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ROBERTO BURLE MARX AND THE BOTANICAL GARDEN

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1 ABSTRACT

Rio de Janeiro's colonial and imperial gardens played an influential role on the work of modernist Latin American landscape architect Roberto Burle Marx (1909-1994). Burle Marx mythologizes the influence of his visit as a young man to the Berlin-Dahlem Botanical Garden's greenhouses, which displayed the tropical plants of his native Brazil in the ecological tableaux developed by the botanist Adolf Engler (1844-1930). Engler had collaborated with Carl Friedrich Philipp von Martius (1794-1868) on his monumental work Flora Brasiliensis, and developed the field of phytogeography, emphasizing the importance of geology on biodiversity. Burle Marx, credited as a pioneer in the use of native Brazilian flora in his designs, often cites his rejection of a significant preference for the use of imported European species in Brazilian parks. Yet many of the historic parks of his hometown of Rio de Janeiro incorporated native tropical flora, including most importantly the nineteenth century projects by Auguste François Marie Glaziou (1828-1906). Influenced by the work of von Martius and Engler, Burle Marx often worked with botanists to catalog ecological plant associations at his project sites. Two of Burle Marx's lesser known projects from 1961 are discussed in the context of these precedents: the Jardim Botânico, São Paulo, and the Parque Zoobotânico, Brasília. From 1967 until 1971, Burle Marx insisted on the protection and conservation of the Jardim Botânico of Rio de Janeiro. Fittingly, Burle Marx's own experimental botanical garden of Brazilian flora at Sítio Santo Antônio da Bica is now a national historic and artistic monument.

1.1 Keywords

Roberto Burle Marx, Brazil, native plants, public parks, botanical gardens, ecology

2 A BRAZILIAN GARDEN FROM A BERLIN GLASSHOUSE

2.1 The Berlin-Dahlem Botanical Gardens: Myths and Lessons

At the age of nineteen, while studying music and painting in Berlin, Roberto Burle Marx (1909-1994) visited a beautiful glasshouse filled with plants from his native Brazil at the Berlin-Dahlem Botanical Gardens. He describes being astounded by the richness of this tropical flora, which included collections of plants that he had not seen in the gardens and parks of Rio de Janeiro.

"When, in 1928, I lived for two years in Germany, brought there by my father, one of my fascinations was, in the Botanical Garden of Berlin, to see the Brazilian flora growing and flourishing in the greenhouses of that institution. It was astonishing to me because of the fact that I had never seen these plants in the gardens and parks of Rio—yet they evoked so much emotion in me."

(Burle Marx, *Paisagismo Brasileiro*, 1967, p.14)

The Berlin-Dahlem gardens did indeed have a rich collection of Brazilian flora, enriched by the Brazilian specimens of Carl Friedrich Philipp von Martius (1794-1868) and developed carefully into ecological groupings by the German botanist Heinrich Gustav Adolf Engler (1844-1930), the founding director of Berlin-Dahlem. Yet Brazil had a long history of the use of native plants in its public gardens, particularly in Rio de Janeiro's nineteenth-century Imperial gardens designed by the French hydraulic engineer and botanist François-Marie Glaziou (1833-1906).

This paper attempts to dispel the myth propagated by Roberto Burle Marx of a Brazilian garden culture that excluded all native plants. There was indeed a well-established practice of the incorporation and valorization of native flora in nineteenth and early twentieth century public parks in both Rio de Janeiro and São Paulo. Yet it is also critical to expand the understanding of what Burle Marx *did* learn in Dahlem, and to highlight the importance of the lesson of the greenhouse "phytogeographies" developed by Engler and von Martius. The significant ideas of these German

botanists influenced Burle Marx's public parks throughout his career as a landscape architect.



Figure 1. *Forests along the Amazon*, Karl Friedrich Philippe von Martius (1840-1906)
Image courtesy Fundação Biblioteca Nacional, Rio de Janeiro

2.2 The Phytogeography of Brazil

Exploration into the vast interior of Brazil began only in the seventeenth century, in the era of the Portuguese *bandeirantes*, adventurers who sought gold, gemstones, and Indian slaves. And it was not until the beginning of the nineteenth century, when the Portuguese crown opened the interior to European scientific expeditions, that Brazil's floral wealth was collected and classified. Brazilian tropical plants—orchids, philodendrons, bromeliads—were brought back and cultivated in European greenhouses, structures that displayed to the public both the emergent technologies of iron and glass as well as the tropical exoticism of the New World.

