



Giardino della Minerva
ORTO BOTANICO DELLA SCUOLA MEDICA SALERNITANA

INGLESE

LA STORIA.

The Garden of Minerva is located in the heart of the old town, in a zone known as the "Plaium montis" in the Middle Ages. It is halfway along an ideal route that runs along the axis of the walled and terraced vegetable gardens, climbing from the Municipal Park, near the River Fusandola, towards the Arechi Castle.

The "viridarium" was owned by the Silvatico family from the 12th century, as recorded by a parchment conserved in the Badia archives in Cava de'Tirreni.

Later on, in the first twenty years of the 14th century, Matteo Silvatico created a garden of *simples* here, a forerunner of all future botanical gardens in Europe. Silvatico's great work, entitled *Opus pandectarum medicinae*, provides us with the first description of the garden: "... and I have a taro, in Salerno, in my garden, near a well known spring."

In this area of extraordinary cultural value, which can now be identified in the area of the Garden of Minerva, he cultivated some of the plants used to produce the active ingredients employed for therapeutic purposes. Matteo Silvatico also taught here, showing the plants to the scholars at the School of Medicine and providing their names and characteristics (*ostensio simplicium*).

During a recent archaeological dig, the mediaeval garden was found at a depth of around two metres under the current ground level.

In 1666, Don Diego del Core "... bought a house with gardens... the house with garden was restored and made habitable." The notarial deed also provides one of the earliest descriptions of the terrace and the garden: "... there is a loggia partly covered by a ribbed vault supported by pillars and partly uncovered, with paving around it, comprised of pieces of crushed brick and offering a view of the sea and the surrounding mountains, with a fountain to the right filled with perennial water... there is a wall that supports the fountain, but it is in poor condition and could collapse, damaging the loggia... in it there is a door with seven steps leading down into the garden, which consists of a flat site with two fig trees, two bitter orange trees and vines that formed a pergola over eight pillars, although they are currently on the ground as the wood that formed the same has rotted away, and other pillars have fallen over or broken." A mention is also made of the fish pond and the steps that led to the second level of the garden. There are other fig trees in this area and a fountain that feeds the pool beneath. Therefore, in the mid-17th century, the property had already taken on its current appearance, despite the many areas of damage.

The last owner was Professor Giovanni Capasso who, thanks to the interest of the lawyer Gaetano Nunziante, Chairman of the Asilo di MendicITÀ, donated the whole property to this charitable institution immediately after the Second World War.

In November 1991, during the *Pensare il giardino* symposium in Salerno, a project was presented for the creation of a botanical garden dedicated to Silvatico and his garden of *simples*. This project was funded and developed in 2000 by the Municipal Council (current owners of the property), using funds from the European "Urban" programme.

Now that the restoration work has been completed, visitors to the garden today can see an interesting series of elements dating back to the 17th and 18th century. One of the most attractive is the long flight of steps, marked by cruciform pillars, which support a wooden pergola.

The flight of steps, which links and visually frames the various levels of the garden, is built on the ancient city walls and offers a far-reaching, beautiful view of the sea, the old town and the hills.

A complex water distribution system, comprised of channels, pools and fountains (one per terrace), denotes the presence of conspicuous springs that have made it possible to keep cultivating the plots over the years. The site also has its own unique microclimate, favoured by the lack of northerly winds and by its favourable exposure which, even today, makes it possible to cultivate plants that demand lots of warmth and moisture.

MATTEO SILVATICO E LE PANDETTE.

