



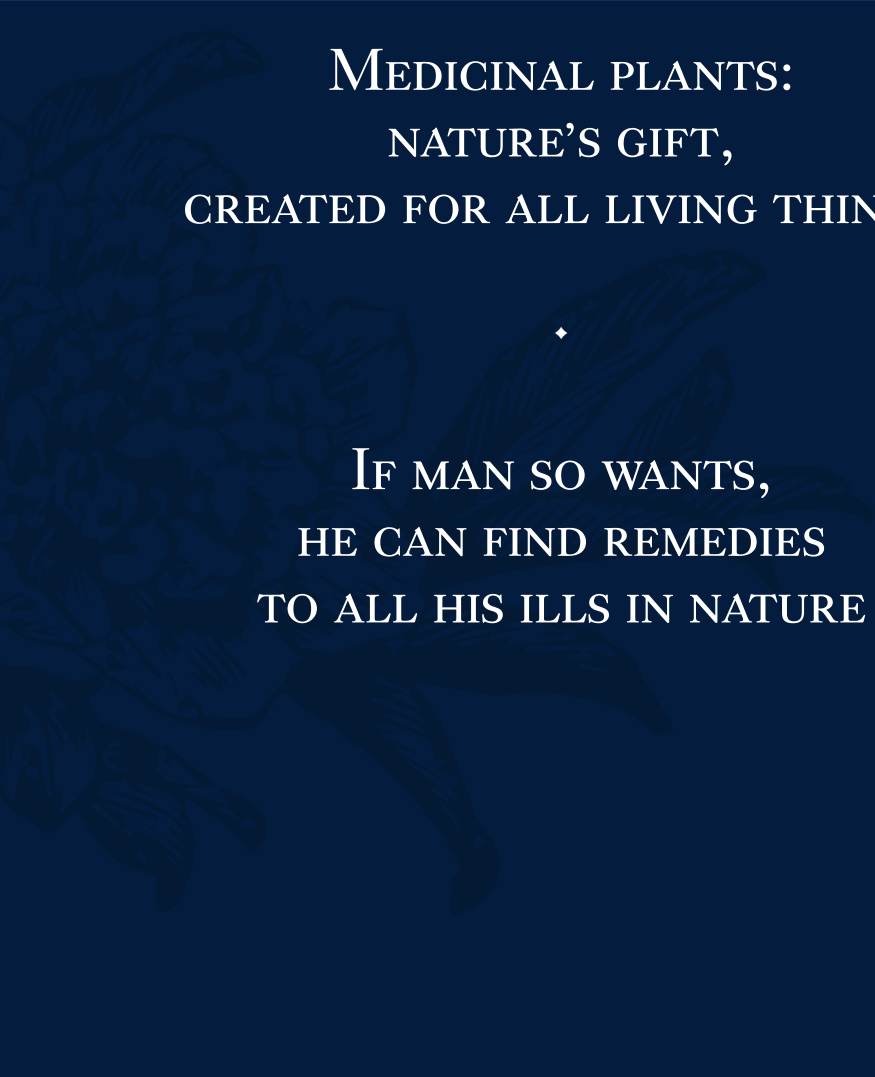
HISTORICAL TOUR

Herbs and Health through the ages

Aboca

MUSEUM





MEDICINAL PLANTS:
NATURE'S GIFT,
CREATED FOR ALL LIVING THINGS

♦

IF MAN SO WANTS,
HE CAN FIND REMEDIES
TO ALL HIS ILLS IN NATURE



The Aboca Museum, the original and unique museum of Herbs, retraces and passes on the age-old story of the relationship between humans and plants

The museum tour **Herbs and Health through the ages** guides us through the rooms of the prestigious Bourbon del Monte Renaissance palace, to reveal the ancient tradition of using medicinal plants and highlight the therapeutic qualities of herbs through some of the most significant specimens.

This permanent exhibition features antique collections with great historical, scientific and artistic value: precious mortars, exquisite pharmaceutical pottery, the finest glassware, rare herbals and surprising apothecary equipment introduce visitors to the age-old story that has always connected mankind to medicinal plants.

The fascinating and faithful reconstruction of the workshops that rounds off the tour takes visitors on a thrilling journey through time, covering technical developments, scientific discoveries and innovative high-precision instruments.

The tour is studded with interesting facts, anecdotes, aphorisms and natural fragrances to enliven a story that spans millennia, while the medicinal plants and their scents welcome and accompany visitors throughout the historical tour of medicinal herbs.

Bourbon del Monte palace, home to the Aboca Museum

This is one of Sansepolcro's most elegant 17th-century residences: in a sober and stately style, it stands next to the church of San Rocco and faces the tree-lined piazza now named after Piero della Francesca, which has always been a social, religious and artistic focal point of the town.

The building is the result of several different constructions built on medieval foundations, some traces of which can still be seen in the cellars as well as in the tower that is part of the ancient city walls: the Torre del Catolino, dating from between the 12th and 13th centuries.

The history of Sansepolcro is well known after the battle of Anghiari in 1440, when the State of the Church sold the town of Borgo Sansepolcro to the *Signoria* of Florence for 25,000 gold ducats. It remained under Florentine control until the unification of Italy. In 1500, Giuliano da Sangallo, the trusted architect of Lorenzo de' Medici was commissioned to fortify the city with new walls and enclosures, and he promoted the construction of the most important palaces that still grace the town. Construction of Palazzo Bourbon del Monte began at the end of the 17th century, but was halted in 1703 due to an earthquake and changed hands several times. At the end of the 17th century, the del Monte Marquises acquired the palace from the ancestral Alberti family.

Its large ballroom was sometimes used by the Marquis Monaldo (1685–1757) of the Monte Santa Maria Marquisate as a venue for theatrical and musical companies from Biturgia. It also houses the family coat of arms: a blue shield with three golden fleurs-de-lis and a diagonal knotted rod. The marquises had the privilege of adding the double headed eagle to their coat of arms, the symbol of the Habsburg-Lorraines who succeeded the Medicis in governing the Grand Duchy of Tuscany.

In 2002, after careful renovation, the building became the home of the Aboca Museum.



The entrance

The tour begins at the entrance itself, where visitors are welcomed by a case displaying a selection of the exhibits housed in the museum. Informational panels provide an introduction to the historical and scientific tour that recounts the story of the relationship between humans and medicinal plants, from prehistory to the present day, accompanying visitors throughout the exhibition.

