A Giraffe in the Botanic Garden of Pisa (Tuscany, Northern Italy)

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Abstract: The Botanic Garden of Pisa was established in 1543 as a teaching tool and research facility. As with the vast majority of its sister institutions, it focuses on plant collections. However, for a short time in the first half of the XIX century, the Botanic Garden exhibited a living giraffe, a cow, and a calf. Due to the transient nature of the exhibition, it could have easily gone unnoticed but for the fortuitous representation of the animals in a drawing of the same period and for sparse notes archived in the libraries of Pisa University. Furthermore, a XIX-century publication on the morphological and behavioural traits of three antelopes indirectly suggests that those animals had been kept in the Botanic Garden for research purposes. This paper presents the evidence of the living animal display in the Botanic Garden of Pisa and the context in which it was collected.

Keywords: botanic gardens; zoological gardens; living animal exhibition; anatomical preparations

1. Introduction

The Botanic Garden of Pisa (Tuscany, northern Italy) has a long, richly documented history, which dates back to the Grand Duchy of Tuscany and the powerful Medici dynasty [1]. In 1543, the Grand Duke Cosimo I de' Medici, in an attempt to restart the University of Pisa, summoned Luca Ghini, a reputed physician and professor of medicine in the University of Bologna, and offered him the chair of "Lecture of simples"—the precursor of modern botany—at Pisa. Ghini accepted the Grand Duke's invitation conditional to establishing a "garden of simples", fully funded by the university and envisaged as a teaching tool where students could learn and investigate the properties and nature of herbs and shrubs [2].

Cosimo must have found Ghini's proposal unorthodox: back then, gardens of simples were common in monasteries and hospitals, but no university had yet established one. Indeed, a few years earlier, the University of Bologna had rejected Ghini's appeal to bear the expenses of his private botanic garden, which he had set up as a teaching tool for his lectures [3]. Nevertheless, Cosimo granted Ghini's proposal, so the first university botanic garden in the world was born in Pisa [4].

Given the context of its foundation, it is no surprise that teaching and research were deeply ingrained in the making of the Botanic Garden of Pisa. So profoundly ingrained, in fact, that teaching and research are still core elements of its mission, along with other issues that have arisen during its long history such as, for instance, plant conservation and public education [1].

Moreover, following the path opened by Pisa, some universities in Italy and other European countries had established their botanic gardens before the turn of the century or shortly afterwards: Padua and Florence in Italy [4]; Leiden in the Netherlands [5]; Montpellier in France [6]; and Oxford in England [7]. Similarly to the Botanic Garden of Pisa, they centred on teaching and research, and in turn inspired the foundation of other botanic gardens. Today, 1775 botanic gardens and arboreta exist in 148 countries worldwide [8].

While most botanic gardens remain focused on plant collections, a few became involved with animal collections as well and gave birth to hybrid botanical and zoological gardens. The most illustrious case arguably is the Jardin des Plantes, which opened in Paris, France in 1640 as Jardin Royal des Plantes Medicinales [9]. Around the middle of the eighteenth century, its director—no less than the celebrated naturalist Buffon—introduced waterfowl and peacocks in the garden, and later on developed a plan to provide a large aviary and an enclosure for other animals. In 1793, the national menagerie was established in the garden with a small number of animals, later expanded with the addition of specimens from the King's zoo in Versailles [10]. In Stuttgart, Germany, King Wilhelm, in 1846, built a royal mansion with two glasshouses and a conservatory. It later became the Wilhelma Zoological and Botanical Garden and has included animal exhibitions since 1951 [11]. Budapest's Zoo and Botanical Garden followed an opposite trajectory: it opened in 1866 as a zoo but soon incorporated a vast collection of plants [12].

At the end of the sixteenth century, the Botanic Garden of Pisa incorporated a museum with various natural history specimens but had no plan to display living animals. Eighteenth-century expense records do mention a donkey stabled in a shed. The equine doubled as a draft animal and producer of organic fertilizer but had no use as a specimen for zoological research or exhibitions [2]. Yet, in the first half of the nineteenth century, the Botanic Garden exhibited living animals by an unusual combination of people and events and for a brief period. Due to the transient nature of the exhibition, it could have gone unnoticed, but for the fortuitous representation of the animals in a drawing of the same period and sparse notes archived in the libraries of Pisa University. This paper presents the evidence of the living animal display in the Botanic Garden of Pisa and the context in which we collected it.

