

Public Garden of São Manuel: a comparative study of the arboreal species from the project by Reynaldo Dierberger (1928) and nowadays (2022)

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ABSTRACT

The Public Garden of São Manuel was remodeled in 1928 by the Paulista landscaper Reynaldo Dierberger (1899-1977) and executed by the firm Dierberger & Cia, founded in 1893 in the city of São Paulo by the family' patriarch, João Dierberger. This firm was, until the 1940s, one of the most important ones in the production and commercialization of plants, projects, and execution of gardens. The project elaborated for São Manuel has particular importance for being one of the rare gardens executed by the firm Dierberger, still preserved in its structural aspects. The garden is also a testimony of São Manuel's history since its birth. Furthermore, there is a blueprint of the original project, with handwritten notes by the author about the plant species to be used in this garden. So far, this is the only author's project found in São Paulo's state, among hundreds of projects, where there is a specification of the vegetation. In this context, the present study aimed to identify and locate the remaining trees and palms of the 1928 project that still exist today. The research used the remodeling project's blueprint, historical iconography, dissertations, articles, and the georeferenced botanical survey (February 2022). The results show that most of the trees and palm are no longer present or have been replaced by other species and that the upper part of the garden is the one that still preserves part of the vegetal composition.

KEYWORDS: Public Garden of São Manuel. Reynaldo Dierberger. Vegetal repertoire.

1 INTRODUCTION

The process of occupation of the coast towards São Paulo's inland was intensified starting in the middle of the 19th century and was favored, fundamentally, by two elements: the coffee, Brazil's main export product from this period on, and the railroads, which made possible not only the transportation of grains but also the creation of a network of cities. The French geographer, Pierre Deffontaines, who pioneered the study of this cities network from the first Jesuit "catechization villages" registered in 1550, to the cities created by companies in the beginning of the 20th century, explains a particular type that was characteristic of the central part of São Paulo state: the religious patrimonies.

The religious patrimony was a portion of rural land, non-productive and free of buildings, granted by private individuals (one or more persons) to the Catholic Church to create a village (DEFFONTAINES, 1938)¹. This donation was made in honor of a saint or a grace obtained. Given the scarcity of instruments for its delimitation, the donated area was usually close to a watercourse and more precisely between two watercourses "in fork shape" (GHIRARDELLO, 2010), thus ensuring more precise natural limits. Therefore, the patrimony's name was usually associated with the graced saint, followed by the main watercourse. This was the case, for example, of "São Manoel do Paraíso" - São Manoel, the saint, and "Paraíso", the river (SILVA, 2021).

The future urban centers originated from religious patrimony presented some similarities: the land reserved for the chapel and its square was usually at the highest level of the land, surrounded by lots; the initial layout was in regular grid of approximately 88x88m; and around the chapel were usually settling the buildings related to administrative activities (City Hall, Jail), school, commercial and residential. The railroad, which generally would be settled in lower elevation, on flatter land and near the watercourse, would compose the axis, along with the square for the future church, to receive the first "improvements and changes"; terms designated, at the time, to refer to the paving, insertion of electric lighting, afforestation and the transformation of the old square into a garden (GHIRARDELLO, 2010; ENOKIBARA, 2016; SILVA, 2021; RETTO JR et al., 2012).

¹ According to Pierre Monbeig (1984), the article by Deffontaines (1944), entitled "Como se constituiu no Brasil a rede das cidades" is one of the first studies to focus on the formation of these settlements. The article, originally in French, was transcribed into two volumes of the Revista Boletim Geográfico: v.2, n.14, p.141-148, May 1944 and v.2, n.15, p.299-308, June 1944, and translated by Orlando Valverde. Available on:

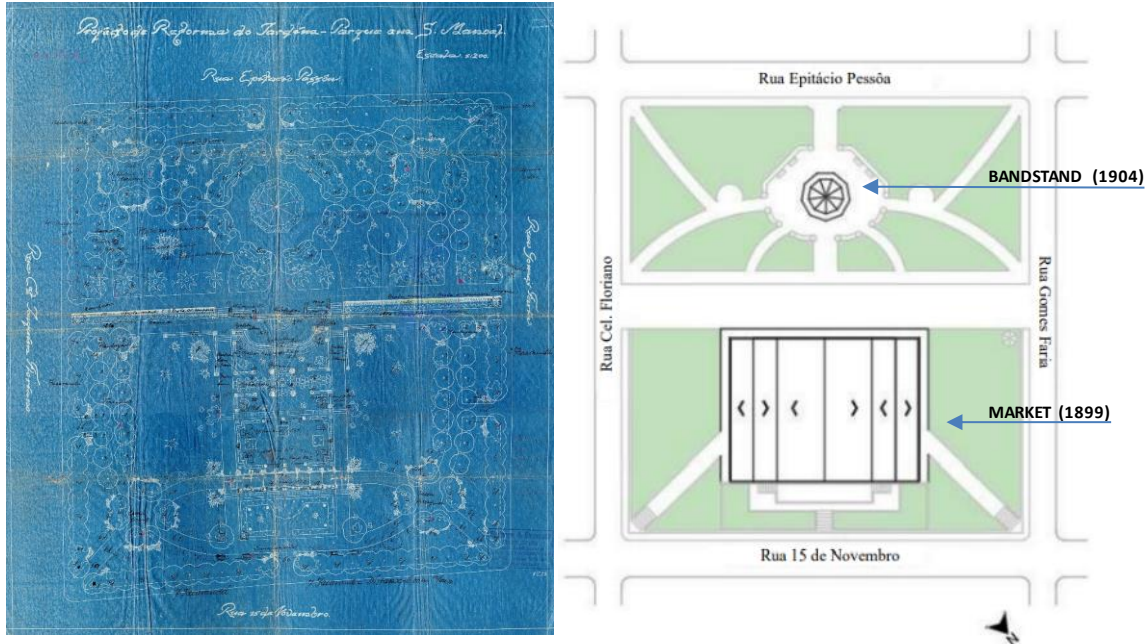
< <https://periodicos.uffs.edu.br/index.php/cidades/article/view/12534/8025>>. Accessed: June 14, 2022.