An ancient stone set in a wall of the entrance recounts activity that is likely to have taken place in the palace: the art of the apothecary. The inscription, in capitals, PRODEST-OBEST (HELPS-HARMS) is a clear warning and call to make careful use of medicinal plants, which can help us, but can also harm if used incorrectly.



Nature is the source of health-giving remedies.

Since time immemorial *Plants* have enabled
Humans to cure illnesses
and to recover *Health*.

The unceasing use of plants over time to care for health
is a direct confirmation of their therapeutic effectiveness.

Over the centuries medicinal plants
have created a *Story*
that *Aboca Museum* illustrates and tells.



Herbs and their depictions in oriental carpets

Throughout the tour of the museum, precious 'herbal' tapestries depict stylised plants, flowers and trees through a variety of interpretations. These tapestries reflect ancient cultures with varying understandings of medicinal botany, steeped in mythical, symbolic and religious meanings.

The “herbal” carpets



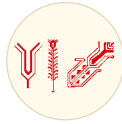
THE TREE OF LIFE

An ancient symbolic theme. The biblical tradition considers it the heavenly tree that gives immortality, heals or brings man back to life. In the Persian Zoroastrian tradition, it is a gift of the supreme God, around whom thousands of “healing plants” grow.



OPIUM POPPY

This stands for the world as a place of transmutation (typical of the agrarian cycle) and also symbolises sleep, oblivion and witchcraft.



TULIP

It symbolises prosperity, perfect love and the promise of faithfulness.



LOTUS FLOWER

This is one of the most ancient and widespread symbols, and is found in the ancient traditions from Egypt to India, from China to Japan. It symbolises purity, rebirth and immortality as well as agricultural fertility and prosperity.



WILLOW

An important plant for cold wet places, it is another version of the tree of life. A symbol of purity, immortality and fecundity, it is associated with the vault of heaven and communication with the sky.



POMEGRANATE

A symbol of agrarian fertility, it is above all auspicious for the fecundity and happiness of marriage.



ROSE

It symbolises initiation to mystery, perfection, regeneration and immortality. It is associated with dew, which is the heavenly water of agricultural fertility. A white rose means purity, a red one passion and fertility and a wild rose burning desire.



CYPRESS

This is one of the forms that the tree of life can take. It symbolises death and rebirth and in the Far East it means immortality and longevity. For nomads, it means the “presence of water in the desert”.



The staircase

The walls of the staircase that guide visitors into the rooms of the museum are embellished with magnificent botanical illustration plates from the extraordinary collection held in the Bibliotheca Antiqua of the Aboca Museum. Periodically interchanged xylographs, lithographs and engravings provide an atmospheric introduction to the museum tour.

Surprises are to be found in the imperial magnificence of the images taken from the *Hortus Eystettensis* by apothecary Basilius Besler (1613), the delicacy of those from the *Jardin d'Eden* by naturalist Pierre Buc'hoz (1783) and the charm of the flowers and insects illustrated by botanist and entomologist Maria Sibylla Merian (1730).



Hortus Eystettensis by Basilius Besler,
Nuremburg, 1613

All

Living things,

whether animal or vegetable, including man,
evolved in parallel starting from the same
primordial biological system (the cell).

They formed specialised metabolic structures,
organised in different ways, of mutual benefit.

Flavours, fragrances, colours, composition and texture

are the "coded" messages that

Medicinal plants

use to make themselves "understood" by other living things.

Man's intellectual abilities
have transformed the "virtues" of these plants into

Natural medicines



Medicinal plants, animals, and humans:
a history through time

MILLIONS OF YEARS	ERA	PERIOD	EVOLUTION AND IMPORTANT FINDINGS
4000 - 2500	EO-/ PALEO-/ MESO-/ NEO-ARCHEAN		PROKARYOTIC CELL, PHOTOSYNTHESIS
2500 - 1600	PALEO-PROTEROZOIC		EUKARYOTIC CELL
1600 - 1000	MESO - PROTEROZOIC		MULTICELLULARITY
1000 - 541	NEO - PROTEROZOIC		
541 - 485	PALEOZOIC	CAMBRIAN	
485 - 443		ORDOVICIAN	
443 - 419		SILURIAN	VASCULARIZATION
419 - 359		DEVONIAN	SEED, ARBORESCENT HABIT
359 - 299		CARBONIFEROUS	
299 - 252		PERMIAN	
252 - 201		TRIASSIC	
201 - 145		JURASSIC	
145 - 66	MESOZOIC	CRETACEOUS	FLOWERING PLANTS (ANGIOSPERMS)
66 - 23	CENOZOIC	PALEOGENE	
23 - 2.6		NEOGENE	
2.6 - Present		QUATERNARY	



**CHRONOLOGY OF SOME GROUPS OF PLANTS
STILL LIVING BASED ON CERTAIN FOSSILS
AND/OR BIOMOLECULAR CLOCKS**
IN USE TODAY

Cyanobacteria	Spirulina
Rhodophyta (Mesoproterozoic: 1200 MA)	Porfira, Gelidium, Chondrus
Chlorophyta s.l., Lichens	Chlorella, Iceland moss (Cetraria islandica)
Equisetaceae, Lycopodiaceae	Equisetum, Lycopodium
Cycadales	Cycas
Cupressaceae, Pinaceae (Pinus from the Cretaceous)	Cupressu, Juniperus, Sequoia, Pinus
Ginkgoaceae, Taxaceae, Pheophyceae	Ginkgo, Taxus, Fucus
Polypodiales, Ephedraceae, Illiciaceae, Lauraceae, Hamamelidaceae, Betulaceae, Clusiaceae, Theaceae (?), Faboideae, Mimosoideae, Caesalpinoideae, Myrtaceae, Ericaceae, Rosaceae, Rhamnaceae, Sapindaceae, Euphorbiaceae, Visceae, Apiaceae, Arecaceae	Polypodium, Ephedra, Laurus nobilis, Cinnamomum, Hamamelis, Illicium verum, Betula, Hypericum, Camellia, Tamarindus, Glycine, Glycyrrhiza, Melilotus, Acacia, Eucalyptus, Myrtus, Eugenia, Vaccinium, Crataegus, Frangula, Aesculus, Ricinus, Viscum, Pimpinella, Foeniculum, Areca
Myristicaceae, Cannabaceae, Polygonaceae, Tilioidae, Malvoideae, Salicaceae, Passifloraceae, Linoideae, Nepetoideae, Mentheae, Ixoroideae, Cinchonoideae, Valerianoideae, Asteraceae, Poaceae, Zingiberoideae, Acoraceae	Myristica, Cannabis, Humulus, Rheum, Tilia, Malva, Althea, Salix, Passiflora, Linum, Salvia, Rosmarinus, Lavanda, Mentha, Coffea, Cinchona, Valeriana, Grindelia, Chamomilla, Cichorium, Taraxacum, Saccharum, Zingiber, Elettaria, Amomum, Acorus
Solanoideae, Nolinoideae	Atropa, Datura, Dracaena







The mortar room

The tour begins in the mortar room, dedicated to the apothecary's most ancient and indispensable instrument, which has always held a strong practical and symbolic significance for pharmaceutical art. It exhibits fine workmanship, including examples of stone, iron, wooden and ivory mortars, demonstrating the technical and artistic development of the instrument. But bronze was the alloy that represented the ideal material for apothecaries: tough, dense, non-porous, so that the ingredients within were not absorbed when crushed.