2. Materials and Methods

We carefully examined a drawing by Alfred Guesdon (1808–1876), named "Pise. Vue prise au dessus du Campo Santo", part of a book edited by Etiennez [13]. The vista is a meticulously rendered aerial perspective of the whole town of Pisa. Guesdon drafted it in 1849, allegedly from a hot-air balloon anchored just north of the Campo Santo (holy ground or cemetery), at the northern boundary of the famous "Piazza dei Miracoli", the square where the Leaning Tower of Pisa stands. The vista includes the Botanic Garden of Pisa.

We then compared Guesdon's rendition with planimetric maps of the Botanic Garden drawn around the mid-XIX century, including that by Van Lint [14] and drawings kept in the Botanic Garden and Museum of Pisa, and with published accounts of the garden's collections and layout [2,15–18].

Finally, we consulted Paolo Savi's manuscripts and correspondence from 1823 to 1871, kept at the University Library of Pisa (UL-PI) and the Natural and Environmental Sciences Library of the University of Pisa (NESL-PI), encompassing his tenure as Natural History Museum director.

3. Results and Discussion

Ghini established the University Botanic Garden in 1543 as a "Garden of Simples" on the right bank of the Arno river. It underwent two moves in the next four decades, before settling in 1591 in its final location, a short distance south from the monumental complex in Piazza dei Miracoli [2]. Therefore, Guesdon could have a detailed view of the Botanic garden from his balloon hovering over the Campo Santo. A comparison of Guesdon drawing (Figure 1) with a complex 3-D digital model of Pisa revealed a precise correspondence of the towers and other landmarks of the cityscape [19]. Indeed, his minute representation of the Botanic Garden of Pisa is fully congruent with all maps and descriptions of the garden of the same period. Hence, we consider the drawing an accurate visual description of the garden.

Figure 1. Guesdon's drawing of Pisa, circa 1849. The dotted blue line follows the Botanic Garden perimeter; the red arrow points at the circular enclosure where the giraffe was kept along with two animals. The northern side (towards the Leaning Tower) is the "Orto Nuovo", annexed to the Botanic garden in 1841; the southern side (towards the river) is the original late-XVI century garden ground. In the drawing the Orto Nuovo appears as an open space, with few trees along its edges, while a luxuriant tree cover fills the old part. A line of buildings clearly separates the two sectors (see also Figures 2 and 3).
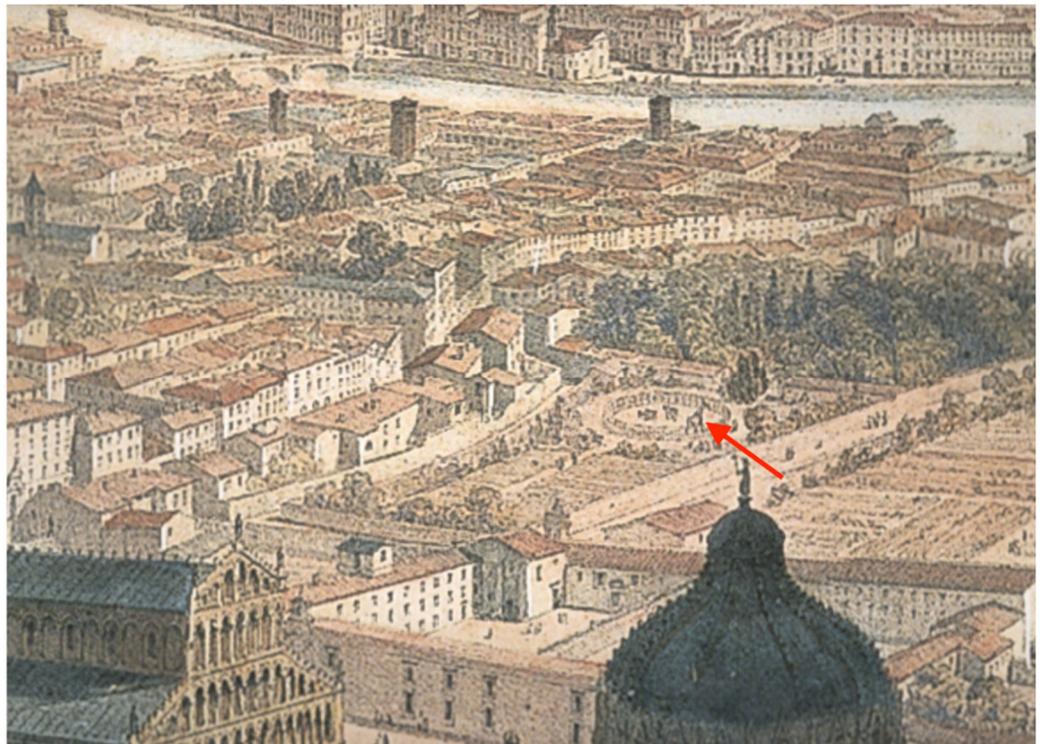
Figure 2. Close-up of Guesdon's drawing of Pisa, circa 1849. The red arrow points at the giraffe.
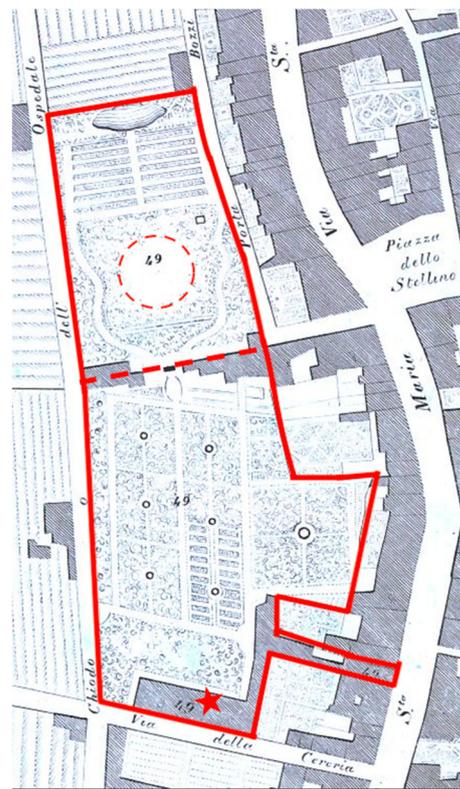
Figure 3. A detail of Van Lint's map of Pisa (1846) showing the Botanic Garden (red solid line). North is up. The "Orto Nuovo" lies above the red dotted line; the red dashed circle shows the position of the giraffe enclosure within the "Orto Nuovo"; the red star marks the Natural History Museum building at the southern boundary of the Botanic Garden.

