AN 18th CENTURY TUSCAN PHARMACY:
ANALYSIS OF THE LIBRARY

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Summary
The archival documents of San Luca Hospital, which has long been the most important welfarist institution of the Republic of Lucca (Tuscany), are stored in the Record Offices of Lucca. The hospital was served by a pharmacy, where the medicaments were prepared for patients and for the needs of other institutions in the city. Three different inventories, dating back to 1719, 1749 and 1784, report on a list of books hosted in the pharmacy. The identification and analysis of the works available in the library have allowed to reconstruct the tendencies of pharmacy thoughts and practices in Lucca during the 18th century. The library of the pharmacy of San Luca Hospital revealed the persistence of ancient medicine and of the pharmacy tradition, based mainly on the use of the simples. However, the influence of iatrochemistry, which following the paracelsian theories contributed to convert pharmacy from a botanical science to a chemical discipline, increased in the second half of the century, when the library was enriched with more recent works. The analysis of the inventories demonstrates the presence of both the galenic-arabic and chemical tradition, therefore reflecting an 18th century pharmacy supplied with a composite literature.

Key words: History of pharmacy; 18th century; library; Lucca; Italy

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Introduction

“The Hospital of the Mercy of Lucca (Tuscany) was founded by the University of merchants of the town shortly after 1260, under the protection of San Luca, and remained under the direction and patronage of the Court of merchants until 1807, when the Court was abolished. The heritage of the Hospital, initially very limited, was constantly increased by the piety of the people, the aid of the governments and, in particular, the financial support of other hospitals and institutions in Lucca1.

The Hospital of San Luca has long been the most important welfarist institution of the Republic of Lucca, where structures with different functions, primarily of the medical and charitable types, were based. As a matter of fact, the hospital was not only a place of refuge for the sick and the infirm, taken care of by an infirmary for men and another for women, but also a place for assistance to the orphans and the needy, who were welcomed in the houses for children and young girls.

Both infirmaries were served by a pharmacy, for the preparation of hospital medicaments. Some substances came from outside the town, others were grown in the garden of simples, which was annexed to the hospital. The pharmacy was directed by an apothecary and the medicaments were administered by the physicians and surgeons to the patients of San Luca Hospital, the Capuchins of San Cerbone convent in Lucca, the poor affected by tuberculosis and the patients of the Hospital of the Incurables2.

The original documents of the Hospital of San Luca are preserved in the Record Offices of Lucca and provide detailed information about the work and organization of the structure, starting approximately from the mid-18th century. The Fund “Hospital of St. Luke” is a documentary heritage of great interest for the study of society and health in modern and contemporary Lucca. The collection contains various documents including statutes, regulations, resolutions, account books, registers and records of the patients admitted to the Hospital. The documents titled Different inventories of the San Luca Hospital 1735, Different inventories 1748 and Different Inventories 1784, 1

2 ASL, San Luca 246 (Libro dei Capitoli); ASL, San Luca 248 (Memorie diverse 1784).
provide information on the books used in the pharmacy in the 18th century. The lists are approximate, as both the titles of books and names of authors are only occasionally reported, and in any case incomplete, or misspelt. In most cases, only the names of the authors, often Italianized, or the approximate titles are listed.

The present paper is focussed on the analysis of the inventories of San Luca Hospital. An identification of the texts is proposed, with the aim of reconstructing the library of the pharmacy and the tendencies of the discipline in 18th century Tuscany.

THE LIBRARY IN THE FIRST HALF OF 18TH CENTURY

The first available inventory reporting a list of books housed in the library dates back to 1718. Several books about pharmaceutics, botany and chemistry are listed, for a total of 23 works. A summary list is reported, which shows only the author’s name or title of the book; from these elements only it is in some cases difficult to identify the precise work.

