Design for Ajuda

Mattiuzzi planned the Garden of Ajuda in the Italianate style. Situated on a hillside open to the south, it is designed in two levels facing the Tagus River in such a way that both the view and the placement make an æsthetic



The original plan of the Royal Garden of Ajuda. From the Archives of the Ministry of Public Works, Lisbon.

statement. In the two landings, the collections were planted in plots symmetrically sited in a stately design. Two buildings were built, one, in the upper part, for the botanical school and another, in the lower end, as a kind of natural history museum.

Two wooden glasshouses, or orangeries, were constructed in the upper landing to accommodate a broad collection of living plants. They were replaced during the Nineteenth Century by four elegant cast-iron greenhouses in the Romantic style and are still the most important motif in the upper landing. One of the greenhouses, half embedded in the hillside to reduce heat loss and to increase the efficiency of the heating system, retains the royal insignia engraved on the glass of the entrance door. Inside the glass-

houses are several small, beautiful marble pools used to increase humidity and to serve as reservoirs of water for irrigation.

Aquatic plants in the open were not ignored and are found in six ponds formed from cut stone. One of them, the only example of late Portuguese baroque style in the Garden, is the architecture center of the lower landing. It has several water sprays and is decorated with statues of aquatic animals—sea-horses, dolphins, snakes, and ducks—in a fantastic mix as counterpoint to the curvilinear form of the pond.

The total design effect of the Garden is one of simplicity, in marked contrast to the splendor of the great French or Italian gardens. The glory of the Garden of Ajuda is achieved by the magnificent view facing south. The deco-

rative elements are beautifully set off by the bright Iberian sun and the cloudless sky. Stairs, balustrades, and ponds in white cut stone, much in the Portuguese style, emerge from the green surfaces of the formal boxwood hedges. Different flowers with bright colors are displayed, so that one species is in

bloom the year round contrast with dark shadows, a pleasant refuge from the hot summer sunlight.

Neoclassic elements predominate as in all the rebuilt parts of Lisbon and, despite the Italianate influence, the Garden is deeply Portuguese. There is no main axis with large



An old drawing of the Garden of Ajuda, by Barbosa Lima. From Archivo Pittoresto, Volume 5 (1962).

open lanes, nor is the Garden appended to the front of an important building in the French style. Rather, it closes in on itself, with the exception of the broad opening to the river. The entrance, very important in some gardens, is merely a small gate on the east side. The wall enclosing the Garden maintains the tradition of the *tapada*.

Plant collecting was a much appreciated hobby of an aristocracy that took great pride in plant rarities on their private grounds. The new garden in Ajuda would not be so important had it become just one more place to display specimens. But the manner of presentation, following the new Linnæan system of plant classification, was an important im-