The municipality of São Manuel, founded in 1870 (SÃO MANUEL, 2022), was part of this series of São Paulo settlements that were formed still in the 19th century, originating from religious heritage and following the same characteristics: area donated to the Catholic Church and construction of the chapel in honor of São Manuel with a front square; the junction formed by the "Paraízo" river and the Santo Antonio stream; the design of the urban mesh in grid; the arrival of the railway line; and the transformation of the old open square into a garden (SILVA; ENOKIBARA, 2021).

The first improvements in this square began in 1898, when it was awarded, by public tender, to Raniero Riccio and Eugenio Acomosso for constructing a Municipal Market (1899), where it occupied about half of the block. Later, in 1902, it was requested by Atilio Cresciani the construction of a kiosk (1902) and, in 1904, the landscaping service and construction of a bandstand; this landscaping covered the other half of the block in the upper part (SILVA; ANTONINI; ENOKIBARA, 2020).

In the early twentieth century, the Municipal Market had problems related to building and hygiene and was then transferred to the City Council of São Manuel in 1905. In 1927 the building was demolished, and in 1928, the then Mayor Antônio Aranha authorized a public bidding process to construct a new Public Garden². The proposal of the firm Dierberger & Cia was accepted, and the project was signed by Reynaldo Dierberger. The proposal, called "Projecto de Reforma do Jardim-Parque em S. Manoel" (Figure 1), met the request for integration of the two areas (the old Municipal Market and the bandstand) (Figure 2), being officially inaugurated in 1929 (SILVA, 2021).

Figure 1 (left) - Blueprint of the "Projecto de Reforma do Jardim-Parque em S. Manoel" (1928); Figure 2 (right) - Reconstruction of the old Prudente de Moraes Square with the market (1899) and the bandstand (1904)



Source Figure 1 (left): Padre Manoel da Nóbrega Historical and Pedagogical Museum, 1928; Source Figure 2 (right): Silva (2021, p. 51).

² According to Silva (2021), it was not identified the exact moment of the renaming of the old São Benedito Chapel Square, in the city of São Manuel. Since 1897 it was usually known as Praça or Pátio Prudente de Moraes, but it was mentioned a few times as Rio Branco, with the first mention being in 1923. Possibly the term "Public Garden" was given before the 1928 Project, on the occasion of the gardening plan proposed at the same time as the construction of the Municipal Market (1899) and the bandstand (1904).

Reynaldo Dierberger's proposal has incorporated some elements prior to the 1928 reform, such as the axis formed by the palms, which demarcates the transition of the unevenness and was visible since the first interventions, as well as the old bandstand, as evidenced by the iconography of the time (SILVA, 2021). Out of the more than 160 projects carried out by the firm Dierberger & Cia in the State of São Paulo since its foundation (1893) until 1928, according to the firm's publication (DIERBERGER & CIA, 1928; SÁVIO, 2021; SANTOS, 2021), the Public Garden of São Manuel is one of the rare examples in the interior of São Paulo that still preserves some of its structural vegetation and constructive elements; and, mainly, it is still used by the population (SILVA, 2021).

In order to verify which species of the reform project are present nowadays, Silva and Angélico (2021)³ carried out a survey which 251 individuals were identified, among trees and palms, some of which could also be identified in the blueprint of the 1928 reform project, available in the Padre Manoel da Nóbrega Historical and Pedagogical Museum. This blueprint is one of the rare floor plans in scale 1:200, with handwritten notes made by the author Reynaldo Dierberger, with the specification of the species in the project.

2 OBJECTIVES

In order to continue the research on the plant repertoire of the Public Garden of São Manuel, the present study aimed at identifying and locating the remnants of the most representative arboreal species of the "Projecto de Reforma do Jardim-Parque em S. Manoel" (1928), proposed by the São Paulo landscaper Reynaldo Dierberger. The study covered the trees on the outer and inner perimeter, the palm alley on the transverse axis, and the conifers. These are the most representative species due to their size and form the structural landscape composition of the garden.

3 MATERIAL AND METHODS

To achieve these objectives, the following procedures were adopted:

3.1 Identification of the species inscribed by hand on the blueprint of the reform project (1928)

Two blueprints were prepared: one based on the identification of the tree species on the outer and inner perimeter (Figure 3) and another blueprint based on the author's recommendations for tree spacing (Figure 4).