The first author of the list is Pietro Andrea Mattioli (1501-1578), physician and botanist, whose main work is the Discorsi di Pier Andrea Mattioli sull’opera di Dioscoride (1540), where he concentrated all the herbal knowledge of his time. Mattioli did not only translate the work of Dioscorides, but he also completed it with the results of a series of researches on plants still unknown at the time, transforming the Discorsi into a fundamental work on medicinal plants, which was to become a true point of reference for scientists and physicians for several centuries (fig. 1).

3 ASL, San Luca 272 (Inventari diversi dell’ospedale di San Luca 1735); ASL, San Luca 271 (Inventari diversi 1748); ASL, San Luca 273 (Inventari diversi 1784).
4 ASL, San Luca 272 (Inventari diversi 1735), p.46.
5 The following list is reported as it was written: Mattioli; Dodonei; Opres Bandettario; Castor Durante; Dom. Cabraeo; Mesuê; Antidotario de Sgobis; Antidotario Bucchero; Antidotario Bolognese; Giorgio Melicchio; Giuseppe Donzelli; Imerologio di Mattia Amidei; Dioscoride; Quiercietano; Tomi del Bellis; Gio Artimanno; Antidotario Bergamasco; Detto Romano; Dizionario Farmaceutico del Castelli; Calepino; Chimica delle Meri; detta del Lancelotti; Ganzia dell’Orto. The identification of the books will follow the order found in the archival documents. As it is not possible to infer the edition owned by the library, in the notes the first edition of each work will be reported.
Dodonei is to be identified with Rembert Dodoens, or Rembert Dodonée (1517-1585), a Flemish physician and botanist, who left numerous writings full of observations on medicinal plants, including a *Herbarium* published in 1533 and *Den Nieuwen Herbarius* published in 1543. However, his main pharmaceutical text, titled *Cruydeboeck* (1554), was influenced by that of Leonhart Fuchs, which contained 715 images of plants. Dodonei treated in detail especially the medicinal herbs, which made this work a true pharmacopoeia. The text, translated into French, English and later into Latin with the title *Stirpium historiae pemptades sex* (1583), was at that time one of the most translated books after the Bible, and thus likely to have been available at the pharmacy of San Luca.

The *Opres Bandettario* cited in the list is probably the *Opus Pandectarum Medicinae*, a work by Matteo Silvatico (13th-14th centuries), Magister at the Medical School of Salerno. The *Pandette*, a lexicon of simples, mostly of vegetal origin, is one of the most famous Medieval antidotaries, first edited in Neaples in 1474 and republished several times in the 16th century.

Castore Durante, also known as Castor Durante da Gualdo (1529-1590), was an Italian physician and botanist, whose main work is the *Herbario novo* (1585), a collection of medicinal plants from

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Europe and the East and West Indies. The herbarium is conceived as the continuation and integration of the Discorsi of Mattioli, to which the author added some new species. Basically, the herbarium is a compilation work with little scientific weight, which however had great editorial success, as it presented a rich apparatus of illustrations, which was the main requirement of the new medicinal herbs collectors. The work was in fact re-published in 11 Italian editions and reprints continued even after the author’s death for more than one hundred and thirty years9.

Dom. Cabraeo is to be identified with the Swiss physician and botanist Dominique Chabrey (1610-1667), who edited and published the famous work of Jean Bauhin and Johann Heinrich Cherler titled Historia Plantarum Universalis, considered one of the monuments of 17th century botany. His Stirpium icons et sciagraphia (1666) is nothing more than a reworking and extract of the work of Bauhin and Cherler, remarkable for the herbal novelty they had introduced10.

Mesue the Younger was a Syrian physician who died in Cairo in 1015 at the age of ninety; he is the author of an antidotary, also called Antidotarium Mesue or De medicinis universalibus, a collection of pharmacy recipes. The book, written in Arabic and then translated into Latin, was found in countless manuscripts dating back to the 13th, 14th and 15th centuries, and was an authority until the 19th century11.

