

Multidisciplinary Integrated Methodology in the Vegetal Restoration of the *Giardino dei Cedrati* in *Villa Dora Pamphilj*, Rome

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Abstract

The recovery, restoration and management of historical green spaces require an integrated approach among different professional areas. The multidisciplinary approach provides new insights into the conservation value of restored and remnant vegetation according to the historical evolution of the garden, taking into account the prospects for proper maintaining and management. The study of vegetal restoration of the *Giardino dei Cedrati* in *Villa Doria Pamphilj* (Rome), expresses the result of harmonious integration and synergy among diverse disciplines. This important area has changed over time with an integration of forms, species of plants, features, colours, pathways, spaces of aggregation. However, over the years this space has been left to progressive abandon with the risk to lose the garden identity. The scientific project was therefore based on a detailed study of each of the components as part of an organic unification of the *Giardino dei Cedrati* and the interaction with *Villa Doria Pamphilj's* to which it belongs. Finally, alternative proposals concerning the maintenance and management were presented and compared, including i) minimum intervention, ii) partial revival of the original plan, iii) restoration and reuse of semi-underground greenhouses, iv) integration of ii) and iii) plans.

INTRODUCTION

Since 1971, *Villa Doria Pamphilj* represents the largest public park in Rome. The oldest building is *Villa Vecchia*, built when Panfilo Pamphili bought the Villa in 1630. The new building, the *Casino del Bel Respiro*, was built between 1644 and 1652. Modifications and enlargements of the Villa and new constructions followed until the nineteenth century (Benocci, 2005). The *Giardino dei Cedrati* of *Villa Doria Pamphilj* located close to *Villa Vecchia*, owes its name to the presence of numerous citrus plants. Already indicated in the seventeenth-century Villa maps as a place for the cultivation of *melangoli* (bitter orange plants), and dedicated to the goddess Venus, this garden was fully restored by Gabriele Valvassori in 1736 with the creation of paths, fountains, and elegant perimeter walls decorated with wrought-iron railings. In 1733, the seventeenth-century *Fontana del Gigante* (Fig. 1) the travertine statue simulacrum of Tiber, was restored by Giovanni Battista Rolfini, at the shorter side of the garden and on two sides of the fountain were raised two elaborated wrought iron grates. This fountain was duplicated within the garden and was called *la Fontana di Venere* as dominated by a statue of the goddess. The *cocchio* of the *Giardino dei Cedrati*, accompanied by rows of vases of citrus, was the characteristic feature of the garden. This consisted of a series of columns supporting the trusses made of chestnut wood. In the middle of the garden a long *cocchio* produced shadow by numerous citrus plants and ended in a semicircular temple consisting in six small pillars surmounted by symmetrical arches (Fig. 2). The statue of Venus had an ideal and symbolic reference and citrus were related to the image of the goddess and the myth of the gold apples of Hesperides. Between 1873 and 1875, the

eighteenth century *Giardino dei Cedrati* was transformed into a complex production of fruits and especially citrous, extending beyond the boundaries drawn by Valvassori. In 1877 a new warm-greenhouse was built, designed for growing exotic fruits and the modernisation activities of greenhouses continued until 1882. From 1970 the garden was abandoned. Today, the *Giardino dei Cedrati* is subject to the process of decay, but awareness is building up and it is hoped that soon the garden will soon revert to being a place of "amusement and delight." The aim of this work was to describe the current state of the components present in the *Giardino dei Cedrati* and to evaluate different projects for the restoration and management in this area. The study was performed by students of the Master of *Curatore di Parchi, Giardini ed Orti Botanici*, University of Tuscia, Viterbo, with competences diversified in several fields, agronomy, architecture, biology, forestry and natural sciences, enriched by the integration and synergy among the different disciplines.

MATERIALS AND METHODS

The *Giardino dei Cedrati* of *Villa Doria Pamphili* assumed over time, a profound evolution and integration of forms, species of plants, features, colours, paths, areas of aggregation points. The scientific structure of the project is based on the detailed study of each of the components, as a part of an organic plan which considers the unity of the garden and the interactions with *Villa Dora Pamphilij* to which it belongs. Therefore, the methodological key of the research refers to the contents of the "The Florence Charter" (http://www.international.icomos.org/charters/gardens_e.htm) realised in Florence in 1982. The floristic census and physiognomy analysis of the vegetation was carried out during 2005 in the entire area of the *Giardino dei Cedrati*. In order to classify the plants belonging to the Genus *Citrus* in the *Giardino dei Cedrati*, in the prospect of their recovery, all individuals of *Citrus* trees were determined and subjected to phytopathological analysis. With the aim to determine the citrous species cultivated in the *Giardino dei Cedrati* during the seventeen and eighteen centuries, a large number of bibliographic sources have been used, and in particular Ferrari (1646) and Gallesio (1811). The area was subjected to a topographical survey. The planimetry was then overlaid with those previously reported and particularly with those drawn by Bettini (Benocci, 2005). In order to assess the conditions of adaptability of citrus species, as those present in the *Giardino dei Cedrati*, it was considered appropriate to investigate the putative climatic changes from the seventeenth century to date. Given the historical relevance of this extraordinary landscape reality, and since the *Giardino dei Cedrati* is at present placed in a context of high level of public attendance and expectations, diverse vegetational recovery as well as management and financial solutions have been hypothesised, respecting the historical evolution of the garden. The development of the project has therefore been conducted as follows: environmental and landscape frame, analytical description of the current state, recovery project hypotheses.