Matteo Silvatico

The Silvatico family came to Salerno from Toscano Casale. This ancient and highly influential family, recorded in the *Seggio del Campo*, produced a doctor as early as the 12th century: Giovanni Silvatico, soldier and baron. Another Giovanni Silvatico, also a doctor, is mentioned in 1188. In 1239, Pietro Silvatico was procurator of the *Terra di Lavoro* area and the District of Molise on behalf of Emperor Frederick II. Later, a certain Ruggiero Silvatico was recorded as one of the feudal lords of Charles, Prince of Salerno, in 1269. Between the 13th and 14th century, Matteo Silvatico made a name for himself as a distinguished doctor of the School of Salerno with a great knowledge of plants used in the production of medicines. The Pinto manuscript tells us that the Silvatico family home was to be found in the vicinity of the Church of Santa Maria delle Grazie. Matteo became very well known. So much so in fact that the King of Naples, Robert of Anjou, wanted him as one of his personal doctors, granting him the title of *miles* as a mark of his gratitude and generosity. He appears under this title in a document drawn up between the Archbishop of Salerno and the Confraternity of the Crusades.

Giovanni Boccaccio probably met him at the court of King Robert, and went on to dedicate the 10th novella of the 4th day to him in his Decameron.

The Pandects

Silvatico's main work was the *Opus Pandectarum Medicinae*, a lexicon on *simples*, mostly of plant origin. The manuscript was completed in 1317 and dedicated to the King of Naples, Robert of Anjou.

A century and a half later, Angelo Catone Sepino, the personal doctor of Ferdinand I of Aragon, King of Naples, held the opus to be extremely interesting, so much so that he edited the first edition, printed in Naples in 1474. Over the following century, the Pandects were republished several times, with the addition of an index and *additio*.

In the Venetian edition printed in 1523, the Pandects are comprised of 721 chapters. Of these, 487 discuss plants, 157 discuss minerals, 77 discuss animals and 3 describe simples which we were unable to define. The 487 plants are given 1972 names (Latin, Arabic and Greek), with an average of 4 synonyms per plant.

The chapters of the Pandects open with the name of the simple, then followed by the list of synonyms (Latin, Arabic and Greek), the morphological description taken from illustrious authors (mainly Dioscurides and Serapion the Younger) or from personal experience, and the complexion (that is to say the "nature" of the simple), closing with a list of their therapeutic properties.

The title of the chapter provides the first evident indication of the extent to which Eastern culture influenced Silvatico's work. Of the 487 chapters on plants, 233 (42.9%) are defined with an Arabic name, 134 (27.6%) with one of Greek origin, and only 120 chapters (24.6%) are named with a Latin term. This influence is even clearer if we consider the significant number of chapters dedicated to species of exotic origin. Of a total of 484 plants we identified, 67 (13.8%) are exotic. This influence is one of the most singular and unique aspects of the Opus. No other European treaty brings together so many Arabic names to define plants of Mediterranean origin.

The morphological description is almost always rich in details, often taken from the classics. The parts of the plant are either described or compared to similar organs in much better known plants or ones that have already been illustrated. There is much of Silvatico's personal experience in these meticulous descriptions. Amongst the merits of Silvatico's work, we should emphasise the scientific precision adopted in the description and in listing the properties of the plant simples. There is nothing of the magic and superstition found in other texts.

Lastly, it is interesting to note the great attention dedicated by the Author to the hypogean organs of the plants (roots, rhizomes, bulbs, tubers, etc.). They are always mentioned in the descriptions and their form often influences the very name of the plant, just as, from Linnaeus onwards, it is the flower that influences the new binary nomenclature.

CONTRARIA CONTRARIIS CURANTUR.

In Salerno, mediaeval therapies and, consequently the study of medical botany, were essentially based on the "doctrine of the four humours". In its turn, this doctrine was based on the ancient "theory of elements".

In around the mid-6th century B.C., Pythagoras of Samos, and his followers from the school in Croton, perfected the doctrine linked to the concept of "harmony" that supports and governs the composition of matter. This harmony is not static, but exists in a continuous unstable balance. It is the result of a balanced antagonism of opposite forces inherent to things. The harmony that supports the universe also supports man, giving him his health. When this balance is upset it causes illness. However, the influence of the Pythagoreans on medicine goes further than this. They saw life as being comprised of four elements: earth, air, fire and water, which correspond to four qualities: dry, cold, hot and moist. The humours (blood, black bile, yellow bile and phlegm) correspond to the four elements (air, earth, fire and water) and possess the same characteristics. The humours and, thus, the elements have a direct relationship with the so-called "primary qualities" they possess: hot, cold, moist and dry. "[...] *There are four bodily humours: blood, phlegm, yellow bile and black bile. Blood is moist and hot, phlegm is cold and moist, yellow bile is hot and dry, black bile is dry and cold [...]*".