The simplicity of the early work mortars, made of stone or iron, stands in contrast with the decadence of the personalised and decorated examples commissioned by more ambitious pharmacists. The shape remained unchanged until the 14th century, when the decorations were exclusively made up of vertical ribs and simple knobs. It is in the 16th century that the mortar becomes a fine work of art, with floral embellishment appearing on surfaces at the end of the 18th century. We discover that, had the moulds been adapted, the system of casting mortars could also have been used in bell founding.



The use of medicinal plants in ancient civilisations

MESOPOTAMIAN CIVILISATION

In ancient Mesopotamia, where the Sumerians, Assyrians and Babylonians lived, a great civilisation based on natural resources, agriculture and trade developed. The Hammurabi Code, named after the king of Babylon who ruled in c. 2000 B.C., is the first written document that recognises the profession of the physician. Around the 7th century B.C. King Ashurbanipal collected in the library of Nineveh thousands of *ostraka* (clay tablets), a large number of which are dedicated to medicine. The recipes list 250 plant substances, including liquorice, anise, myrrh, poppy, Indian cane, black hellebore, castor-oil and opium.



Papyrus of Ebers, 1150-1146 B.C.

EGYPTIAN CIVILISATION

In the *Odyssey* Homer stated that Egyptian doctors were "more skilled in medicine than any of humankind". The preservation of numerous papyri has allowed us to learn about medicine and surgery as practiced by the peoples of the Nile and the study of mummies has given us a precise picture of the diseases and their relative treatments. Several papyri, dating from around 1900 B.C., discuss medicine and veterinary medicine, prescribing empirical formulas for treatment: they are the Treatises of the Vessels, in which the heart is at the centre of the vascular system. The Ebers Papyrus and the Smith Papyrus (ca. 1650-1550 B.C.) list numerous plants for medicinal use. Aloe, mandrake, opium, senna, castor-oil, and thyme are just some of the 500 healing plants mentioned.



Date palm, Tomb of Pashedu, 19th dynasty, Luxor

INDUS CIVILISATION

The most ancient civilisation in South Asia developed along the valley of the Indus River. Indian medicine developed from 2000 B.C. and continued its evolution in the Vedic, Brahminic, Buddhist and Hindu periods. The first texts mentioned belong to the Ayurveda, the health books, that deal with the philosophical and psychological aspect of diseases and indicate the practical aspects of the cures. The Sanskrit work *Charaka Samhita* speaks of many plant remedies including a Hindu drug derived from the root of the plant *Rauwolfia serpentina*, which would be the source of the first modern tranquilliser. The work *Sushruta Samhita* (c. 700 B.C.), which lists 760 medicinal plants and drugs, names opium, cannabis, cassia, aconite, pomegranate, castor-oil, black hellebore, cinnamon and ginger.



Ayurveda, the Indian health books, 2000 B.C.

CHINESE CIVILISATION

In China, medicine practiced at the time of the ancient dynasties was ancestral and shamanic in nature. In the first millennium B.C. acupuncture and the empirical use of plants spread, together with the theories of Yin and Yang. The emperor Shen-Nong was its master, author of the *Pen-t'sao Ching*, a crucial treatise featuring 350 herb-based recipes, first handed down orally and then printed and illustrated. The Chinese knew the unique therapeutic virtues of ginseng as an aphrodisiac and restorative remedy. Liquorice, artichoke, chelidonium, rhubarb, pomegranate, saffron, colchicum, lichen and parsley were also known. Marco Polo, in his work *Il Millione* or *The Travels of Marco Polo*, would testify to their ancestral knowledge of the properties of aloe.



Portrait of Emperor Shen-Nong, around 2800 B.C., tasting a medicinal plant

GREEK CIVILISATION

Several Hellenic philosophical schools dealt with medicine based on the theory of the four elements developed by Empedocles, Pythagoras and Aristotle. In the 5th century B.C., Hippocrates developed the humoral theory, which marked a fundamental step towards the rational conception of medicine and therapy. The *Corpus Hippocraticum* prescribes a plant remedy for every disease and exalts the healing power of nature: opium, henbane, belladonna, black hellebore and rue are just some examples of the innumerable plants used. Theophrastus in the *Historia Plantarum* (4th–3rd century B.C.) and Dioscorides in the *De Materia Medica* (1st century A.D.) classified plants and indicated their virtues, many of which are still valid today.



The Prince of Lilies (1550 B.C.), Minoan Palace of Knossos, Archaeological Museum, Candia

ROMAN CIVILISATION

Roman medicine developed from the 3rd century B.C. and paid particular attention to public hygiene and military medicine. The new remedies based on medicinal herbs were inspired by ancient traditions and already Cato in the *De agricultura* (3rd–2nd century B.C.) praised the curative use of cabbage, black false hellebore, myrtle and walnut. Pliny the Elder (1st century) dedicated many books of his monumental *Naturalis historia* to medicine and plant remedies, followed by the physicians Asclepiades, Celsus and Antonius Musa, authors of famous treatises. Galen (2nd century) spread the doctrine of the four temperaments (sanguine, phlegmatic, choleric, melancholic) and divided medicinal plants into hot and cold according to the sensation they produced. Chamomile, linen, peony, common hedgenettle, agrimony, absinthe, euphrasia and veronica were, for example, first-degree hot drugs.