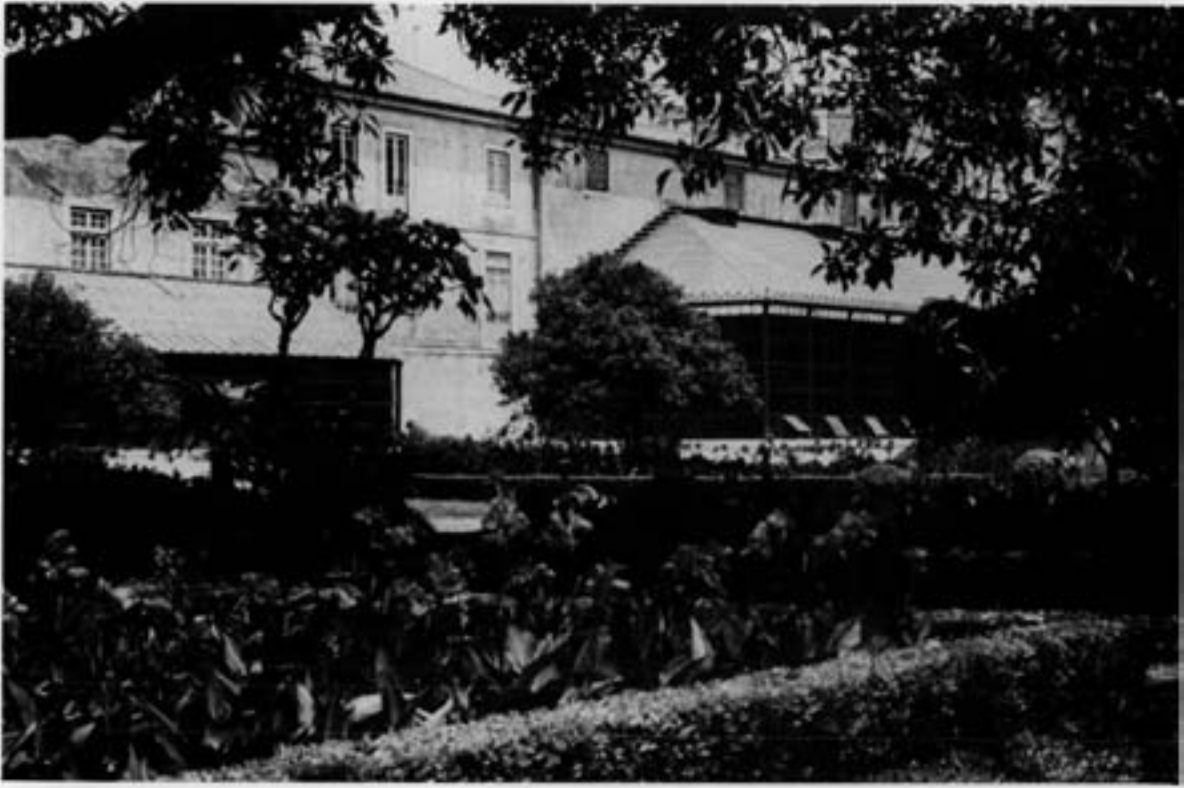
provement that distinguished it from the status quo. The Garden had areas specifically set aside for systematic arrangements based on the new taxonomy, and a small area for trials. It was also the first place in Portugal where new plants were presented, not as curiosities, but as possible new agricultural or medicinal crops.

A Magnet for Plants and for People

The Garden of Ajuda was like a magnet for plants and people. It attracted new plant collections from overseas and botanists and horticulturists, who came from throughout Europe to study firsthand specimens from Africa, Asia, and the New World. The Garden



A view of the Garden from the top of the main staircase. The formal boxwood hedges contain beds of roses, euphorbia, and conium. In the background, a suspension bridge over the Tagus River connects north and south Portugal. Photograph by Antonio de Almuda Monteiro.



A small greenhouse appended to a structure known as the "Old Palace." Dating to the Nineteenth Century, it now contains the orchid and bromeliad collection. Photograph by Antonio de Almuda Monteiro.

became a center of attraction in Portugal. In 1836, for example, one thousand ninety individuals signed the visitor's register!

In 1798, a German voyager by the name of Johann Heinrich Friedrich Link (1767–1851), coauthor of *Flore Portugaise*, wrote:

This garden is charmingly situated. It offers a nice view over the river and the sea like the garden in Paris which dominates part of the town. It is not very large and the orangeries are small, but it has ponds and aquatic plants. It is kept very tidy and is very interesting for botanists to preserve their nice discoveries because everything received is planted and is left for nature to look after. It happens that many plants from Brazil and other parts are sent to the garden. Now I can find species growing here to be sent back to Brazil for commercial planting.

In 1868, David Moore (1807–1879), Superintendent, or Curator, of Glasnevin, the Royal Society of Dublin's botanic garden, wrote:

Part of the garden has the plants classified according to the Linnæan system but in the other part we had the pleasure of seeing written information saying that the "Ordines Naturales Systematis Lindley" were being followed. The best plants were those growing in the open air and among them specially *Araucaria excelsa*, *Ficus elastica*, *Lagerstræmia indica*, *Pittosporum tobira* and *Pittosporum undulatum*, about 20 feet high and perfectly covered with seeds.