One of the many expeditions was the *Missão Científica Austríaca*, led by the Austrian botanist Karl Friedrich Philippe von Martius and the zoologist Johann Baptist von Spix. Sent by the Emperor of Austria, Francisco I (whose daughter had recently married the Portuguese Príncipe Real Dom Pedro), the team arrived in Brazil in 1817 and traveled throughout the country until 1820, collecting, observing, and recording specimens of flora and fauna. *Flora Brasiliensis*, initiated in 1840 and only completed in 1902, was the expedition's monumental publication, documenting over 8000 species of native flora with thousands of lithographic prints. In addition, the work included a map dividing the country into five ecological regions, as well as over fifty plates illustrating the landscapes and plant life of various geographic regions throughout the country (Martius, 1840).

This study of phytogeography developed by both von Martius and Engler was manifest in the tableaux of the Berlin-Dahlem gardens. Burle Marx became fascinated by the work of von Martius, stating:

“How one sees a difference in this spirit, that of a von Martius, a man of humanistic culture, who, upon arriving in Brazil, fell in love with its exuberant nature, and, in a mixture of science and poetry, divided Brazil into phyto-geographic regions, distinguishing each with names of Greek divinities—the Naiads (water nymphs), the Oreads (mountain nymphs), the Hamadryads (wood nymphs). He was a man of a refined sensibility, who combined the finest ecological concepts of his time with a deeply artistic sense of perception. This may be seen in his descriptions of sunrise over the lakes of Pará or of a tropical storm in the heart of the Amazon forest.” (Burle Marx, *Projectos de Paisagismo*, 1962, p.24)

3 PUBLIC PARKS OF COLONIAL RIO DE JANEIRO

3.1 Passeio Público, Mestre Valentim, 1783

The Passeio Público, an asymmetrical public promenade in the historic center of Rio de Janeiro that still exists today, is considered the city's first public park. Executed from 1779 through 1783, the Passeio Público was the vision of Mestre Valentim da Fonseca e Silva (c. 1745-1814), a sculptor and urbanist from the interior region of Minas Gerais. Commissioned by the Viceroy of the colonial State of Brazil, Dom Luís de Vasconcelos e Sousa, and inspired by Lisbon's own Passeio Público, the enclosed park featured large shade trees, a pond with islands, and ornamental sculptural elements including bronze alligators. Located along the Bay of Guanabara to its east, the park, an irregular hexagonal form with strong geometrical axes, was bounded by the hills of São Bento to the north, Santo Antonio to the south, and Rua da Vala to the west. (Carvalho, 1999) A wide terraced promenade extended the length of the park's frontage on the Bay of Guanabara, open to the view and breeze.

Flora of the park was selected for its ability to provide broad expanses of shade in this particularly hot and sunny tropical climate—tall trees included tropical natives such as mango, tamarind, and palm trees, as well as cedars and pines. (Mariano Filho, 1943)



Figure 2. William Bell, *Jardim Botânico*, Rio de Janeiro (1882) US Navy / Public domain

3.2 Jardim Botânico da Lagoa Rodrigo de Freitas, 1808

The Jardim Botânico of Rio de Janeiro was founded in 1808 by King João VI of Portugal. It was originally intended as a garden for the local acclimatisation of spices brought from the East Indies to Brazil (“an Acclimatisation Garden meant to introduce the growing of East Indies spices to Brazil”), such as nutmeg, pepper, and cinnamon. (Rodrigues, 1908) After the transfer of the royal court of Portugal to Brazil during the Napoleonic Wars, the garden was opened to the public in 1822. A stunning 750-meter long allée of 134 Royal palms (*Roystonea regia*) are all descended from one single tree, the *palma mater*, a gift to King João VI from the Isle de Mauritius in 1809. The *palma mater* was destroyed by lightning in 1972. This tree, imported from the West Indies, is not a native Brazilian tree, but it shares the characteristics of trees in the equatorial belt. Vitória Régia (*Victoria amazonica*) water lilies are also found at the garden in the Lago Frei Leandro Pond.

Located along the perimeter of the Lagoa Rodrigo de Freitas in Rio de Janeiro, the Jardim Botânico may have been established as an “acclimatisation garden,” but it quickly became an important research institute for the study of native Brazilian flora. Many exploratory expeditions were dispatched from the Botanical Garden, a transformation of the garden’s mission begun during the directorship of João Barbosa Rodrigues between 1890 and 1892, and again from 1903 until 1909. Barbosa Rodrigues augmented the garden’s collection of live plants and addressed the necessity of conservation, particularly that of native Brazilian species. A specialist in Brazilian palms, he founded a herbarium, museum, and library at the garden, and published a monumental reference work on the palm species, entitled *Sertum*

Palmarum Brasiliensium, which is still considered a classic botanical text.