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Figure 2 - Table illustrating pharmaceutical instruments from the Universale theatro farmaceutico of Antonio De Sgobbis (In Venetia, presso Paolo Baglioni, 1682). Courtesy of the Biblioteca Medica Interaziendale “P.G. Corradini”, Reggio Emilia

Slika 2 - Prikaz farmaceutskih alata iz Universale theatro farmaceutico Antonio De Sgobbsa (u Veneciji, tisak Paolo Baglioni, 1682.). Biblioteca Medica Interaziendale “P.G. Corradini”, Reggio Emilia
The text of Antonio de Sgobbis da Montagnana (1603-?), owner of the esteemed Ostrich Pharmacy in Venice, the most reliable for the sale of potentious theriac, is to be identified with the Universale Teatro Farmaceutico (1667) (fig. 2). This text can be defined as a real pharmaceutical encyclopedia, a systematic anthology of all the pharmaceutical preparations of his times. The author does not seem to attribute much importance to the Galenic-Arabic tradition, but should be referred to the new spagyric art of Paracelsus12.

Two antidotaries also appear in the list, i.e. an otherwise unknown Antidotarium Bucchero, perhaps to be identified with the Florentine Antidotary, considered the first official pharmacopoeia in the world13, and the Antidotarium Bononiense, written jointly by the College of physicians of Bologna, and whose first edition dating back to 1574 was edited by Ulisse Aldrovandi14.

Giorgio Melichio (16th century), chemist and scholar of the history of pharmacy and medicine, was in charge of the Ostrich Pharmacy of Venice at least from the 1560s until his death in 1585. He was known throughout Renaissance Europe for his magistral preparations, which appear in his antidotary Avvertimenti nelle composizioni de Medicamenti per uso della Speciaria (1573). The richest and most complete reprint of 1720 contains the additions of the new owner of the Ostrich pharmacy, Alberto Stecchini, together with the treaty of Orazio Guarguante on the virtues of theriac. The pharmacy at the Ostrich in Venice was not only a pharmacy like many others, but also a starting point for the training of young people preparing for the profession of pharmacist. Indeed, Melichio devoted much of his life to working with


13 The first edition of the Florentine antidotary appeared in 1498, followed by several other editions in the two following centuries. On this text see: Corradi, Alfonso, Le prime farmacopee italiane ed in particolare dei Ricettari fiorentini. Milano, Fratelli Rechiedei Ed., 1887.

the College of Physicians of the city of Venice in order to promote schools for apothecaries\textsuperscript{15}.

Giuseppe Donzelli (1596-1670) was a follower of Paracelsus and author of the *Teatro farmaceutico, dogmatico e spagirico*, first published in 1667, which collects a number of pharmaceutical recipes, chemical processes and botanical observations. Donzelli was convinced that medicine should be closely linked to scientific research and was therefore a staunch defender of the experimental method and an advocate of the school of iatrochemistry. His main studies were devoted to the integration of medicine and pharmacology with chemistry and botany\textsuperscript{16}.

The *Imerologio* (1643) of Mattia Amidei from Siena is a pharmaceutical treatise about the properties of vegetal and mineral substances; in particular, the text describes the *confettione jacintina*, probably a preparation obtained by hyacinth, one of the most commonly used semi-precious stones of ancient pharmacopoeia, considered very effective for its restorative powers and poison-healing properties\textsuperscript{17}.

Dioscoride Pedanius (40 ca – 90 AD), known for his *De material medica*, a herbal that had a great influence on the history of medicine, could not be missing in the library. This text is the precursor of all modern pharmacopoeias and remained in use, at least until the 17\textsuperscript{th} century, with translations and commentaries\textsuperscript{18}.