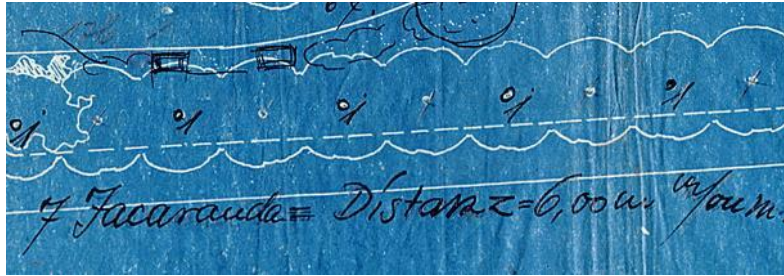
Figure 3 – Handwritten notes indicating botanical nomenclature (1928)



Source: Padre Manoel da Nóbrega Historical and Pedagogical Museum, 1928.

³ This survey is an integral part of Silva's M.Sc. thesis (2021). Appendix I, p.107-110.

Figure 4 – Handwritten notes indicating spacing between trees (1928)



Source: Padre Manoel da Nóbrega Historical and Pedagogical Museum, 1928.

3.2 Botanical survey

In February 2022, a botanical survey of trees (including conifers) and palms that considered probable remnants of the reform project proposed by Reynaldo Dierberger in 1928 was carried out. To this end, the species' position inscribed on the blueprint of the 1928 reform project, hereafter referred to as the "1928 Project", were located in the Garden.

A field spreadsheet was filled out listing each individual and specifying the family, genus, and/or botanical species to which each belongs. Subsequently, this information was tabulated in Excel 2020 spreadsheets. The botanical identification was carried out by observing its vegetative and reproductive morphological characters. When necessary, the botanical nomenclature was confirmed based on photographic guides (LORENZI, 2018), dichotomous key (POLISEL, 2018), and identification manuals, as well as virtual herbarium databases (BRAZIL FLORA GROUP, 2021; GBIF, 2022).

3.3 Geo-referencing

The geographic coordinates were obtained for the location of all individuals counted in the botanical survey. For georeferencing, an A3 clipboard was used for notes (Figure 5), a 50-meter tape measure (Figure 6), a Samsung A51 cell phone, and the GPS application Handy version 38.1 (Figure 7), free mapping software from the domain of Binary Earth (DUNK, n.d.).

Figure 5 (left) - Drawing board; Figure 6 (center) - Measuring tape; Figure 7 (right) - Screen of the georeferencing application installed on the cell phone



Source: Seawright Collection, 2022.

The geographic coordinates of the trees and palms counted in the botanical survey were tabulated in Excel and transferred to QGIS (version 3.16). The georeferenced points were then

inserted into AutoCAD 2011 software. In this program, each georeferenced point could be placed on the drawing of the garden blueprint, provided by the City Hall at the time of the surveys conducted by Silva (2021).

3.4 Comparative analysis of the species of the São Manuel Public Garden (1928 and 2022)

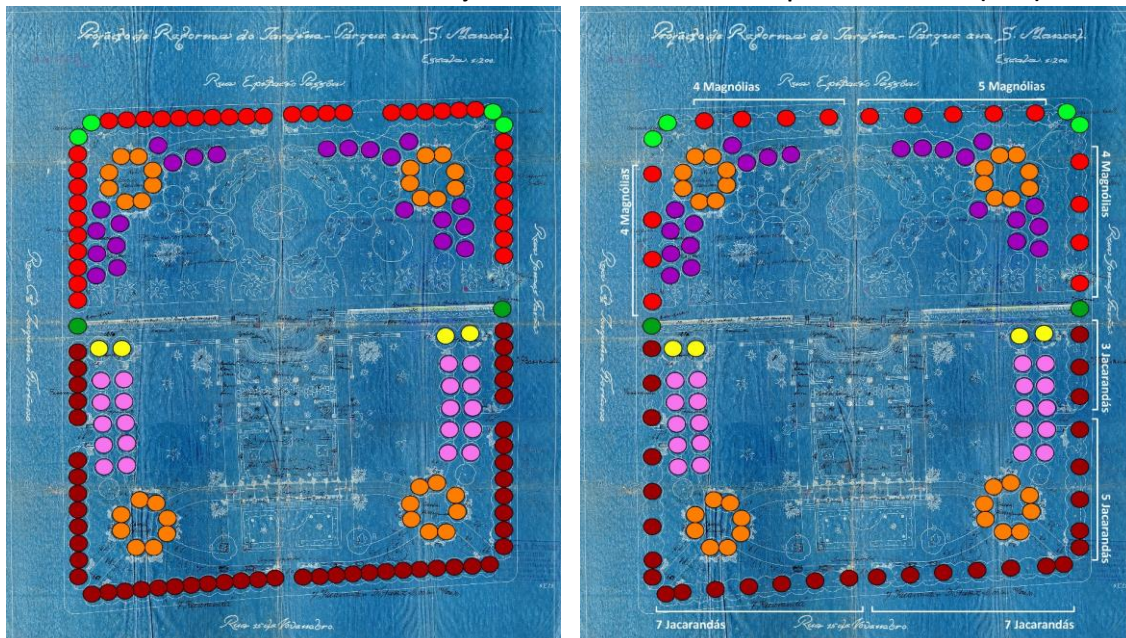
The species composition and planting recommendations noted by Dierberger in the 1928 Project were compared with the current composition of arboreal species (which includes trees, conifers, and palms⁴). This comparative analysis aimed to identify and represent in the plan the location of the remaining species in the Garden.