The physician Iapyx healing Aeneas' wound, 1st century A.D., National Archaeological Museum, Naples



The history room

Asclepius, Greek god of medicine; Hippocrates, father of medicine; Galen, after whom the art of galenical pharmaceutical formulation was named; Lavoisier, French chemist; Linnaeus, biologist and father of the modern scientific system of classifying living organisms. These are just some of the renowned figures watching over visitors as they cross the threshold. Here begins the specific study subject of the museum: health-giving herbs, set in their historical context. The panels in the room act as a guide on this journey through time, recounting the ways in which humans have used medicinal plants over the centuries, from prehistory to medieval times and from the territorial discoveries of the 15th century to the present day.

The glass cases lining the walls display more valuable herbals adding to the collection in the mortar room, to narrate the technical and scientific progress in creating these masterpieces of knowledge and art.



De Historia Stirpium by Leonhart Fuchs, Basel, 1542

Herbals

The need to draw medicinal plants originated at the same time as the idea of describing them. The illustration made up for any inaccuracy in the text and made it easier to recognise the plants. Illustrated herbals, which combined science, botany, medicine and art, were a guide for physicians and students of the time and were used to identify medicinal plants and memorise their therapeutic properties.

With the advent of printing and the gradual improvement of engraving techniques (from engraving on wood and then moving to copper), herbals began to have an important role in spreading botanical knowledge. In the 17th century, herbals were joined by the florilegia, fine books dedicated to illustrating rare and lush flowers that grew in the most prestigious gardens of the time. The term herbarium has also always had the meaning of a collection of dried plants used for scientific purposes.



History facts

PREHISTORIC PERIOD

Primitive man started by observing nature and using curative herbs intuitively, gradually developing a rational method for their use. Lacking logical answers, though, he attributed their effects to supernatural forces. Plants were often thought of in close connection with divine beings. The first plant experts (shamans) originated in the East.

3500-800 B.C.

The knowledge and wisdom of plants evolved in ancient civilisations. The oral tradition that was the only means of passing down knowledge till then began to be supplemented with written communication (clay tablets, sacred books, manuscripts, mural inscriptions, etc.). A gap begins to develop between the use of curative herbs in a religious setting and their common use.

5TH CENTURY B.C.

In Greece, sacerdotal or empirical medicine became a science thanks to Hippocrates of Kos and his school. The formulation of humorism, the principle of holistic diagnosis, the deliberate choice of natural medicines and the implementation of dosage marked the beginning of allopathic medicine.

1ST-2ND CENTURY A.D.

In Rome, two figures emerge, Dioscorides and Galen, who remained the undisputed authorities right up to the medieval period and beyond. Dioscorides catalogued the healing properties of plants in an organic fashion, and Galen introduced the experimental and analytic method, the concept of complexion in humorism and compound preparations.



Asclepius, god of medicine



*Pedanius Dioscorides, Greek physician and botanist,
1st century A.D.*

8TH-11TH CENTURY

Monks were given the responsibility for taking care of sick people. Monastic medicine developed. The large abbeys had their own infirmaries, pharmacies and medicinal gardens with herbs or simple medicaments (*Hortus conclusus*). The Arabs inherited and built on the Greek medical tradition, popularising it in the West.

10TH-13TH CENTURY

The Salerno Medical School was a happy convergence of medical cultures in the non-religious sphere. In fact the Latin tradition was grafted onto the Greco-Oriental one, which the Arabs had restudied and interpreted. An interest in dietetics and hygiene made knowledge in the field of plant-based therapy complete.

12TH-13TH CENTURY

The crusades, the birth of the Maritime Republics and the resulting new trade — with Europe on the one hand and with Africa, the Middle East and Asia on the other — created a direct and constant flow of exotic remedies, for example, senna, bezoars and alcohol, which became staple additions to the list of locally produced remedies.

13TH CENTURY

The first Universities came into being. They were cultural centres and although they were permeated with the dogmatism of Aristotle and Galen, they laid the foundation for the development of rational thought in the future, a cause championed by Albertus Magnus. The study of health-giving plants was still central to medicine. A new figure, the apothecary, in charge of making preparations, was born.



Albertus Magnus, 13th century

13TH-14TH CENTURY

Alchemy grappled with the problem of the composition of matter and transmutation of metals. With regard to plants in particular, the effort was concentrated in search of the quintessence (*quinta essentia*) or philosopher's stone, the principle capable of revealing the secrets of matter and substance that was considered responsible for the therapeutic action. The widespread use of alcohol makes it possible to extract substances more efficiently.

14TH-15TH CENTURY

The pan-European character of academic culture favoured the science of medicinal plants. By now the descriptions were accompanied by illustrations (*herbaria*). Treatment with herbs was often linked to the doctrine of signatures, in which the shape, colour and flavour of each plant species showed which organ or illness it could cure.

15TH CENTURY

The invention of the printing press resulted in knowledge of herbs being spread in learned circles throughout Europe. Formal use in academic medicine contrasted with empirical use in folk culture, where new, often misunderstood figures (witches, charlatans and barber surgeons) emerged.

LATE 15TH CENTURY

The discovery of America in 1492 opened up new horizons in the study and use of new curative plants which, with the help of the reports from missionaries and botanical explorers, were carried from traditional American medicine into European therapeutic use. Some species such as quinine became very important.

16TH CENTURY

Many scholars (Fuchs, Dodonaeus, Mattioli, etc.) committed themselves to commenting on the classical medicinal plant texts used until then. Universities set up herb gardens (*Orti dei semplici*) in order to study live health-giving plants (*Ostentio simplicium*). Luca Ghini conceived the idea of dried herbaria (*exsiccata*) made by some of his students, including Andrea Cesalpino.



Pietro Andrea Mattioli, 16th century

16TH-17TH CENTURY

Pharmaceutical prescription books and “antidotaries” began to spread and were published, describing and classifying the colourful world of formulae. Approved by civil authorities, they gave rise later to pharmacopeia, official normative texts of different countries whose purpose was to ensure that medicines were effective and correctly made up.

17TH CENTURY

The experimental method was born, the prelude to the scientific revolution of the following century. For therapeutic purposes, there is a need to systematically catalogue plants, understand their composition, arrive at the identification of active substances and make their activity constant and uniform.



Leonhart Fuchs, 16th century

17TH-18TH CENTURY

Naturalistic studies of plants became more important than their medical applications. Botany, for many thousands of years studied as a part of medicine became a natural science in its own right. Linnaeus introduced a system of plant classification based on the floral structure and the binomial naming system that is still used today.

17TH-18TH CENTURY

Starting with Paracelsus, spagyria, the successor of alchemy, was transformed into iatrochemistry, a science that links physiological and pathological processes exclusively to chemical processes. The seeds of structural and chemical research were sown, leading to the demise in the use of plants.