*Quercietano* is to be identified with Joseph Duchesne or Du Chesne, also known with the Latin name of Quercetanus (1544-1609), a French chemist and physician, who became royal physician attending King Henri IV. Follower of Paracelsus, Quercetanus was a famous and prolific writer, whose


best known work is the *Pharmacopoea dogmaticorum* (1607), a pharmacopoeia with iatrochemical interest translated into Italian under the title *Le Ricchezze della Riformata Farmacopea del Signor Giuseppe Quercetano Medico, e Consigliere Regio* (1619).\(^{19}\)

*Bellis* could be identified with the 16th century botanist Onorio Belli, who carried out several studies on the Isle of Candia, describing numerous new plant species. His *Epistolae de rarioribus quibusdam plantis Creticis* was edited in the *Rariorum plantarum historia* of Carolus Clusio (1601).\(^{20}\)

Gio Artimanno is the incorrect spelling of Johannes Hartmann (1568-1631), a German chemist who was awarded the first university chair of chemistry in the world; he wrote texts on pharmaceutics, including *Disputationes chymico-medicae* and *Iohannis Hartmanni, medicinae doctoris et quondam chymiatriae in Academia Marburgensi professoris celeberrimi, principumque Hassiae archiatri Praxis chymiatrica*.\(^{21}\)

Other antidotaries are mentioned, i.e. the 16th century *Antidotarium Romanum*, a well-known pharmacopoeia, designed to put order in the extraordinary variety of remedies diffused in that period, and the *Antidotarium* from Bergamo, elaborated by the College of physicians of Bergamo.\(^{23}\)


\(^{20}\) *Rariorum plantarum Historia*... Antwerp, Officina Plantiniana apud J. Moretum, 1601.

\(^{21}\) These works were merged in: D. *Johannis Hartmanni ... Opera omnia medico-chymica. In quibus Praxis ejus chymiatrica, Notae in Basilicam Crollii & Beguinii tyrocinium, Disputationes chymico medicae, Tractatus de opio, Miscellanea medico chymica & Introductio in vitalem philosopham continetur. Partim antheac seorsim impressa, partim vero jamex authoris m.s.s. non dum ante editis collecta, & in unum volumen congesta atque pluribus aucta a Conrado Johrenio. Francofurti ad Moenun: impensis viduae Seylerianae, typis Balthas. Christophori Wustii, Junioris, 1684. On Johannes Hartmann see: Moran, Bruce T., *Chemical pharmacy enters the university: Johannes Hartmann and the didactic care of chymiatria in the early seventeenth century*. Madison, American Institute of the History of Pharmacy, 1991.


\(^{23}\) Also in this case the first edition was published in Latin in 1580. It was later translated in Italian as *La farmacopea o’ antidotario dell’eccellentissimo Collegio de’ signori medici de Bergomo nel quale si contiene il modo di comporre i medicamenti oggidì più usitati nelle spezierie*. In Brescia, Appresso Bartholomeo Fontana 1628. See also: Riva Ernesto, «La Farmacopea Bergamasca del 1580, un vasto repertorio di ricette a disposizione dello speziale», Atti e Memorie Accademia Italiana di Storia della Farmacia IX (1992) 47-54.
The pharmaceutical dictionary of Castelli is most likely to be the *Amalteus Castello Brunonianus* cited in the 1749 and 1785 lists. It is the work of Bartolomeo Castelli (end of 16th century-?), a Sicilian physician who wrote a history of medicine from ancient Egypt to his own times. The main merit of Castelli was to write down the medical terminology, which however resulted rather confused as a consequence of the different contributions over the centuries, including the paracelsian and alchemist tradition. The result of this work is the *Lexicon medicum Graeco-Latinum* (1607), whose first edition was followed by several reprints. The next editions were named *Amaltheum Castello-Brunonianum*, and the text was consulted until the 19th century.

*Calepino* is the name attributed to a series of Dictionaries of the Latin language that were so called by Ambrogio da Calepio, an Augustinian scholar who lived between the mid-15th and early 16th centuries.