4 RESULTS AND DISCUSSION

4.1 The species composition and spacing recommendations in the blueprint of the "Projecto de Reforma do Jardim-Parque em S. Manoel" (1928)

The blueprint in the Figure 8 presents the demarcation of the perimeter arboreal vegetation (external and internal) identified through the author's handwritten notes (Table 1). Other relevant information was also observed, such as the handwritten notes indicating the distance that should be adopted between *Magnolia grandiflora* (red) and Jacaranda trees (brown). The author indicated eight meters of spacing between the *Magnolia grandiflora* and six meters between the jacarandas. Figure 9 shows the number of jacarandas and magnolias placed on the outside perimeter according to the spacing recommendations provided by the author.

Figure 8 (left) - Demarcation of the perimeter vegetation (external and internal) identified in the "Projecto de Reforma do Jardim-Parque em S. Manoel" (1928); Figure 9 (right) - Blueprint representation of the number of specimens of *Magnolia grandiflora* and Jacarandas that would compose the external perimeter, according to the handwritten notes observed in the "Projecto de Reforma do Jardim-Parque em S. Manoel" (1928)



Source: Padre Manoel da Nóbrega Historical and Pedagogical Museum, 1928. Intervention by the authors, 2022.

⁴ By definition, palms are not considered trees because they do not develop secondary stem growth. However, single-stem tall palms (above 10 meters) were considered as part of the arboreal stratum of the Public Garden of São Manuel on the occasion of a botanical survey.

Table 1 presents the specification of the botanical nomenclature of the trees of the 1928 Project, the quantity of trees of each species, and the quantity according to the spacing stipulated on the external perimeter. Thus, eight tree species were identified: *Acacia decurrens*; *Acacia* var. *dealbata*⁵; *Cassia ferruginea*; Flamboyant; *Holocalyx glaziovii*⁶; Jacarandá; *Magnolia grandiflora*, Tipuana⁷ and conifers.

Table 1 - Botanical species of the 1928 Project and the quantity of trees of each species according to the author's inscriptions

Marking	Botanical nomenclature (1928)	Current scientific name (2022)	Popular name	Proposed quantity (1928)	Quantity of plants according to recommendation for spacing (1928)
●	<i>Magnolia grandiflora</i>	<i>Magnolia grandiflora</i> L.	magnólia branca	38	17
●	Jacarandá	unspecified	unspecified	50	30
●	<i>Acacia dealbata</i>	<i>Acacia dealbata</i> Link	acácia prateada	4	4
●	<i>Acacia decurrens</i>	<i>Acacia dealbata</i> Link	acácia prateada	16	16
●	<i>Holocalyx glaziovii</i>	<i>Holocalyx balansae</i> Micheli	alecrim-de-Campinas	22	22
●	Tipuana	<i>Tipuana tipu</i> (Benth.) Kuntze	tipuana	20	20
●	<i>Cassia ferruginea</i>	<i>Cassia ferruginea</i> (Schrad) Schrad, ex DC.	chuva-de-ouro	16	16
●	Flamboyant	<i>Delonix regia</i> (Bojer ex Hook.) Raf!	flamboyant	4	4
●	Coníferas	unspecified	unspecified	2	2
Total				172	131

Source: Prepared by the authors, 2022.

4.2 Botanical survey and geo-referenced location of tree and palm species

Based on the botanical survey (February 2022) and the georeferenced location of the species, two situations were found: the identification of species that had the botanical nomenclature of the 1928 Project and those that, even without the botanical nomenclature, could be identified in loco due to their expressiveness in the landscape composition. The former, out of the eight tree species identified in the 1928 Project, five species are present today and are represented by two specimens of *C. ferruginea*, 11 specimens of *M. grandiflora*, 11 specimens of *H. balansae*, eight specimens of *T. tipu* and one "Flamboyant", totaling 33 trees. The latter, 16 plants were represented around the bandstand, nine of which are indicated by the number 25. Although their botanical nomenclature is not specified, they could be identified as *Ficus auriculata*, currently counting with seven specimens. The same happened in relation to the palms, that, although not specified by the author, of the 13 ones contained in the 1928 Project, there are currently five remaining, corresponding to the imperial palms (*Roystonea oleracea*).

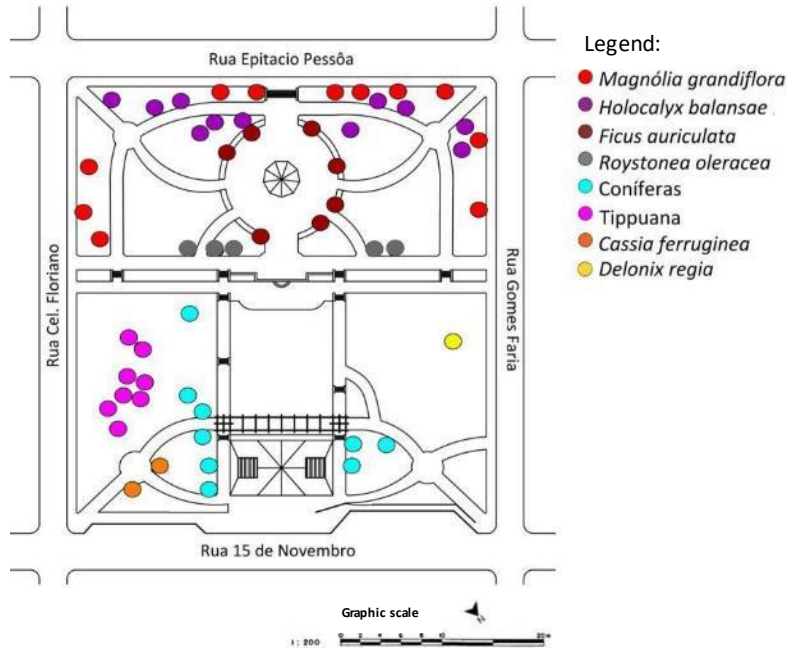
⁵ It is important to note that the botanical nomenclature of *Acacia decurrens* and *Acacia dealbata* are distinctively indicated by the author. *Acacia dealbata* is the current nomenclature for *Acacia decurrens* according to the "current taxon status" reported in the Flora e Funga do Brasil (2022).