Naturalists from the botanical garden joined Cândido Rondon, a Brazilian military officer, in the early twentieth century as part of the Missão Rondon, an expedition that sought to integrate the country of Brazil through an investigative exploration of the western Amazon region. In 1922, a group of Belgian botanists led by Jean Massart arrived at the garden; the Missão Massart excursion was established, recording flora discovered on voyages throughout the states of Rio de Janeiro, São Paulo, Minas Gerais, Bahia, and Amazônia in the reference work *Une mission biologique belge au Brésil 1922-1923*. Over 1500 photographs were included with this report. The Jardim Botânico continues to be well-known globally as an important research institute, particularly for the identification and conservation of neotropical flora. Yet its beautiful gardens are also a popular leisure destination for locals and tourists alike. (Bediaga, 2007)

4 PUBLIC PARKS OF IMPERIAL RIO DE JANEIRO

4.1 Glaziou’s Passeio Público and the Imperial Gardens

Auguste François-Marie Glaziou came to Rio de Janeiro in 1858 after having worked in Paris with Adolphe Alphand, the designer of Parc des Buttes-Chamont and Parc Monceau. In 1860, Glaziou was commissioned to renovate Mestre Valentim’s Passeio Público; he transformed its formal design with the romantic sensibility of an English garden, with sinuous planting beds and curving paths. “This plan represents a garden known as ‘English’ or ‘landscape,’ of the style adopted by the most forward-looking civilizations,

for its natural and gracious singularity...enlarging the horizon to its very limits." (Laemmert, 1862)

Glaziou was appointed the first Director of Imperial Gardens in 1869, and completed the designs of several plazas and streetscapes using the local tropical flora that he himself had collected on numerous expeditions. The beautification program of the Avenida do Mangue and the Largo do Machado from 1869 through 1875 included the planting of fig and palm species. Many other urban streetscapes and plazas were redesigned under his direction. (Martins, 2011)

In 1869, Glaziou began the renovation of the imperial gardens of the Palácio de São Cristóvão, the Quinta da Boa Vista. The palace had been the residence of Dom João VI, Dom Pedro I, and Dom Pedro II. Glaziou created a romantic landscape around the palace with a strong central allée of sapucaias, a native Brazilian tree. The allée bisected the grounds into two sinuous gardens, with lakes and grottos.

In 1874, Glaziou began the transformation of the Campo de Santana, a former marshland, creating a public park called Parque do Aclamação. The construction of the park, which was overseen by Glaziou himself, was completed in 1880 and inaugurated by the emperor Dom Pedro II. The form of this large park was modeled on the great parks of Paris: Parc Monceau, Parc des Buttes-Chaumont, and the Bois de Boulogne. Sinuous lines guided the design, and again, "natural" elements were constructed within the park: large rocks, tunnels, grottos, lakes, and waterfalls. Both native and European species were used in the planting palette. (Dourado, 2011)

4.2 Glaziou in the Highlands of Brazil

In 1883, the mystical Italian priest Dom Bosco spoke of a dream of a promised land in the interior of Brazil, between the fifteenth and twentieth latitudes, where "milk and honey will flow and there will be an unimaginable wealth." In 1892, an expedition to the central highlands of Brazil was established by the *Comissão de Estudos do Planalto Central do Brasil*. Led by the Belgian astronomer Dr. Louis Cruls, the director of the National Observatory, the team's goal was to mark an area for the future capital city, the "Distrito Federal," or Federal District. Glaziou joined the expedition team as the field botanist. This mission, nicknamed "Missão Cruls," predated the competition for the city of Brasília by over fifty years, and until the commencement of the construction of the new capital in 1956, a dashed rectangle was indicated on all national maps—the "retângulo Cruls." In 1894, through written correspondence with Dr. Cruls, Glaziou suggested the creation of an artificial lake to ease the dryness of the place. This was indeed realized years later during the construction of Brasília as Lago Paranoá. (Glaziou, 1894)

Almost seventy-five years later, Roberto Burle Marx would similarly arrange "coletas" into the Amazon and other regions of Brazil, his own version of the "missão," in search of plants for both his garden designs and his own collection of live plants. Two of Burle Marx's unbuilt public projects, both from 1961, for a botanical garden in São Paulo and a zoobotanical garden in Brasília, exemplify his attempts to merge the notions of Engler's ecological plant associations, Glaziou's use of native plants, and the provision of a cultural education through the design of the public landscape.