Unfortunately, the Portuguese government did not often recognize the scientific



A pond with waterlilies and Nolia longifolia in bloom. Photograph by Antonio de Almuda Monteiro.

value of the Garden, and support was marginal during most of the Nineteenth Century. Some of its directors—Félix da Silva de Avelar Brotero (1744–1828), Friedrich Martin Josef Welwitsch (1806–1872), and João de Andrade Corvo (1824–1890)—often complained that they lacked the money necessary to maintain the Garden in good condition.

Brotero, the most distinguished Portuguese botanist of the Eighteenth and Nineteenth Centuries, travelled extensively in France. He received a doctorate from Reims University. His important botanical writings include the *General Catalogue of All Plants in the Royal Botanical Garden of Ajuda*. Welwitsch was an Austrian botanist who worked in Ajuda for several years. Later he travelled along the southern coast of Africa on

expeditions sponsored by the Portuguese government, collecting an enormous number of insects and plants to initiate the study of the flora of that region.

The Garden's Setting

The Garden, 4.4 hectares in area, is situated in the heart of Ajuda, one of the traditional residential quarters, just above the Palace of Belém, which is now the official residence of the President of the Republic. Close to the Garden is the imposing but unfinished Palace of Ajuda, in Classical style. From the upper landing of the Garden the visitor has a beautiful vista framed by trees on two sides and by red roofs below. Far to the left the magnificent suspension bridge (originally the Salazar Bridge, renamed the Twenty-fifth of April Bridge after the 1974 revolution) can be seen connecting the two banks of the Tagus. Following the river towards the seaside resorts of Estoril and Cascais is the Belém Tower. This old fortress, built during the Sixteenth Century in Manuelino style, stands on the riverbank as a symbol of the Portuguese discoveries. Not far from the tower is the enormous Monastery of Jeronimos. Its Manuelino exterior is made of white stone, cut like lace and decorated with naval motifs to celebrate the discovery of the maritime route to India. The round dome of the Memorial Church can be seen from the Garden. It was built by the Marquês of Pombal to remind the populace of the unsuccessful assassination attempt of the King, an event exploited by Pombal to consolidate his power. A garden, surrounded by these stately monuments, cannot help but impress the visitor with the past glories of Portugal.

The Garden of Ajuda Today

During the Vandelli era, the Garden of Ajuda owned a large collection of plants, reportedly about five thousand species. Most came from incursions in Africa and Brazil, as a part of

national priority to bring new species to Portugal. They were kept not only for curiosity's sake, but for possible use as food and medicinal plants. The Portuguese and Spanish had key roles in the introduction of new crops to Europe, including maize, the tomato, the capsicum pepper, the orange, and the pineapple. Today, some five hundred taxa are represented in the Garden.

Among the noteworthy trees that survived a violent cyclone in 1943 are the enormous *Dracæna draco*, *Schotia afra*, *Ficus macrophylla*, *Ficus benjamina*, *Nolia longifolia* (which is lovely in bloom), and the strange *Sophora japonica* with its natural bending branches. *Strelitzia reginæ* and *Asparagus plumosa* perform splendidly during winter without heating because of the mild maritime climate.

Since 1918, the Garden of Ajuda has been associated with the Instituto Superior de Agronomia (College of Agriculture), one of

the colleges of the Technical University of Lisbon. Its botanical importance decreased after new gardens connected with the Escola Politécnica (Polytechnic School) of Lisbon were created.

Though no longer the famous botanical center it was a century and a half ago, the Garden nonetheless remains a monument, a calm and pleasant setting that the traveller is obliged to visit. It has a seed exchange and belongs to the International Association of Botanical Gardens, European-Mediterranean Division. Research and education in ornamental horticulture and botany continue.

Botanists, horticulturists, and gardeners from all countries are cordially invited to visit.

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