⁶ *Holocalyx balansae* is the current botanical nomenclature for *Holocalyx glaziovii*, according to the "current taxon status" reported in the Flora e Funga do Brasil (2022).

⁷ *Tipuana tipu* is the current nomenclature for "Tipuana" according to the "current taxon status" informed on the Flora e Funga do Brasil (2022).

Some conifers stand out in the garden due to their size and were included in the survey. Therefore, one specimen of *Araucaria angustifolia*, four specimens of *Cryptomeria japonica*, one of *Cunninghamia lanceolata*, and three conifers belonging to the genus *Cupressus* were counted. Thus, we have a total of 54 remaining individuals (Figure 10, Table 2), i.e., 49 trees (including the seven *F. auriculata* and nine conifers) and five palms. Some of the arboreal individuals, as one can see on a plan prepared based on the georeferenced location of the species (Table S1), are not exactly in the places indicated in the 1928 Project. It is assumed that the position may have been altered at the time of planting or possibly planted later. A rigorous analysis of the "age" of each remnant can help to elucidate this issue.

Figure 10 - Public Garden of São Manuel with georeferenced remnants, 2022



Source: Prepared by the authors, 2022.

In addition, the remaining trees and palms, the georeferenced plan (2022) shows a building in the lower portion, facing Rua 15 de Novembro. According to Silva (2021), this building contains a tourist information office and public toilets.

Table 2 - Description of the "remnants" plants identified in the Public Garden of São Manuel (2022)

Marking	Botanical nomenclature (1928)	Current scientific name (2022)	Popular name	Quantity of plants according to recommendation for spacing (1928)	Current quantity (2022)
●	Magnolia grandiflora	<i>Magnolia grandiflora</i> L.	magnólia branca	17	11
●	Holocalyx glaziovii	<i>Holocalyx balansae</i> Micheli	alecrim-de-Campinas	22	11
●	Tipuana	<i>Tipuana tipu</i> (Benth.) Kuntze	tipuana	20	8
●	Cassia ferruginea	<i>Cassia ferruginea</i> (Schrad) Schrad, ex DC.	chuva-de-ouro	16	2
●	Not specified	<i>Araucaria angustifolia</i> (Bertol.) Kuntze, <i>Cryptomeria japonica</i> (Thunb. ex L.f.) D.Don, <i>Cunninghamia lanceolata</i> (Lamb.) Hook. <i>Cupressus</i> L.	Pinheiro-do-Paraná, cedro japonês, pinheiro chinês, ciprestes.	14	9
●	Not specified	<i>Roystonea oleracea</i> (Jacq.) O.F.Cook	palmeira imperial	13	5
●	Not specified	<i>Ficus auriculata</i> Loureiro	figueira-de-jardim	9	7
●	Flamboyant	<i>Delonix regia</i> (Bojer ex Hook.) Raf	flamboyant	4	1
Total				115	54

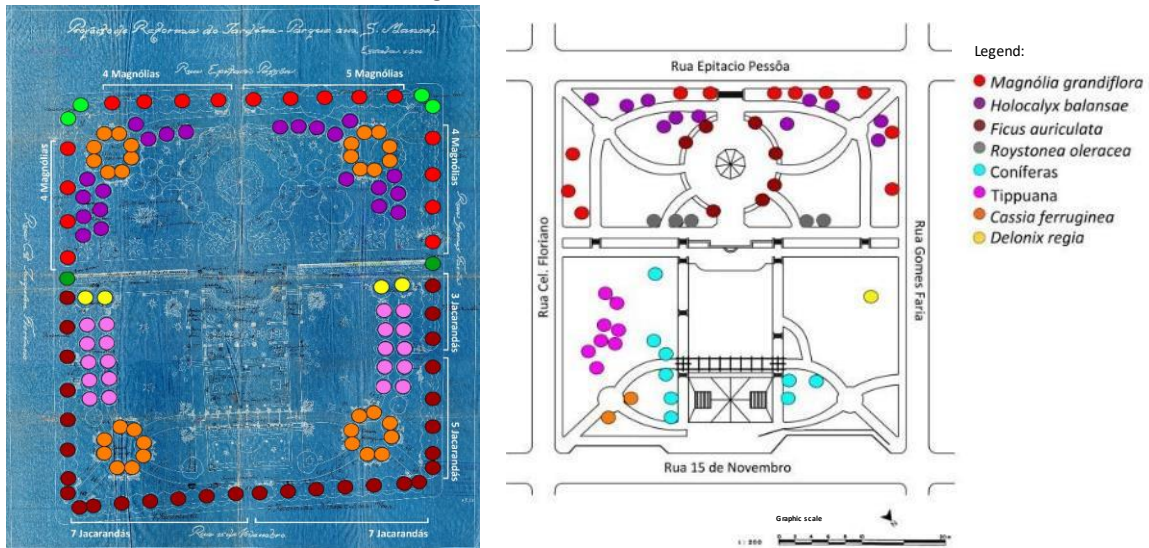
Source: Prepared by the authors, 2022.