The list includes the text *Chimica delle Meri*, the latter being the wrong spelling of Nicolas Lemery (1645 - 1715), who played a leading role in the development of pharmaceutical chemistry, as evidenced by his *Cours de Chimie*, published in 1675. The book had a tremendous success and remained a basic text for at least 100 years. The work fully reflects the structure of the texts of the time: a short theoretical part and a large practical component, consisting of recipes and accounts of experiments for the preparation of medicines.

*Guida alla chimica* (1697) is a work with several alchemic notions written by the chemist and spagiric physician Carlo Lancillotti from Modena (17th century), and cited by Bernardo Ramazzini.

Finally, *Ganzia dell’Orto* is the wrong spelling for Garcia da Orta (1501?-1568), who was a Portuguese physician and botanist, author of an important pharmacological text, which reveals his remarkable knowledge of Eastern

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27 *Guida alla chimica: che per suo mezzo conduce gl’affectionati alle operazioni sopra ogni corpo misto animale, minerale ò vegetabile...* Venetia, Per Iseppo Prodocimo, 1697.
spices and drugs; this work is well-known in the Latin translation *Aromatum et simplicium aliquot medicamentorum apud Indos nascentium historia* (1567).  

**The library in the second half of 18th century**

The inventory of 1718 can be compared with the following two inventories of the 18th century, which refer to the possessions of the pharmacy in 1749 and in 1785 respectively. The former is enriched with various texts: 38 titles are mentioned, and the list remains essentially unchanged in the last inventory available.

With respect to the first inventory some texts are not reported in the two following ones, i.e. the *Pandette*, the *Antidotarium buchero*, the text of Belli and the *Chimica* of Lancillotti; other texts are absent from the list of 1749, but reappear in that of 1785, i.e. the works by Amidei, Hartmann, Garcia da Orta, probably the result of an oversight.

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29 ASL, San Luca 271 (Inventari diversi 1748), pp.73-77 and p.80.

30 ASL, San Luca 273 (Inventari diversi 1784), pp. 137-141. The following list is reported as it was written: Pietro And Mattioli; Dominicus Cabreus; Castore Durante; Calipino; Teatro Farmaceutico di Antonio de Sgobbis; Mesue; Remberti Dedonei; Amalteus Castello Brunonianus; Discordie; Daniello Lodovico commentato da Michele Ettinulle; Antidotario Romano; Pharmacopea dell’Emeri; Pharmacopea Schroderi; Trattato di droghe di Niccolò l’Emeri; Teatro Farmaceutico di Gius. Donzelli; Farmacia Razionale dell’Willis; Antidotario Bergamo; Detto Bolognese; Detto di Giorgio Mellichino; Historia Generalis Plantarum Opera Anonima; Hdriani Amynsicht; Lessico Farmaceutico Chimico di Gio Batta Cappello; Chimica dell’Emeri; Farmacopea del Quercetano; Pharmacopea Poterij; Geoffroj; Farmacopea di Cartheus; Dizionario francese; La Notomia dell’Acqua; Medicamenti posti alla Pietra del Paragone; Io. Friderici Cartheus; Caroli linnaj; Dizionario di James con la Farmacopea; dizionario francese e latino.

31 The following list is reported as it was written: Pietro And Mattioli; Dominicus Cabreus; Castore Durante; Calepino; Teatro Farmaceutico d’Ant de Sgobbis; Tomo di Mesue; Remberti Dodonej; Imerologgio di Mattia Amidej; Amalteus Castello Brunonianus; Discordie; Daniello Lodovico commentato da Michele Ettinulle; Antidotario Romano; Pharmacopea dell’Emeri; Pharmacopea Schroderi; Trattato di droghe di Niccolò l’Emeri; Teatro Farmaceutico di Giuseppe Donzelli; Farmacia Razionale dell’Willis; Antidotario Bergamo; Detto Bolognese; Detto di Giorgio Mellichino; Historia Generalis Plantarum Opera Anonima; Hdriani Amynsicht; Lessico Farmaceutico Chimico di Gio Batta Cappello; Chimica dell’Emeri; Farmacopea del Quercetano; Grazia dell’orto; Ioannes artmannus; Pharmacopea Poterij; Geoffroj; Dizionario; L’Anotomia dell’Acqua; Tometti del Gherli (Medicamenti posti alla Pietra del Paragone, Il Proteo Metalico); Joannej Friderici Cartheus; Caroli linnaj; James Dizionari universale; Detto farmacopea.
The first new author of both inventories is Daniello Lodovico, the Italianized name of Daniel Ludwig (1625-1680), a German pharmacist who wrote the Pharmacopoeia Ludoviciana (1712), which went through a number of editions. The Italian version was commented by Michael Etmuller32.