At the time of the drawing, the garden retained the original late-sixteenth-century core area, a small expansion at its eastern edge in 1784, and a sizeable one annexed in 1841 at its northern border.

The garden maps show a clear difference in layout between the new and old sectors. The three-dimensional perspective of Guesdon's drawing shows a visual distinction between the two sectors (Figure 1). The old part is almost overgrown with large trees up to a line of buildings at its northern edge, but the new part is an open ground with geometric features. Close to the buildings is a circular enclosure with three large animals inside. One keeps close to the enclosure and out-tops it, with most of its body rising well above the enclosure's posts. The long neck, the forelegs longer than the hind limbs, and the sloping back unequivocally identify it as a giraffe (Figure 2). The remaining animals do not reveal diagnostic features. Bedini [18] tentatively identified that closest to the giraffe as an elephant but was biased by his wrong interpretation of the animal drawings as additions by Guesdon, possibly inspired by the menagerie at the Jardin des Plantes.

Indeed, a giraffe, property of the Grand Duke Leopold II (1797–1870), reached Pisa from Alexandria (Egypt) in 1847. The Grand Duke entrusted it to the care of Paolo Savi, director of the Natural History Museum, with a well-established international reputation [20]. The Grand Duke was fully aware of Savi's husbandry skills, having put other living animals in his care [21]. In a letter to a friend, Savi wrote that the giraffe was a male in excellent health and enjoyed the company of a cow and a calf ("E' un maschio, adesso vispo e allegro, talchè sembra sanissimo, ha in sua compagnia una Vacca con vitello . . . ") (NESL-PI, Manoscritti Savi, cart. "Varia 18").

So, the giraffe was indeed a giraffe, the "elephant" a cow, and the third animal a calf. The two bovids were there to provide company to the giraffe. The question arises, how did Paolo Savi obtain permission to pen the giraffe and its companions in the Botanic garden?

As far as we know, no plan had ever been made to place a menagerie in the Botanic Garden and no documents corroborate any hypothesis, but there are remarkable coincidences of places and people.

At that time, the Natural History Museum lay at the southern border of the Botanic Garden (Figure 3). The proximity helped maintain close links between the two institutions, and during Paolo Savi's directorship (1823–1871), the Museum flourished [20].