4.3 Comparative analysis of the tree and palm species of the "Projecto de Reforma do Jardim-Parque em S. Manoel" (1928) with the Garden today (2022)

4.3.1 Trees

The Figures below indicate the species identified in the 1928 Project (Figure 11) and the remnants individuals identified in the botanical survey conducted in 2022 (Figure 12).

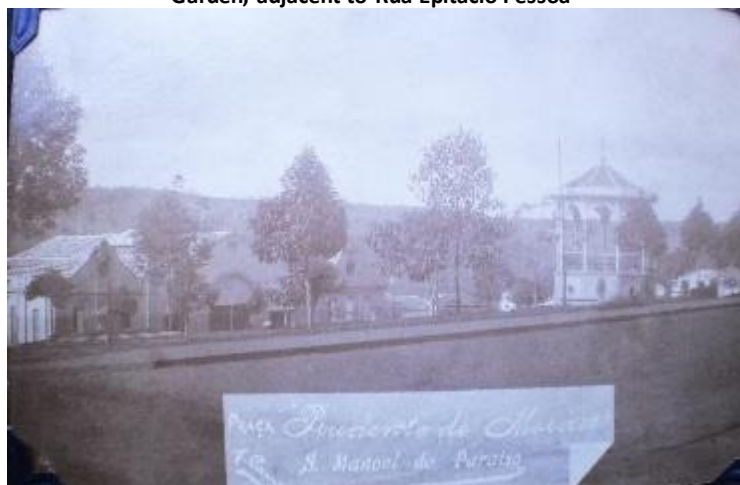
Figure 11 (left) - "Projecto de Reforma do Jardim-Parque em S. Manoel" with the indication of tree species and recommended spacing for magnolias and jacarandas, 1928; Figure 12 (right) - Public Garden of São Manuel with the georeferenced remnants, 2022



Source Figure 11: Padre Manoel da Nóbrega Historical and Pedagogical Museum, 1928. Intervention of authors, 2022; Source Figure 12: Prepared by authors, 2022.

In Figure 11 is highlighted, in red circles, an outer perimeter line composed of plants represented by a sequence of *M. grandiflora* in the upper portion. Through the iconographic analyses that date from the end of the 19th century and beginning of the 20th, it is possible to affirm that magnolias were already present, as one can observe in Figure 13. In this image, one can see the Municipal Market building (1899) in the lower portion of the Garden and the bandstand (1904) in the upper portion, in addition to details such as the pyramidal canopy of young magnolias (SILVA, 2021). Based on this evidence, it is assumed that the magnolias in the upper portion were integrated into the 1928 Project, maintaining their perimeter conformation. Thus, of the 38 magnolias represented, the author indicated 17 for planting. Currently, 11 specimens of *M. grandiflora* occupy the external perimeter of the Garden (Figure 12).

Figure 13 - Historical Iconography with young specimens of *Magnolia grandiflora* in the outer perimeter of the Garden, adjacent to Rua Epitacio Pessôa



Source: Padre Manoel da Nóbrega Historical and Pedagogical Museum, n.d.

Of the 50 "Jacarandás" identified on the outer perimeter of the 1928 Project, 30 remain indicated by the author, according to the recommendations for tree spacing (Figure 11). However,

none were identified in the botanical survey. These appear to have been replaced by tree specimens of *Ligustrum lucidum*, as noted in the survey by Silva and Angelico (2021). Recently, those trees adjacent to the Rua 15 de Novembro were suppressed due to a reform carried out in the sidewalk.

Figure 11 also shows 22 specimens of *H. glaziovii* in purple circles in the upper portion of the garden, on the inner perimeter. Currently, there are still 11 specimens of *H. balansae* (current name), some in a different position from the one indicated in the 1928 project.

Continuing on the inner perimeter, but in the lower part, there are two alleys (left and right side) composed of ten specimens each of *T. tipu* (current name), circled in pink. The tipuanas on the right side were suppressed probably at the time of the construction of the underground toilet, which was filled in 2011 (SILVA, 2021). On the left side, there are eight remaining tipuanas, but not all of them are aligned according to the 1928 Project.

In continuity to the alleys of tipuanas, in the transition from upper to lower level, there are two flamboyant trees, circled in yellow. Currently there is one remaining on the right side but displaced from the position indicated by the author.

At its four extremities of the inner perimeter, forming small circular clusters, there are 16 specimens of *A. decurrens*, circled in salmon color, in the upper portion and 16 specimens of *C. ferruginea* specimens in orange circles in the lower portion. A pair of specimens of *A. dealbata* is present at both extremities of the upper elevation of the Garden and is highlighted in Figure 11 in light green circles. Currently, in the lower left portion of the Garden, there are two specimens of *C. ferruginea* but no specimens of acacias.