19TH CENTURY

At the beginning of the 19th century, "cell theory" was introduced to biology (although the cell had been known for about two centuries) and the active ingredients of plants were successfully isolated in the field of chemistry. The first substance to be isolated was morphine in 1805. Others such as quinine soon followed.

20TH CENTURY

Modern chemistry was responsible for isolating and copying individual plant molecules, later synthesising them industrially. This led to several problems with production, mainly the possibility of patenting the synthetic substances and not the natural ones.

THIRD MILLENNIUM

Humankind cannot survive if it continues in its effort to overstep biological laws. And it is thanks to this new awareness that research is opening up new, modern vistas on medicinal plants (hard to patent) as opposed to genetically modified products (patentable).



Carl von Linné (Linnaeus) 18th century



Antoine-Laurent de Lavoisier, 18th century



The pottery room

The third room is completely dedicated to the display of pharmaceutical pottery, refined artefacts which come above all from the various manufacturing centres in Italy. Vases, jugs and “albarelli” jars from various centuries and locations bear witness to the technical refinement and aesthetic developments in the art of pottery and majolica. Technical refinement was required to produce a material that could ensure the preservation of medicinal substances and aesthetic developments reflect the desire to create artistic vases that could be displayed.

Beautiful, coloured decorations with heraldic symbols, friezes, flowers, plant motifs and epic and religious figures make each majolica a genuine work of art and the scrolls with apothecarial inscriptions lend the items a mysterious charm. Developments in manufacturing and decorating techniques made products from the Mediterranean basin prized, and those from Italy in particular. Production in Faenza was renowned, giving its name to glazed pottery everywhere (faïence). Ceramic was the perfect material from a technical and artistic perspective. It was waterproof due to vitrification and bright thanks to tin oxide, which brought out the surface decoration with remarkable artistic effect.



The Salerno Medical School (9th-15th century A.D.)

The Salerno Medical School collected several traditions from the past such as the Greek, Latin and Arab ones, blending them into a single “culture”. It is the oldest and best known medical institution in the medieval western world. The study of medicinal plants was given a place of prominence, as they provided the cure for every type of illness. The school’s concepts are collected in the *Regimen Sanitatis Salernitanum* (The Salernitan Rule of Health) a text containing medical literature and popular wisdom, inspired by the virtues of herbal medicine and the rules of dietetic, physical and moral hygiene.

The trust placed in the therapeutic power of plants was remarkable and was embodied in the concept: “*Contra vim mortis non est medicamentum in hortis*” (Only against the power of death can herbs offer no medicine). The most famous representative of this school was Matteo Silvatico (1285-1342), while the famous Spanish physician Arnaldus de Villa Nova believed that it was absolutely essential for him to go to Salerno to deepen his knowledge.

Weighing scales

Weighing scales were an indispensable tool in the preparation of herbal medicines – the art of the apothecary called for precision. The oldest known weighing scales date back to 3000 B.C. The basic structure of this tool, with its dishes and beam supported by ropes, remained unchanged until the 1st century B.C. when the Romans introduced a metal version. This was a scale with two arms of equal length. Different models existed, such as market scales, scales for weighing ingots, for precious stones, cereals, letters, as well as laboratory scales.

Until the 19th century, weighing scales were predominantly hanging, fixed or manual, but from the mid-18th century, use of chemicals made greater precision necessary. And so the column scale appeared, as well as the so-called 'cased' scale, which was designed to protect measurements from dust and movement caused by air currents.



Convent scale with wooden drawers and marble plinth with crowned coat of arms. Tuscany, 16th century



Equal arm beam scale, 18th century



Pile of weights with incised units. Germany, 16th-18th century



The glassware room

Blown glass, so light and easy to shape, has always lent itself to the production of pharmaceutical equipment, including many instruments for the laboratory. The light, shapely items in this room owe these qualities to the material they are made of according to the ancient method of glass production, essentially consisting of sand combined with the ashes of plants such as *kali turgidum*, ferns and *salicornia*. Italy, and in particular Venice, have been important global centres for glass art since medieval times. In the past, glass was only used for utilitarian purposes: it was used to make the containers for medications in the ancient apothecary shops and the instruments with which first alchemists and later chemists sought to extract the active ingredients to cure the sick from the simple substances in their laboratories.

This room holds items such as retorts, phials and tools for distillation, as well as unique objects that are not strictly linked to pharmaceutical instruments: a urinal, a collection of breast pumps, a collection of vessels and instruments for incisions and bloodletting. It is also possible to admire a collection of rare portable wooden pharmacies, used by doctors and apothecaries to transport their precious medications.



Leonardo da Vinci and plants

Leonardo claimed to be "an enemy of alchemists, necromancers and other simple fools" and rejected remedies "made from types of alchemy", but recognised its use for distilling herbal extracts: "ufficio che fatto esser non può da essa natura".

He knew and tried many medicinal plants including turmeric, aloe, galls, saffron, arum lily, poppy flowers, cornflower, broom, chelidonium, mustard seed oil, linseed oil, amber and turpentine.



"To make a good smell take rose water and soak your hands in it. Then take lavender flowers and rub them between your palms. It will have a good perfume".
Codex Atlanticus, folio 807r, vol. III

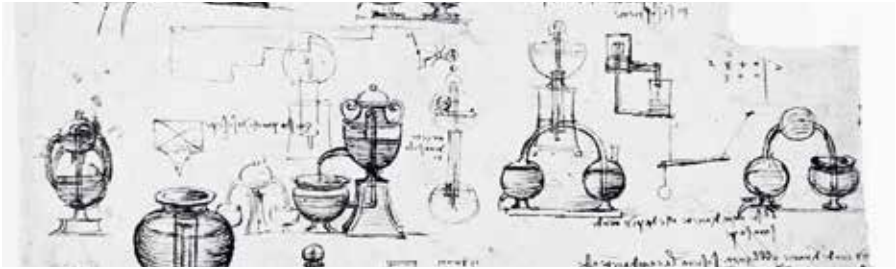


(A ffare odore:
Tò buona acqua rosa e mòllatene le mani; di poi toglì del fiore di spigo e fregatelo fra l'una mano e l'altra, ed è buono).