Figure 3. Auguste Glaziou, Quinta da Boa Vista, Rio de Janeiro (1869).
Image Courtesy: Arquivo Geral da Cidade do Rio de Janeiro

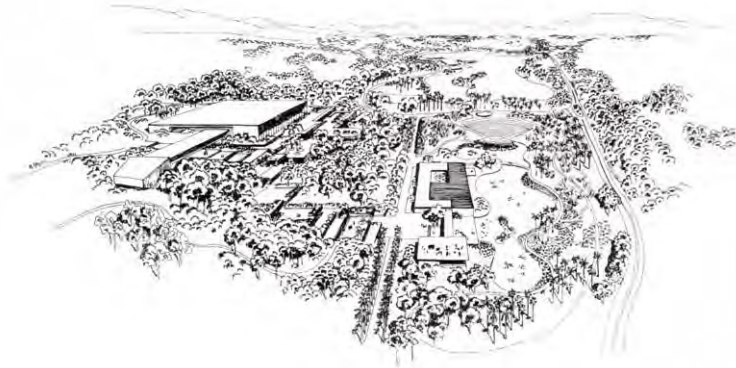


Figure 4. Roberto Burle Marx, Perspective of Jardim Botânico de São Paulo (1961).
Image Courtesy: Burle Marx & Cia. Ltda

5 ROBERTO BURLE MARX AND THE BOTANICAL / ZOBOTANICAL GARDEN

5.1 Roberto Burle Marx and the Jardim Botânico, São Paulo

“The characteristics of the Jardim Botânico of São Paulo are, at the same time, a scientific garden, a reserve for the conservation of flora and fauna, and a place of recreation for the people of this immense and hardworking metropolis.”

(Burle Marx, *Projectos de Paisagismo*, 1962, p.21)

Burle Marx’s unbuilt project for a transformation of the Jardim Botânico of São Paulo was begun in 1961 at the request of the director of the existing garden, Alcide Teixeira, and a group of botanists and ecologists. The Jardim Botânico of São Paulo, which still exists today within the state park known as Parque Estadual das Fontes do Ipiranga, encompasses an area of over two square miles within the city’s urban footprint. The park and botanical garden incorporate a large area of conserved Atlantic rainforest.

The project by Burle Marx was to include a botanical garden, a separate zoological garden, an astronomical observatory, an experimental animal farm, and several other programmatic elements, organized by a series of lakes created through the damming of the Pirarungáua Creek. Burle Marx’s new programming emphasized the three elements of his vision of an ideal botanical garden: the public areas and collections, consisting of gardens, playgrounds, and picnic areas; the ecological gardens, representing the flora of São Paulo State; and an area for the Botanical Institute, with greenhouses and collections for scientific work. Internal roads were pushed to the perimeter of the park, with “educational” pedestrian pathways and a

small train on a looped path creating public connections within the Jardim Botânico and the larger Parque Estadual. (Bardi, 1964)

5.2 Roberto Burle Marx and the Parque Zoobotânico, Brasília

“...With the zoological garden, the basic idea is, unlike that which we see in many museums, to create scenes not of dead animals and wax plants, but of live animals, among live plants.”

(Burle Marx, *Projectos de Paisagismo*, 1962, p.24)

In 1961, immediately after the end of the Kubitschek regime, Burle Marx was invited by Dr. João Moojen de Oliveira, director of the Zoobotanical Foundation of Brasília, to design a zoobotanical park for the new capital city at a site crossed by the Riacho Fundo stream. (Bardi, 1964) The Parque Zoobotânico of Brasília, although never realized, remains one of Burle Marx’s most important proposals for a public garden.

The Parque Zoobotânico of Brasília is unique in many ways; first, in its development by Burle Marx as an intentional series of *tableaux vivants* of both flora and fauna. It was imagined as both a botanical and zoological garden, presenting living “paintings” of plants and animals within their proper ecological and zoo-geographic habitats. Like von Martius’ “phytogeographies,” Burle Marx was compelled by the interdependency of plant and animal life and in the belief that this should be understood in the context of a natural environment. *“I want to insist that nature is a complete symphony, in which the elements are all intimately related—size, form, color, perfume, movement, etc. Within this understanding, the plant or animal is no longer only an isolated entity, something to be collected. It is much more: nature is an organization endowed*

with an immense dose of spontaneous activity, possessing its own 'modus vivendi' with the world around it."