It is not possible to identify the botanical nomenclature of the group of nine plants around the bandstand, but the botanical survey based on georeferencing revealed the existence of seven adult specimens of *F. auriculata* (Figure 10). In fact, the foliage and canopy of the plants around the bandstand - highlighted in the upper left corner of Figure 14 - are similar to the typical foliage of the *F. auriculata* specimens that compose the garden nowadays (Figure 15).

Figure 14 (left) - Examples of *Ficus auriculata* close to the bandstand in historical iconography, n.d.; Figure 15 (right) - Examples of *Ficus auriculata* close to the bandstand in current iconography, 2020



Source Figure 14: Padre Manoel da Nóbrega Historical and Pedagogical Museum, n.d.; Source Figure 15: Angelico Collection, 2020.

4.3.2 Conifers

There are currently adult specimens of *C. japonica* in the garden on the right side and *Cupressus* sp. on the left side, near the pergola, in the lower portion (Figure 16). A specimen of *A. angustifolia* is listed in the survey and its peculiar canopy stands out in the center of the

photograph on Figure 16. Currently, there is also a senescent specimen of *C. lanceolata* near the alley of remaining tipuanas (Figure 17). The scientific name of these conifers is not specified in the handwritten notes, but the historical iconography (Figure 18) confirms the current position of some of them. Because they are long-living species, and because of their size and the position they occupy in the garden today, these conifers are also considered remnants from the 1928 Project.

Figure 16 (left) - View of the Public Garden of São Manuel from the intersection of Rua 15 de Novembro and Rua Gomes Faria, with the conifer canopies above the canopy formed by the trees that compose the Garden, 2020; Figure 17 (right) - Senescent *Cunninghamia lanceolata* specimen inside the Garden, 2020; Figure 18 (below) - Young conifers with pyramidal canopy, n.d.



Source Figures 16 and 17: Collection of Angelico, 2020; Source Figure 18: Padre Manoel da Nóbrega Historical and Pedagogical Museum, n.d.

4.3.3 Palms

According to Silva (2021), Reynaldo Dierberger incorporated some pre-reform elements, such as the axis formed by the palm alley located in the upper portion. In the 1928 Project, 13 plants form this alley, but the botanical nomenclature was not specified. In the 2022 georeferenced survey (Figure 19) five specimens of *R. oleracea* were identified coinciding with the position of the palm trees observed in the historical iconography (Figure 20).

Figure 19 (left) - Imperial palms (*Roystonea oleracea*) in current photograph, 2020; Figure 20 (right) - Imperial palms in historical iconography, n.d.



Source Figure 19: Angelico Collection, 2020; Source Figure 20: Padre Manoel da Nóbrega Historical and Pedagogical Museum, n.d.

5 CONCLUSIONS

In the "Projecto de Reforma do Jardim-Parque em S. Manoel" (1928), prepared by Reynaldo Dierberger, there was a handwritten specification of eight arboreal species represented by 172 individuals. Currently, based on the georeferenced botanical survey (February 2022), five of the original eight species remain, represented by 33 trees. Through this survey, compared with the historical iconography, other species that were in the 1928 project, but without botanical specifications, could also be identified. These are the seven figueiras-de-jardim that surround the bandstand, the nine conifers in the lower portion, and the five imperial palms in the transversal axis, totaling 54 remnants. The typical longevity of these species, their size and position in the garden also support this observation.

The suppression of many trees and palms is quite evident when comparing the 1928 Project with the current georeferenced botanical survey (February 2022). However, the original species composition which is still represented by the magnolias in the external perimeter and, in the internal compositions, by the alecrins-de-Campinas, tipuanas, figueiras-de-jardim, chuvas-de-ouro, flamboyants, some conifers and palms which compose the garden nowadays, allow us to have an idea of what this garden was before, especially in the upper part. The analysis of the floristic composition has shown a worrying loss of relevant arboreal specimens, as well as studies previously carried out have demonstrated a disfigurement of its architectural composition over time.

It is expected that the results of this study can serve as support for the preservation and restitution of the original specimens of this important garden. It is important not only for being one of the rare remaining gardens of the firm Dierberger & Cia, but also for being a living testimony of São Manuel's city history since its birth.

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SUPPLEMENTARY MATERIAL

Table S1 - Description of the trees and palm counted in the botanical survey

	Scientific name	Geographical coordinates; latitude and longitude		Stem circumference (cm)	Estimated height (m)
1.	<i>Araucaria angustifolia</i> (Bertol.) Kuntze	22°43'49.80"	48°34'10.73"	380	15
2.	<i>Cassia ferruginea</i> (Schrad.) Schrad, ex DC.	22°43'49.68"	48°34'10.46"	175	10
3.	<i>Cassia ferruginea</i> (Schrad.) Schrad, ex DC.	22°43'49.74"	48°34'10.21"	190	10
4.	<i>Cryptomeria japonica</i> (Thunb. ex L.f.) D.Don	22°43'48.82"	48°34'11.27"	146	12
5.	<i>Cryptomeria japonica</i> (Thunb. ex L.f.) D.Don	22°43'48.87"	48°34'11.39"	150	7
6.	<i>Cryptomeria japonica</i> (Thunb. ex L.f.) D.Don	22°43'48.80"	48°34'11.73"	150	7
7.	<i>Cryptomeria japonica</i> (Thunb. ex L.f.) D.Don	22°43'49.63"	48°34'10.62"	142	7
8.	<i>Cunninghamia lanceolata</i> (Lamb.) Hook!	22°43'50.33"	48°34'11.22"	140	13
9.	<i>Cupressus</i> L.	22°43'49.34"	48°34'10.58"	200	15
10.	<i>Cupressus</i> L.	22°43'49.50"	48°34'10.58"	200	15
11.	<i>Cupressus</i> L.	22°43'49.70"	48°34'10.68"	110	12
12.	<i>Delonix regia</i> (Bojer ex Hook.) Raf!	22°43'48.98"	48°34'11.62"	110	6
13.	<i>Ficus auriculata</i> Loureiro	22°43'50.39"	48°43'12.03"	50	3.
14.	<i>Ficus auriculata</i> Loureiro	22°43'50.71"	48°43'12.18"	60	3.
15.	<i>Ficus auriculata</i> Loureiro	22°43'50.77"	48°43'12.31"	56	3.
16.	<i>Ficus auriculata</i> Loureiro	22°43'50.77"	48°43'12.71"	136	5
17.	<i>Ficus auriculata</i> Loureiro	22°43'50.38"	48°43'12.73"	70	3.
18.	<i>Ficus auriculata</i> Loureiro	22°43'50.24"	48°43'12.48"	90	3.