"To break up a stone in the bladder take hazelnut tree bark date seed and saxifrage with nettle seed, in equal parts. Grind it to a fine powder use it in your food as would a spice or in syrup with warm white wine otherwise with asparagus or hops or cooked red chickpeas".
Codex Atlanticus, folio 729v, vol. III

(A rompere la pietra in nella viscica
*Piglia scorza d'avellano Ossa di datteri e sassifraga, semenza d'ortica, tanto dell'un quanto dell'altro
E di tutte fa polvere sottile, e questo usa in vivanda a uso di spezie.
O voi la mattina a uso di siloppo con vino bianco, tiepido
Ancora: sparagi o livertige o cocitura di ceci rossi).*



"Sleep inducing smoke take the seed of ryegrass
let it rest in spirit of wine in cotton wool, henbane oil,
fuller's teasel the seed and root
of aconite dry everything
and powder it with camphor and it is done".

Codex Atlanticus, folio 950r, vol. III

*(Il fumo detto alloppiativo. Togli seme di loglio.
Riparo: odor'acqua vite in bambagia, olio di dente
cavallino, di labbra. Seme e radice di mappello,
e secca ogni cosa e fa polvere e 'ncorpora con
canfora, ed è fatto).*



"To make perfume: Take
water and put any aromatic
plant that you want, It will
store and preserve it within".
Codex Atlanticus, folio 195v,
vol. IIII

*(A ffare profumo:
Togli acque arzene e mettivi
di qualunque odore tu vuoi.
Ella lo riserba e tiello in sé).*



"Compound syrup of lavender
Recipe: elder flower water endive,
maiden hair fern and freely mix
Recipe: keep it three days with 5 times
the amount of French lavender and it will clear".
Codex Atlanticus, folio 1046, vol. III

*(Sciropo composto di stechade:
R[ecipe] Aquarum florum sambucj,
endivie, capilven[ere] an. Libr. J, misca.
R[ecipe] sy (o 5y) de stichados 3jjj et clarificetur).*





The herb room

This room, which replicates an historic storeroom from the 16th century, is certainly the most evocative of the whole tour. The medicinal plants, in their many colours and with their intense, penetrating fragrances, are hung from the ceiling away from direct light, allowing them to dry correctly and keep their physical and chemical properties intact. Before being used, they are then stored in dedicated containers, such as willow baskets or fine aromatic wooden boxes to best protect the precious contents from bacteria and insects, before becoming health-giving preparations.

The herbs, from the hills around Sansepolcro, have been harvested in keeping with their “tempo balsamico”, the time of year when they contain the highest concentration of active ingredients.

If we stop to admire the baskets, scales and other historic equipment used for collection and storage, we can see in our mind’s eye the medieval harvesters setting out at nightfall to look for medicinal herbs, who were often believed to be witches because of their extensive knowledge of healing. Or we might see medieval monks devoutly cultivating “simples” in the cloister gardens, following the meticulous instructions of the historic pharmacopoeias, which set down the rules for gathering the various parts of the plant, the criteria for selecting the best species and the best astrological conjunction for harvesting.

Mankind and medicinal plants

The knowledge of how to collect, process and use curative herbs was a precious legacy. When it was passed down orally, it gave the healer power and at times even wealth. One of the most jealously guarded secrets involved the (often ritualistic) place, time and techniques of harvesting herbs that were used for specific illnesses.

It was a gift that was often practiced in marginal areas, taking on the connotations of a magical activity and, since the 6th century, it was fought by rulers, because it was considered dangerous.

This occupation was essentially carried out by women and many women healers ended up being considered “witches” during the Inquisition. Nevertheless, the role of medicinal herbs has been kept alive in all local traditions and has been essential to human health up until the present day, despite the fact that the current scientific manner of use makes it harder to see its natural characteristics and healing power.

The mandrake gathering

To grasp the mandrake dig around the plant, then take a rope, tie a head at the root of the plant and the other to a dog.

Then call the dog so that coming towards you he tears away the root.

Be careful to do so in full moon nights having care to plug the ears well, not to hear the piercing scream the plant will emit at the time of the tear.

The gathering of cyclamen

To heal the pains of the spleen whole cyclamen tubers are collected on the last Thursday of the entire lunar cycle. Then you go on the threshold of the room where the sufferer lays and there you cut them into three slices by asking him:

“What do I cut?”

And he must answer: *“My spleen”*. After which you place the slices of cyclamen on the affected part and say:

“As the pieces of this cyclamen will dry up, so it will dry the spleen of this patient”.

The harvesting of chamomile

Chamomile, a great medicine for sick eyes, is always harvested before sunrise, first saying this prayer:

“I take you, grass, for the white nubecula of the pupil and the eye pain, so that you can lend assistance.”

Afterwards it is worn around the neck.





The historic apothecary shop

Here, visitors are catapulted back to the 17th century into the apothecary's shop-cum-laboratory, where natural medicaments were prepared and sold, and where gatherers of herbs, pestle makers, apothecaries, doctors, the sick and those who worked to extract the "fifth essence" gravitated.

This kind of shop, which emerged in the early Middle Ages in monasteries before arriving at the courts of princes, is home to an imposing collection of apparatus: the fixed terracotta oven, the large portable stills, the serpentine, the presses, the mortars and the collections of containers for raw materials are just some of the articles that furnishing this industrious environment.

In a niche, hidden from visitors, we find the *res pretiosae* - the more costly and elusive products, such as viper fat, certain poisons and Falerno wine, which required specific storage and careful use.

A stuffed crocodile above the fixed oven represents plant fertility, an auspicious symbol for the work of the apothecary and an emblem of journeys to distant lands to procure the most precious ingredients.

Pharmaceutical forms found in 1600

LIQUIDS

Simple distilled waters

Phlegmatic distilled waters

Alcoholic distilled waters

Compound distilled waters

Elixirs (or pure quintessences)

Sulphureous spirits (plant extracts)

Mercurial spirits (plant and animal drugs)

Distilled oils

Pressed oils

Oil infusions or decoctions

Simple tinctures

Compound tinctures

Liquors (liquid salts by deliquescence)

Simple syrups

Compound syrups

Juleps

Simple honey syrups

Compound honey syrups

Robs and Sapas

Hydromels or water

Emulsions

Simple medicinal wines

Compound medicated wines

Medicated vinegars

Liquid syrups

Infusions and decoctions

Beverages and potions

Emulsions

Epithemes

Gargarisms

Enemas

Baths, scrubs

SEMISOLIDS

Concentrated syrups

Simple blood purifier extracts

Laudanum opiates, simple and compound purgatives

Simple perfumed salves

Compound perfumed salves

Electuaries

Linctuses or Lohocs

Gelatines

Conserves

Syrups

Liniments

Ointments

Poultices

SOLIDS

Pills

Troches

Dry collyria

Pomanders and scented pastes

Masticatories

Preserves

Syrups

Plasters, wax plasters, cerecloths, vesicants, mustard plasters

Suppositories, pessaries and perfumed soaps

Spices, powders and granules/dragees

Flours and starches

Magisteries

Flowers

Salts

Source: Theatro Farmaceutico, 1667

At the dawn of mankind's existence, medicinal herbs were eaten as they were or prepared very simply by crushing them or grinding them with water, milk, wine, vinegar, oil or animal fat.