(Burle Marx, *Projectos de Paisagismo*, 1962, p.23)

The plan of the Parque Zoobotânico is separated into two parts: one is the structured Zoarium, with the animal exhibits along with the educational, research, and administrative aspects of the park. The second is a much larger area containing the Ecological Zones, cut diagonally by a stream, the Riacho Fundo, and dammed to fill various small lakes. Sixteen ecological regions of Brazil are represented here, each with their particular flora and fauna, as well as an area devoted to a representation of the Amazon forest. In addition, there are areas representative of the equatorial zones of North America, Europe, Africa, Asia, and Australia. Every continent within the tropical belt, therefore, is present. Because of its vast size, a small train again was envisioned, one that would encircle the park and convey visitors to its furthest regions. This train, in essence, takes the visitor on a compressed temporal voyage around the world.

5.3 Roberto Burle Marx and the Federal Council of Culture

With the military coup of 1964, ambitious projects such as the Jardim Botânico and the Parque Zoobotânico disappeared. With Burle Marx's appointment to the Conselho Federal de Cultura in 1966, the military dictatorship provided him with a highly effective new forum for the continuation of his cultural project—this one constructed through rhetoric and words. Burle Marx's consular statements of this period, often arguing for the protection of Brazilian landscapes from development and neglect, were perhaps as important and influential in the construction of Brazilian culture as his earlier public park projects.

"And today, when I embark on excursions in search of botanical material that I might use in the creation of my gardens, I note with sorrow the discouraging fact that no matter where one goes, destruction [of nature] is being felt. It is a misfortune that seems incurable, a misfortune that one accepts melancholically, as if there were no possibility of changing this. If we continue to accept that which we see happening, soon little will remain of this Brazilian flora that is considered to be one of the richest in the world."

(Burle Marx, *Paisagismo Brasileiro*, 1967, p.16)

Burle Marx's position and ambition as counselor was clearly stated: to prevent the deforestation, personally observed over the course of his career, which had led to the extinction of hardwood species and an increase in erosion and mudslides. He notes the observable change in the climate—the increase in torrential rains—that deforestation seems to have provoked. For Burle Marx, the definition of national culture needed to include the Brazilian forest and its diversity of flora. And that "culture" needed to be understood as part of the Brazilian national heritage, deserving of both definition and protection. (Burle Marx, *Sugestões para Preservação dos Parques Nacionais*, 1967; Burle Marx, *Defesa das Reservas Naturais*, 1969) In several of Burle Marx's speeches to the Council's plenary sessions, he insists on the immediate protection and preservation of the Jardim Botânico in Rio de Janeiro as a cultural heritage site. (Burle Marx, *Jardim Botânico*, 1968; Burle Marx, *Jardim Botânico e Hôrto Florestal*, 1969) The notion of cultural preservation had been addressed by the Ministry of Education through the establishment of the *Livros do Tombo*—the registration of cultural treasures, usually buildings, into the record of national patrimony. But this was mainly focused on the built environment—the protection of buildings. Burle Marx argued strongly for a shift to create a meaningful protective status for landscapes as well, inclusive of historic, contemporary, and natural landscapes. He saw all three of these landscape types as vulnerable to neglect, development, and devastation. (Burle Marx, *Parques, Jardins, e Praças Públicas*, 1968)

5.4 Roberto Burle Marx and the Sítio Santo Antônio da Bica

Appropriately, one of Burle Marx's many legacies is his personal continuation of the tradition of ecological study and cultural preservation, perhaps equally inspired by Karl Friedrich Philippe von Martius' *Flora Brasiliensis*, Dom João VI's Jardim Botânico, and Adolf Engler's Berlin-Dahlem Botanical Gardens. In addition, he developed a pedagogical approach to public park design that would allow every citizen to gain a greater cultural understanding of Brazil's own ecological tableaux, much as he was inspired by his own visit to the Berlin-Dahlem Botanical Gardens as a youth. In 1949, Burle Marx purchased the former plantation Sítio Santo Antônio da Bica in Barra de Guaratiba, a village west of Rio de Janeiro. This 150-acre site consists of a collection of over 3500 species of live plants, many of which Roberto Burle Marx collected and even discovered himself during his *viagens de coleta*, his travels throughout the various

geographic regions of Brazil. In 1985, the site was donated to the Brazilian government and renamed Sítio Roberto Burle Marx, and it is fully protected by the *Instituto do Patrimônio Histórico e Artístico Nacional*.

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NOTE: All translations from the Portuguese are by the author.

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