19	<i>Ficus auriculata</i> Loureiro	22°43'50.14"	48°43'12.30"	120	3.
20	<i>Holocalyx balansae</i> Micheli	22°43'51.54"	48°34'11.76"	192	9
21	<i>Holocalyx balansae</i> Micheli	22°43'51.23"	48°34'12.24"	180	7
22	<i>Holocalyx balansae</i> Micheli	22°43'51.26"	48°34'12.17"	105	7
23	<i>Holocalyx balansae</i> Micheli	22°43'50.53"	48°34'13.09"	170	7
24	<i>Holocalyx balansae</i> Micheli	22°43'50.38"	48°34'13.24"	141	7
25	<i>Holocalyx balansae</i> Micheli	22°43'50.51"	48°34'13.00"	110	7
26	<i>Holocalyx balansae</i> Micheli	22°43'50.03"	48°34'13.58"	120	7
27	<i>Holocalyx balansae</i> Micheli	22°43'49.97"	48°34'13.27"	120	7
28	<i>Holocalyx balansae</i> Micheli	22°43'51.20"	48°34'12.20"	120	7
29	<i>Holocalyx balansae</i> Micheli	22°43'51.10"	48°34'12.29"	110	7
30	<i>Holocalyx balansae</i> Micheli	22°43'51.00"	48°34'12.39"	120	7
31	<i>Magnolia grandiflora</i> L.	22°43'51.24"	48°34'11.12"	89	8
32	<i>Magnolia grandiflora</i> L.	22°43'51.40"	48°34'11.14"	92	8
33	<i>Magnolia grandiflora</i> L.	22°43'51.64"	48°34'11.41"	124	8
34	<i>Magnolia grandiflora</i> L.	22°43'51.26"	48°34'12.50"	110	6
35	<i>Magnolia grandiflora</i> L.	22°43'51.17"	48°34'12.77"	84	8
36	<i>Magnolia grandiflora</i> L.	22°43'50.84"	48°34'13.11"	82	6
37	<i>Magnolia grandiflora</i> L.	22°43'50.69"	48°34'13.24"	61	6
38	<i>Magnolia grandiflora</i> L.	22°43'50.49"	48°34'13.41"	83	6
39	<i>Magnolia grandiflora</i> L.	22°43'50.34"	48°34'13.71"	102	7
40	<i>Magnolia grandiflora</i> L.	22°43'49.87"	48°34'13.50"	65	5

41	<i>Magnolia grandiflora</i> L.	22°43'49.49"	48°34'13.29"	55	6
42	<i>Roystonea oleraceae</i> (Jacq.) O.F.Cook	22°43'50.49"	48°34'11.63"	170	>15
43	<i>Roystonea oleraceae</i> (Jacq.) O.F.Cook	22°43'50.47"	48°34'11.73"	180	>15
44	<i>Roystonea oleraceae</i> (Jacq.) O.F.Cook	22°43'50.34"	48°34'11.87"	185	>15
45	<i>Roystonea oleraceae</i> (Jacq.) O.F.Cook	22°43'49.84"	48°34'12.45"	125	>15
46	<i>Roystonea oleraceae</i> (Jacq.) O.F.Cook	22°43'49.70"	48°34'12.59"	180	>15
47	<i>Tipuana tipu</i> (Benth.) Kuntze	22°43'50.08"	48°34'10.30"	170	12
48	<i>Tipuana tipu</i> (Benth.) Kuntze	22°43'50.13"	48°34'10.54"	170	12
49	<i>Tipuana tipu</i> (Benth.) Kuntze	22°43'50.16"	48°34'10.59"	95	12
50	<i>Tipuana tipu</i> (Benth.) Kuntze	22°43'50.26"	48°34'10.55"	155	12
51	<i>Tipuana tipu</i> (Benth.) Kuntze	22°43'50.14"	48°34'10.54"	162	12
52	<i>Tipuana tipu</i> (Benth.) Kuntze	22°43'50.39"	48°34'10.70"	90	12
53	<i>Tipuana tipu</i> (Benth.) Kuntze	22°43'50.31"	48°34'10.70"	170	12
54	<i>Tipuana tipu</i> (Benth.) Kuntze	22°43'50.31"	48°34'10.68"	150	12

Source: Prepared by the authors, 2022.