The next step in improving extraction techniques came with the use of fire and metal implements.

The discovery of alcoholic distillation around the 10th century A.D. led to the possibility of transforming herbs into increasingly elaborate and sophisticated derivatives. In this regard, suffice it to recall the importance of spagyric medications: they were the result of long preparations in which all the active ingredients present in the plant were separated, combined, concentrated, purified and strengthened in order to be used for therapeutic purposes.

The quest for "first rate drugs" continued to obsess man. Over the centuries it led to combining herbs with many other substances of mineral or animal origin, including excrement.

The development of alchemy, with the creation of properly equipped laboratories helped to improve a number of extraction techniques, although the objective of this science was often very different, for example the endless search for the legendary philosopher's stone, which was considered an "elixir of long life" and a cure-all.



Family register of Basel pharmacist H.F. Eglinger, Pharmacy Museum of the University of Basel, Basel, 1630

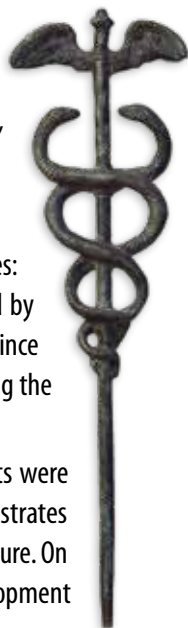


The phytochemical laboratory

The phytochemical laboratory provides an insight into a crucial period in pharmaceutical history, the 19th century, with the transition from the ancient art of the apothecary to the modern day: medicines are now predominantly made from synthetic inorganic raw materials. The display cases feature “modern” instruments that are used to mass produce pills, syrups, ointments, liniments and tinctures, troches and salves.

The laboratory demonstrates how the instruments changed in line with new discoveries: the bulky apparatus for the chemical transformation of ingredients is replaced by delicate scales and glass stills and jars, required for the mechanical final touches, since the task of the pharmacist was now essentially that of analysing and compounding the magisterial preparations.

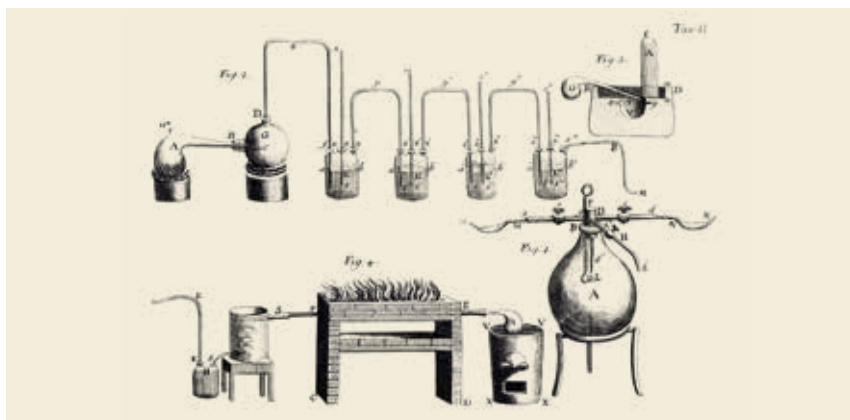
The raw materials were no longer a work of craftsmanship, since the ingredients were prepared by industrial laboratories. The isolation of plant active ingredients illustrates humanity's desire to manage their mechanisms and overcome its dependence on nature. On the walls, two splendid medallions attest to the importance of the study and development of new pharmaceutical techniques.



The last decades of the 18th century were marked by the work of the French scientist Antoine-Laurent de Lavoisier (1743-1794), who laid the foundations of modern chemistry. A series of discoveries changed the face of pharmaceuticals in the 1800s. Among these were the advent of plant products such as quinine, caffeine, morphine, codeine, salicine (the basis of the well known aspirin) and synthetic inorganic products such as chloroform, iodine, bromine and magnesium citrate.



The phytochemical laboratory symbolised man's intellectual and existential struggle, given his obsession with dominating nature and her physical and chemical laws. This attitude was the result of philosophical presumption. Man thought he could possess not only the tools that control life, he also thought he could gain a quantity of increasingly sophisticated and unobtainable information, derived from alchemical and iatrochemical studies that would reveal the "secret" properties of remedies. In the specific case of medicinal plants, isolating the active ingredients and the ability to manage the way they work is part of the arrogance of mastering how nature works and overcoming our dependence on it. It is a process that, if taken to the extreme, can go so far as to seek to dangerously violate the boundaries of the very laws of nature.





The poison cellar

"Cave atra venena!", "Beware deadly poison!"

This phrase greets visitors at the end of a short, narrow corridor separating the phytochemical laboratory from the last room in the tour, leading into one of the museum's most memorable rooms: the poison cellar. It is guarded by a wrought iron gate and is dedicated to safeguarding the true science of the pharmacist. It keeps all those potentially toxic and poisonous products that could be dangerous in the wrong hands under lock and key. Only the pharmacist has the knowledge to be able to dose precisely enough to make even the most powerful of poisons a remedy.

In this small, isolated room, visitors are warned of the need to be careful through Latin mottoes and phrases, as well as through many symbols of death, to discourage even the most reckless of customers: skulls, snakes and the thick metal gates featuring a gape-jawed viper combine to keep its precious and perilous contents safe. The symbolism of the viper is ancient: viper flesh was already the main ingredient of the famous *Theriaca Andromachi* (*Andromachus Theriac*) which was originally considered a powerful antidote to every kind of poison, but soon became the closest medicinal preparation in the ancient world to the concept of a panacea, a medicine that could cure all ills.

HISTORICAL-PHILOSOPHICAL TOUR

Thanks to the pharmacist's science and great expertise, these dangerous substances can become health giving medicines when they are given in infinitesimally small doses or transformed into precious antidotes.

The famous king Mithridates VI, who took small doses of poison to protect himself against poisoning, developed immunity to the poison, a condition known as mithridatism.