The combination of these four humours determines the "temperament" of the individual, his mental qualities and his state of health. This is the *theory of humours*, which dominated medical thought from 500 B.C. until Virchow's revolutionary findings in 1858!

The human body is therefore governed by the presence of these four humours. If they are unbalanced, the patient becomes ill. Illness, understood as an excess of one humour compared to the others, must therefore be fought using a natural product (be it "simple" or "compound") that opposes the surplus humour. Hence the importance of classifying plant "simples" with the same criterion used for the study of humours in man. We thus have hot and moist plants, hot and dry plants, cold and moist plants and cold and dry plants.

However, alongside this initial subdivision, we have a second equally important one, which uses a "grading" system to clarify their physiological power. Amongst other things, the "grade" is the main classification criterion for the *simples* used in the *Graduum simplicium*, also known as *De simplicibus medicamine*, by Constantine Africanus († 1085). It discusses "[...] *the extent to which the medicine is hot, cold, dry or moist. There are four grades. The fourth is that in which the medicine is so hot that no further [action can be taken] without killing. It would kill anyone who used it in large quantities. [...]*"

The flower beds on the first terrace, already subdivided into four "portions" thanks to the two pre-existing orthogonal paths, lend themselves well to this didactic illustration. We can thus explain the theory underlying the treatments current at the School of Medicine, whilst also comparing the mediaeval classification criterion with the modern criterion of families, on the basis of the work of Linnaeus.

IL SISTEMA DELLE ACQUE.

"Just as the body is dead without the soul, so the garden is dead without water." These are the words of Agostino del Riccio, a former Dominican friar from Florence, in his monumental manuscript *Trattato di agricoltura sperimentale (Treaty on Experimental Agriculture)* (1595), in a chapter dedicated entirely to water. Effectively speaking, water has always been a limiting factor in the Mediterranean garden. Too little water during the summer means that irrigation is essential, while the excessive water in the winter needs to be removed from the soil using adequate drainage systems.

One of the basic elements of Mediterranean agriculture is the knowledge of how to manage water for irrigation purposes. Therefore, over the centuries, the water collection, transfer and storage systems have become increasingly sophisticated in terms of functionality, but also in their intrinsic aesthetic properties, becoming true decorative elements in the kitchen and flower garden. The garden at Villa d'Este in Tivoli is a wonderful example, with its impressive cascades and numerous water features. An essential activity such as irrigation is thus used to link agronomic practices with aesthetics, the periodic and necessary administration of water with a love of beauty and formal elaboration. The loops of water and the continuing line of fountains, spurts and streams down the slope of the garden do therefore not just have an aesthetic role, but also help irrigate the whole garden. Fish ponds, cisterns and small channels represent an unmistakable part of the Mediterranean garden in our collective imagination. These items bring the culture of the Islamic garden to mind, which had such a big influence on the agricultural landscape of our country over past centuries.

Salerno and the Amalfi Coast area was also characterised by the presence of these water collection and transfer systems. In fact, thanks to its orographic characteristics, the availability of water at high altitudes and its agricultural potential (citrus fruit groves, vineyards, vegetable gardens, flower gardens), this area was naturally destined to become an area for experimentation with these irrigation techniques. The entire impluvium above Minori is, for example, connected by a closely knit network of small channels, which fill the numerous fish ponds on each terrace with water every summer. Not to mention the channels that serve the ancient industrial buildings (paper mills, oil presses, flour mills and ironworks located in the Amalfi valley of the same name, etc.).