RESULTS AND DISCUSSION

Following the floristic census and physiognomy analysis of the vegetation, forty-six species belonging to 44 genera within 33 families mostly dicotyledonous were surveyed (Fig. 3). The surveyed *Citrus* species were identified as *Citrus aurantium* L. The general state of neglect of the garden has led to a consistent change in the original tree structure (Figs. 3, 4). Following the topographic survey and comparative analyses with previous planimetries, it was possible to represent in the area under study the significant architectural elements (gates, walls, fountains, etc.) and all plants (Fig. 5). Taking into account the climate change that occurred in Rome since the completion of the *Giardino dei Cedrati*, the climatic conditions today are more advantageous for citrus plants due to the increased average of temperature (Ucea, 2009). Alternative proposals concerning the maintenance and management were presented and compared. The first phase of the project was the identification of the aesthetic-historical references for a proper recovery and exploitation of the garden as well as its future management. The historical analysis

has led to give particular attention to the plant of Bettini (Benocci, 1988) and the analytical and topographical surveys carried out during the present research. On the basis of our study, we have proposed different planning hypotheses for the aesthetic qualification and proper use of the garden. The first plan is characterized by a minimum intervention, which consists in the cleaning and safety of the perimeter (Fig. 6A). We propose a restoration and reuse of all greenhouses present (semi-underground and above ground), not completely restored in the original form, but used as benches for exhibitions nursery plants. The second hypothesis, more radical than the first, provides for the partial revival of the plants of Bettini dated 1803 (Fig. 6B). Upon cleaning, making safe places and restorations of fountains, a section of *cocchio* of citrus, built with chestnut wood, will be created starting from the *Fontana di Venere* in parallel to the existing semi-underground greenhouses. These will be removed and vases of ancient citrus species will accompany the *cocchio* on both sides. In the third case, a restoration and reuse of semi-underground greenhouses is proposed, as benches for exhibitions of nursery plants. The restoration of the citrus rows in the area behind the *Fontana della Palomba* will be created (Fig. 6C). The fourth hypothesis, include both second and third options, and therefore the proposals already outlined in the second and third assumptions, with the possibility of restoration of the semi-underground greenhouses and in part that above-ground. In this context, a contemporary reading of the *Fontana di Venere* would be included, as a timeless connotation of a modern "Garden of Hesperides."

ACKNOWLEDGEMENTS

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Figures



Fig. 1. *Fontana del Gigante*

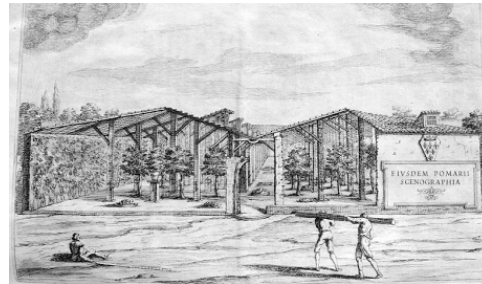


Fig. 2. Example of *Cocchio* with citrus, *Giardino Ducale di Parma*. Note citrus plants grown in vases and in soil (Ferrari, 1646).

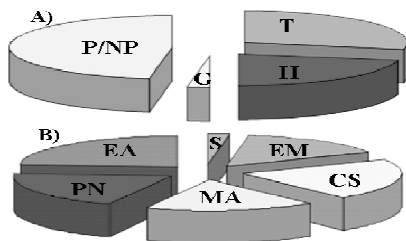


Fig 3. A) Analysis of the plant species (biological spectrum) and B) Corologic groups.

Therophytes (T)	13 species 28,3%
Hemycryptophytes (H)	10 species 21, 7%
Geophytes (G)	1 species 2,2 %
Fanerophytes (P/NP)	22 species 47,8 %
Steno-mediterranean (S)	1 species 2,1%
Euro-mediterranean (EM)	7 species 15,3 %
Cosmopolites, sub-cosmopolites (CS)	10 species 21,7 %
Mediterranean-Atlantic (MA)	8 species 17,4
Paleotemperate - Neo - Subtropicals (PN)	9 species 19,5 %
European-asiatic (EA)	11 species 24,0%

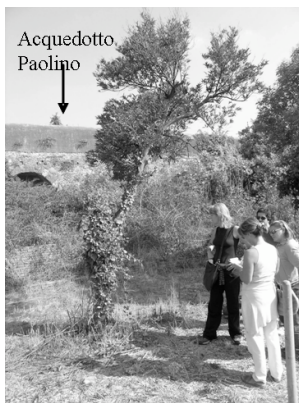


Fig. 4. Citrus tree characterised by wild form and presence of cankers and dry branches and twigs.

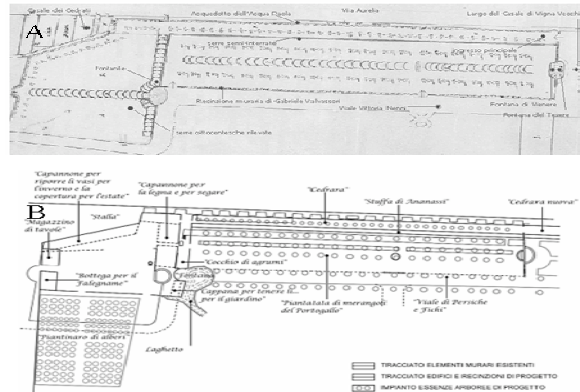


Fig. 5. The planimetry as Bettini (A) and actual planimetry (B) overlaid with that of eighteenth century (Benocci, 1988).



Fig.6. Pictograms of the A, B, C, restoring proposals of the *Giardino dei Cedrati*