The Greeks made poison from hemlock for those condemned to death, as the well known story of Socrates tells us. Literature is also full of famous episodes related to the use of poison. For instance, Shakespeare used the idea of poisons to create an intense dramatic atmosphere. Hamlet's father was killed by henbane juice poured into his ear and Romeo obtained a lethal drug from the apothecary to kill himself on Juliet's tomb. Poisons must be preserved with the greatest of caution. This is why apothecaries were accustomed to keeping them in a separate locked place, a legal requirement of all Italian pharmacies even today.



The small door

There is always a door in the pharmacy between the sales room and the laboratory. It is often low and narrow, and sometimes it is camouflaged artistically between the medicine shelves. This door marks the boundary line for the public and protects spaces behind it, giving them an aura of mystery and wonder.

It is behind this door that the knowledge of the pharmacist comes into its own. In academic or business establishments, a door always separates shared spaces from special ones reserved for associates. In these cases, the door is narrow, reminding us how hard it is to achieve knowledge. The spaces beyond the door are exclusive and accessible only to those with knowledge. Here science, and the sciences, affirm their dominion.





The 19th-century pharmacy

A small door leads to the authentic 19th-century pharmacy, made simply and functionally of pine wood. The shelves display rare collections of French ornamental majolicas, glass jars, ceramic “albarelli” jars, pewter tankards, wooden boxes, precision scales and bottles with the remains of old preparations, all complete with the original explanatory labels. A useful central bench with accurate pharmacy scales allowed the pharmacist to weigh and sell his preparations and medicines.

Some exotic items are an integral part of the furnishings: a fine wooden sculpture of an oriental merchant weighing spices; a crocodile and a turtle shell that remind us of the presence, however marginal, of medicines of animal origin.

Two sentences visible high on the walls summarise the purpose and philosophy of the museum, inviting visitors to reflect on the future of man and the need to commit ourselves to research and study in the field of medical botany: “Medicinal plants are nature’s gift, created for all living things” and “If man so wants, he can find remedies to all his ills in nature”.

FORZA DELLA
CREATA PER TUTTI I VIVENTI



The crocodile and the tortoise shell

Crocodiles and tortoises were often on display in ancient pharmacies. At a symbolic level, the crocodile stands for water and luxuriant vegetation, or plant fertility. In Egypt it was considered the Lord of the mysteries of life and death. In Maya mythology, all plants useful to man sprang from the crocodile's head. The crocodile was considered a useful cure for numerous maladies.

An Egyptian papyrus from 1600 B.C. and another from 1200 B.C. relate a magical therapeutic ritual for headaches: a terracotta crocodile with health giving herbs in its mouth was tied to the head of the patient.

The therapeutic use of tortoise shell was recorded in China in the 3rd century B.C. and continues even today. In the oldest books of Chinese medicine, tortoise shell is a basic raw material of animal origin. According to Taoist tradition, the gelatine obtained from it rebalances the vital Yin and Yang principles of the body. And finally, the healing properties of the tortoise shell symbolise the compassion of animals in human health.





The Bibliotheca Antiqua

The Aboca Museum's Bibliotheca Antiqua, on the third floor of the Bourbon del Monte palace, features a remarkable collection of valuable antique books dealing specifically with the use of medicinal plants over the ages and represents an unparalleled bibliographical heritage.

Each of the 2,800 volumes in the collection offers documentary evidence of the story of humanity and its knowledge of the use of plants for healing, ranging from botany to pharmacology, chemistry and natural science to books passing down their "secret" folk wisdom on medicine and other arts.

The books often feature elaborate iconographic creations and come from different epochs, from the oldest ones at the beginning of the print era to the first decades of the 20th century. The images of plants, indispensable ever since ancient times in the identification of plant species, have gained artistic significance over time. The precision and magnificence used in illustrating the plants is testament to the evolution in the various techniques used to depict them.



The manuscript and printed herbals are texts that contain the names, descriptions, properties and benefits of herbs and plants. The illustrations of the printed specimens are the fruit of collaborations between artists and scientists and often their scientific significance is emphasised by the artistic quality. In other words, this is art at the service of health.

Alongside the herbal botany books, there are many more books on pharmacology, chemistry, medicine and ancient medical secrets that embody centuries of “folk wisdom”.

The Aboca Museum Study Centre boasts a team of experts in botany, pharmacy, medicine, art and bibliology who pursue historical and scientific research into the use and properties of plants in collaboration with several universities.

The volumes in the Bibliotheca Antiqua can only be consulted by appointment for study purposes.



Aboca Experience interactive tour

Aboca Experience is located on the ground floor. This interactive museum tells the story of Aboca, its history, its values and the work it carries out every day. An interactive tour allows visitors to gain further insight into the company: from its organic farming and scientific research using the latest biotechnology, to its production plants, cultural events and publishing house releases.

Touch panels, audio content and digital animations explain how Aboca, a B Corp-certified Benefit Corporation, has always aimed to benefit society and the environment in its work.

The tour therefore encourages reflection on scientific innovation, humanity and environmental sustainability. The five rooms housing the installations allow us to explore and discover the value of biodiversity and the resources that the environment provides for our health.



The shop and bookshop

The tour ends in the shop selling products from the Aboca Group, a market leader in natural therapeutic innovation. With the help of qualified personnel, you can purchase food supplements and medical devices to meet most common health needs. The shop also offers a wide range of museum souvenirs with images from the herbals of the *Bibliotheca Antiqua*, original gift ideas and faithful reproductions of the precious objects preserved in the museum.

In the bookshop, you can find all the books published by Aboca Edizioni, the Aboca publishing house that was created to communicate the company's defining themes to readers. The different editorial lines address the need to reflect more deeply, disseminate and promote ideas of key importance on health, science, history, ecology and nature. Our bookshop features a varied and significant selection of works chosen by Aboca Edizioni.

HOURS

1ST OCTOBER - 31ST MARCH

From Tuesday to Saturday

09.00 - 13.00 / 15.00 - 18.00

Sunday and Holidays

10.00 - 13.00 / 15.00 - 18.00

CLOSED ON MONDAYS

1ST JANUARY - 25TH/26TH/27TH DECEMBER

1ST APRIL - 30TH SEPTEMBER

From Monday to Saturday

09.00 - 13.00 / 15.00 - 19.00

Sunday and Holidays

10.00 - 13.00 / 15.00 - 19.00



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www.abocamuseum.it