A small but invaluable example of this organisation, where a useful resource is turned into an ornament, is represented by the water collection and distribution system in the Garden of Minerva.

LA CITTA' MEDIEVALE E I SUOI GIARDINI.

In the past Salerno was a city of flower and vegetable gardens. This was possible thanks to its mild climate, its abundant spring waters and its fertile soil. Donato Dante, in his book entitled "Salerno nel Seicento" (Salerno in the Seventeenth Century) describes the impressions of the city found in some important historical texts: "[...] The reader could therefore find out about the wealth of natural beauty with which the city was fortunately endowed by its location, about its beautiful landscape, the abundance of clear waters, the mild seasons, the air that was 'so healthy, that its glory was medically acknowledged', its fertile land rich in vineyards, the 'intense' scent of the 'orange blossom', which permeated the numerous gardens [...]".

However, we only have very little, fragmentary information about the organisation of these gardens in the Middle Ages. Their distribution throughout the urban fabric of Salerno was certainly linked to the design of the walls and the availability of water. A series of terraced, walled vegetable gardens was located to the west, along the axis of the fortifications and the river Fusandola, where use was made of the plentiful springs on the slopes of Mount Bonadies. To the east, the flower and vegetable gardens in the Orto Magno area were mainly located in the vicinity of the city walls and the waters of the River Faustino (now Rafastìa), using the water from a large number of wells. Additional gardens were certainly built in and around the monasteries located throughout the ancient city area.

The entire eastern zone of the city was dotted with large areas set aside for agriculture until the mid 10th century (hence the name "Orto Magno", or large vegetable garden). With the passage of time, the "empty land" lost its value as agricultural land and became worth more as building plots. Houses with kitchen gardens, citrus groves and vine pergolas fell significantly in number. The few free spaces remaining either belonged to the church or the "communal courtyards", a kind of jointly owned vegetable garden used by several houses (cf. P. Delogu, *Mito di una città meridionale; Codice diplomatico cavese*, In. 131, anno 912: *Traditio medietatem de casa et terra con pergola e cetrario in orto magno sotto la porta Elina, e con pozzo*).

Today, most of the area is built-up. The Rafastìa runs under the road surface, following much of the course of Via Fieravecchia. Unfortunately, the ancient name of the district is all that remains of the agricultural vocation of this area.

On the contrary, most of the gardens in the Fusandola area are still in existence. In most cases, these were pieces of land protected by thin walls, which had the dual role of protecting the vegetable gardens and improving the internal microclimate. The plentiful availability of water for irrigation was essential for the system to operate. The water was stored in containers (the so-called "fish ponds", still visible today), which were also used to farm fish and for other production purposes (wax processing). In fact, all the Fusandola gardens were served by aqueducts, including one, built in 1238 on behalf of the Santo Spirito Abbey, which took water from a spring in a place named "Acquarola", not far from the San Leo Monastery (Canalone area).

Initially, the water carried by this aqueduct was only used by the Santo Spirito Abbey. However, later on, given the plentiful water supply from the spring, it was distributed, upon payment of a fee, to the nearby monasteries and then to private land (cf. F. Cifelli - P. Valitutti - S. Vitolo - S. Marino, *Il sistema delle acque tra giardini, balnea e residenze nella Salerno medievale*). An efficient and widespread water supply system was thus created over the centuries, which distributed water from the "Acquarola" spring to numerous gardens: Giardino lo Paino, Giardino della Minerva, Giardino della Cera, Giardiniello di San Leone, Giardino grande di San Leone, Giardino di Busanola (Fusandola), Giardino delli Zicardi and others.

IL GIARDINO DI IERI, L'ORTO BOTANICO DI OGGI.

On 10th December 2000, the first restored plot of the Garden of Minerva was inaugurated. This marked the completion of a fundamental stage in the operation contemplated during the "Pensare il giardino" symposium in November 1991.