The above-mentioned volumes by Nicolas Lemery were followed by the Pharmacopée universelle, which appeared in 1697, and the Traité universel des drogues simples (1698) (fig. 3), translated into several languages including Italian; these texts are truly comprehensive works on the pharmaceutical compositions33.

Pharmacopoea Schroderi is the most important 17th century pharmacopeia text produced in Germany, the Pharmacopoeia Medico-Chymica: Sive Thesaurus Pharmacologicus (1644) of Johann Schröder (1600–1664), German physician and pharmacologist34.

Another pharmaceutical text is the Pharmaceutice rationalis (1674-1675) of the English physician Thomas Willis (1621-1675), a work in which the author explained the reasons for the healing actions of drugs, giving accounts of how different drugs act on specific parts of the body35.

The anonymous work titled Historia Generalis Plantarum could be identified with the text published in 1586 by the French surgeon, physicist and botanist Jacques Dalechamps (1513-1588), who collected the botanic knowledge

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32 The Italian edition is Trattato della buona scelta de medicamenti di Daniello Lodovico, commentato da Michele Ettmullero, in Venezia: presso Niccolo Pezzana, 1717. Michael Ernest Etmuller was the son of the German botanist, chemist and physician Michael Etmuller (1646-1683), who collected and published the work of his father and died in 1732.

33 The Italian editions are: Lemery Nicolas. Farmacopea universal che contiene tutte le composizioni di farmacia le quali sono in uso nella medicina tanto in Francia, quanto per tutta l’Europa, le loro virtù, dose, e maniere di mettere in pratica le piu semplici e le migliori: e di piu un vocabolario farmaceutico, molte nuove osservazioni, ed alcuni ragionamenti sopra ogni operazione, Venezia, Appresso Gio: Gabriel Hertz con licenza de’ superiori e privilegio, 1720; Lemery Nicolas. Dizionario o vero Trattato universale delle droghe semplici; in cui si trovano i loro differenti nomi, la loro origine, la loro scelta, i principij, che hanno, le loro qualità, la loro etimologia, e tutto ciò, che v’ha di particolare… opera dipendente dalla Farmacopea universale; scritta in francese dal sig. Niccolo Lemery… e tradotta in italiano, Venezia, Appresso Gio. Gabriel Hertz, 1721.


of his time; or, most probably, with the *Historia generalis plantarum* written by the English naturalist John Ray (1627-1705), whose classification of plants was an important step towards modern taxonomy.\(^{36}\)

*Hdriani Amynsicht* is the incorrect spelling of Adrian von Mynsicht (1603-1638), a German alchemist influenced by Paracelsus, author of several medical works including the *Thesaurus et Armamentarium Medico-Chymicum*. The work opposed a chemical explanation of diseases, and could be the text available in the pharmacy of San Luca.\(^{37}\)

The inventories of 1749 and 1785 also include one of the most important pharmaceutical recipe books of the 18th century, the *Lessico Farmaceutico-Chimico* (1728), in which the Venetian Giovanbattista Capello (?-1764) selects and collects official and popular recipes of the time, and in particular describes the procedures and ingredients necessary to prepare the famous Venetian Theriac, for centuries considered the best universal medicine. The text met a vast fortune throughout the 18th century, with eleven editions until 1792.\(^{38}\)