Besides physical proximity, the directors of the two institutions had close family ties, as the Botanic Garden directors were Paolo's father Gaetano, from 1814 to 1843, and Paolo's younger brother Pietro, from 1843 to 1871 [2].

Gaetano Savi succeeded in expanding the garden area in 1841, when he added a sizeable plot to the northern border. The new site, dubbed "Orto Nuovo", contained a circular open space that was not planted with collections. Later on, it provided the space for "Piazzale Arcangeli", the circular plaza where the main building inside the Botanic Garden was constructed fifty years after [1].

Gaetano Savi was a caring and loving father [22]. He supported his children's instruction and encouraged them in the first steps of their academic careers. He was instrumental in securing the posts of museum director for Paolo and garden director for Pietro.

He died in 1844, and it makes sense that just three years later, it was natural for Paolo to request—and for Pietro to grant—permission to pen the giraffe in the Botanic Garden, which was conveniently located next to the Museum (Figure 3). In 1847, as shown in Guesdon's drawing, the old part of the garden was packed with plant collections, including many large trees, amassed in about 250 years since the garden's last move. The recent expansion of the Botanic Garden with the "Orto Nuovo" and its open space likely appeared as the best place for the enclosure. There was enough space for the giraffe and the two bovids. A circular open space, matching the location and extent of the enclosure in Guesdon's drawing, is visible in Van Lint's map [14] (Figure 3).

It is also possible that the giraffe was not the first living animal held in the Botanic Garden for research purposes. In 1828, Paolo Savi had agreed to keep three antelopes sent by the Grand Duke and had published an exhaustive account of the antelopes' daily behaviour and individual morphological characters [21]. Savi's detailed observations and accurate descriptions suggest that he could observe those antelopes daily [23], most likely in the Botanic Garden, but not in the enclosure witnessed by Guesdon, because the "Orto nuovo" where it lay was not yet part of the Botanic Garden. A more tenable surmise is that the antelopes were stabled in the donkey shed or a similar building within the garden premises. If this were the case, it would provide a precedent for Paolo Savi's request to keep an animal in the Botanic Garden.

The giraffe lived in the Botanic garden for at least two, maybe three, years and there are no clues as to where so large an animal was housed to overwinter or how it was fed. Quite surprisingly, we found no memory of its presence in visitors' accounts. The giraffe might have gone unnoticed without Savi's letters and Guesdon's iconographic record, produced precisely during the short time window of the animal's display in the garden.

Sometime afterwards, the giraffe was relocated to the San Rossore estate, a vast Grand Duke's landholding near Pisa, in a specially built stable. Upon Savi's explicit request, the stable had a southern exposure to reduce the discomforts of cold winters. The construction contractor, Agostini Gigli, informed Savi that the stable was finished on 15 October 1849, after which the Royal Possessions Superintendent pressed Savi to move the giraffe to its new home [24].

A few years later, the animal fell ill with an inflammation of the mouth and died in 1853 (UL-PI, reel 942 Savi Paolo, Carteggio). Upon learning of the animal's death, the Grand Duke, in a letter dated 5 December 1853, ordered to send the skin and skeleton to the Museum of Natural History in Florence and donate the viscera to the Natural History Museum (then Museum of Zoology and Comparative Anatomy) of the University of Pisa, for appropriate preparation and display as zoological specimens (UL-PI, reel 942, booklet 7 Savi Paolo, Carteggio).

Museum dissector Cesare Studiati (1821–1894) wrote a detailed report of the anatomical preparations of the giraffe's internal organs he performed in 1853–1854 under Paolo Savi's supervision: the brain, the oesophagus and stomach, the heart, the last tract of the intestine, the spleen, the gallbladder, and the urinary bladder (NESL-PI, Manoscritti Savi, cart. "Varia 18"). The heart is still on display in the Natural History Museum of the University of Pisa (Figure 4).

Figure 4. Anatomical preparation of the giraffe's heart, made in 1853. The specimen is on display at the Natural History Museum of Pisa University.

The giraffe transfer to the Grand Duke's estate marked the end of the brief, opportunistic display of living animals in the Botanic Garden of Pisa. The enclosure left no remnant, and the Botanic Garden of Pisa never had another zoological exhibition. Still, a physical memory of that event persists thanks to Paolo Savi and his taxidermic and anatomical preparations.

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