The first and most important problem to be solved in the approach to the restoration of the Garden of Minerva was how to reconcile the still evident structure of the garden itself, represented by its architecture, and the function of high botanical value that it would host.

A significant example of an 18th century Salerno garden, its state of preservation before this operation had suffered considerably due to general neglect, over many years, of all its decorative and structural elements. Therefore, in addition to the need to demolish the incongruous structures and consolidate others (steps with pergola, terrace containment walls) and the confirmation of stylistic details that were no longer evident (finishes, mouldings, colour), the restoration work concentrated on recreating its characterising phase as far as possible.

The oldest layers of the garden were analysed by means of investigations using specific garden archaeology techniques, providing significant information on the various historic phases and also shedding plenty of light on the mixtilinear design of the flower beds and the complex system of the water channels, also stratified. This, together with a careful examination of the nine fountains, made it possible to identify the ancient water course with certainty, amidst collection, flow and downflow streams.

Anyone who enters the garden gains an immediate understanding of its significant monumental and landscape qualities. Many signs of its last phase of splendour still survive today. What is less evident, but no less important, is the skilful system, of ancient Arab origin, used to channel and distribute the water. Created for purely practical reasons (preservation of water resources for irrigation), it was then turned into a decorative feature, without however renouncing its original role.

What is not yet clear is, perhaps, the main reason for its importance: the fact that Matteo Silvatico, in the early 14th century, chose this spot for the first *garden of simples* in the history of medical science, dedicated to experimentation and education.

Given their importance, each of the above characteristics must be restored and made to exist in harmony with the others, in particular with the function of a Botanical Vegetable Garden used to grow the species used by the School of Medicine and described in Silvatico's *Opus Pandectarum Medicinae*.

Running Aims

Having concluded the indispensable restoration work, the problem of allocating the botanical collection was resolved by seeking to preserve and exalt the specific characteristics of a Mediterranean vegetable and flower garden.

This means that the Garden of Minerva is not a traditional botanical garden, but must cater for the numerous themes and multiple specificities present therein (from the history of medicine to that of the "Mediterranean garden").

The educational themes to be developed can be briefly summed up as follows:

- a) The Mediterranean garden, midway between "beauty" and "practicality" (creation of a walled and terraced vegetable garden).
- b) Silvatico's garden of simples:
 - 1) the ancient system of classifying *simples*;
 - 2) the comparison between the drawings in mediaeval herbariums and reality;
 - 3) the "garden of roots".

The development of the first theme aims to focus visitor attention on the unchanging aspects of vegetable and flower gardens in the Salerno area, such as the most definite reference points in terms of knowledge, and such as the elements that link it to the concept of the Mediterranean garden and what, on the other hand, makes it stand out from the many other examples found around the Mediterranean: its history, its landscape, the use of light and water, the materials and the vegetation.

The most important educational element of the theme linked to Salerno's botanical tradition will be the illustration, in the largest terrace in the garden, of the ancient plant classification system (*the parterre of the complexions and grades*).

In all the other flower beds in the garden, the plants will be arranged on the basis of the "landscaping" criterion. All the species will be identified with a label that refers to the ideal position of that *simple* in a design representing the "positioning of the elements", superimposed over the concentric subdivision of the grades.

Having defined the vegetation structure of the vegetable and flower garden, the plots will then be used to cultivate herbaceous annuals, biennials and perennials, which account for most of the list, thus completing the image of the Mediterranean vegetable garden.

Special booklets, reproducing images of Salerno's codices and herbariums, will be distributed to visitors so that they can appreciate the analogies and differences between the historic illustrations of the plants and reality. The expressly educational and explanatory scope will be to provide visitors with different levels of information during their visit.

Lastly, in a particular shady zone of the garden (the current "laundry"), there will be a small root display. By comparing the historical illustrations with the real form, it will be possible to show the value of roots in ancient botany, not just as invaluable reserves, rich in active ingredients, but also in relation to their magical and superstitious implications.

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Maggiori Informazioni su: www.giardinodellaminerva.it