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The lists report another text of paracelsian tradition, *Pharmacopea Poterij*, to be identified with the *Pharmacopea Spagirica* of Pietro Poterio (1587-1649), who was the first to describe the process of phosphorescence.39

In the *Tractatus de materia medica* (1741) the French physician and chemist Étienne François Geoffroy (1672-1731), who compiled the first chemical affinity table and was an opponent of the alchemic theories, advocated the importance of chemistry as an auxiliary science of medicine.40

An alchemic text treating the properties of water is the *Notomia dell'acqua* (1715) by Dionisio Andrea Sancassani Magati (1659-1738).41

Two volumes followed, which were written by Fulvio Gherli (1670-1735), medical doctor of the Duke of Guastalla and physician in Scandiano: the *Proteo metallico* (1721), a pharmaceutical-alchemical text, in which the author analyses the different transformations of the metals and medicinal preparations, and the pharmacological text *I medicamenti posti alla pietra del paragone*, (1722).42

*Johannej Friderici Cartheus* is the German physician and naturalist Johann Friedrich Cartheuser (1704-1777); in the 1748 list only the name of the author is reported and the text could be the *Elementa chymiae Medicae dogmatico-experimentalis* (1736). The name of Cartheuser is reported twice in the list of 1784 and his first work is accompanied by its title (*Farmacopea*); therefore, in addition to the first volume the library was also provided with the *Fundamenta materiae medicae generalis and specialis*, published in 1749-1750.

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42 Il *Proteo Metallico O sia Delle trasformazioni superficiali de’ metalli, e delle differenti preparazioni de medesimi molto proprie per debellare i mali piu atroci, che il Corpo Umano affliggono, e per iscoprire gli’inganni de’ falsi Chimici. Opera Filosofico-Medico-Chimica*, in Venezia, per Giuseppe Corona, 1721; *I medicamenti posti alla pietra del paragone, o sia una disamina di tutti i rimedi delle spezierie, in cui si scoprono gli errori di molti speciali nel fabbricarli, e di non pochi medici nell’ordinarli, facendosi in tal maniera conoscere la vera idea del medico pratico opera di Fulvio Gherli cittadino modanese*, in Venezia: per Giuseppe Corona, a S. Caterina, 1722.
The merit of Cartheuser consists in having introduced the method of submitting the various substances of materia medica to strict chemical analysis. He analyzed a great number of plants and other substances, and gave an exact account of the elements entering their composition\(^\text{43}\).

The Caroli linnai in the list was probably the well-known Swedish botanist, zoologist and physician Carolus Linnaeus (called Linnaeus) (1707-1778) and the text the *Fundamenta botanica*, in which the author reformed the botanical taxonomy\(^\text{44}\).

Two works of the English physician Robert James (1703-1776) are listed, i.e. the *Dizionario universale*, an Italian translation of his three-volume *Medicinal Dictionary* (1743-1745), and the *Nuova Farmacopea Universale*\(^\text{45}\).

Finally, the library was provided with a Latin and a French dictionary.

**DISCUSSION**

The library of 1718 reveals a composite formation due to the state of the art of pharmacy at the end of the 17\(^{\text{th}}\) century, when the discipline still used the practices of the previous period, mainly based on the use of the simples; however, the influence of pharmaceutical chemistry was beginning to appear.


\(^{44}\) Caroli Linnaei. *Fundamenta Botanica, quae Majorum Operum Prodromi instar Theoriam Scientiae Botanices by breves Aphorismos tradunt*, Amstelodami, apud Salomonem Schouten, 1736. The work is unlikely to have been the *Species Plantarum*, exhibentes plantas rite cognitas, ad genera relatas, cum differentiis specificis, nominibus trivialibus, synonymis selectis, locis natalibus, secundum systema sexuale digestas, 1753, since this was published after 1748, the year of the second inventory.

\(^{45}\) The original work of James is the Dictionary including the pharmacopeia: *A medicinal dictionary, including physic, surgery, anatomy, chemistry, and botany, in all their branches relative to medicine; together with a history of drugs, an account of their various preparations, combinations, and uses; and an introduction preface, tracing the progress of physic and explaining the theories which have principally prevail'd in all ages of the world*, London, T. Osborne, 1743-45. This text was translated into Italian, by separating the Dictionary from the pharmacopeia, but as they are both posterior to 1748, the Library probably owned the original English text: *Dizionario pratico-medico e cerusico portatile: o sia compendio dell’intera pratica medica e cerusica del dottor James*, Venezia: per Giambatista Pasquali, 1753. Nuova farmacopea universale del sig. Roberto James f.d. tradotta dall’idioma inglese nell’italiano, Venezia, per Niccolo Pezzana, 1758. On Robert James see: Stine, Lulu, «Dr. Robert James, 1705-1776». *Bulletin of the Medical Library Association* 29/4 (1941) 187-198.
First of all, the persistence of the ancient medicine and pharmacy tradition well explains the presence of a large number of herbaria and *historiae plantarum* in the library; some of these works are catalogues of plants, others are richly illustrated texts. In the pharmacy of San Luca Hospital ten works of this kind are mentioned. Some classical texts are related to ancient medicine, such as the work of Dioscorides and the texts of galenic influence, such as the *Pandette* of Matteo Silvatico. An important factor of 16\textsuperscript{th} and 17\textsuperscript{th} therapeutics was the introduction of many new substances from the new world. As the Greco-Roman and Arabic books had not illustrated the new substances and their specific actions, the preparation of an updated text on materia medica was necessary. The pharmacy of San Luca Hospital was provided with works dating back to the 16\textsuperscript{th} century, such as *I discorsi* of Pietro Mattioli, the *Herbario nuovo* of Castore Durante, the texts of Rembert Dodoens and Garcia da Orta, and several more recent texts, in particular those of Castor Durante da Gualdo, Dominique Chabrey, Pietro Castelli and Onorio Belli. These works well illustrated the vegetal substances discovered outside the Old World and entered in use in the pharmaceutical compositions.

Several texts are specifically addressed to those who practiced the profession of apothecaries and consist of compendia of drugs and antidotaries, that every pharmacy had to keep at home or in the shop. The tradition of professional manuals started in the 15\textsuperscript{th} century with the production of guides to the practice of pharmacy, in which the author explained how to collect, prepare and preserve drugs, using an appropriate language\textsuperscript{46}.

The *Antidotarium* of Mesue represented a forerunner in this field and became the basis of later official pharmacopoeias\textsuperscript{47}. This tradition reached its apex in the 17\textsuperscript{th} century with the work of De Sgobbis, which contained all the instructions to manage a pharmacy and described all the pharmaceutical processes and apparatuses. Furthermore, a new literary genre appeared, namely pharmacopoeia, a first example of which is the Florentine antidotary. After this work other Italian cities followed the example of Florence by producing their own antidotaries, not written by a single author, but compiled by a committee of physicians and apothecaries by order of a government.\textsuperscript{48}

Several works of this nature are mentioned: the *Antidotarium Bucchero*, the


Antidotary of Bologna, the text of Giorgio Melichio, the Antidotary of Bergamo, the Roman Antidotary and the text of Mattia Amidei.

The criticism against the Galenic and Arabic tradition which developed during the 16th and 17th centuries weakened its supremacy in the practice of medicine and opened the way to other theories and trends, reflected by a varied literary production⁴⁹. The great changes in medical thought also influenced therapy and are reflected in the practice of pharmacy. The 17th century was characterized by new philosophical doctrines, Empiricism and Rationalism, which replaced Medieval dogmatism. The experimental method influenced medicine, with the development of iatrochemistry, which followed the thought of Paracelsus (1493-1541) and interpreted the biological phenomena from a chemical point of view. Paracelsian practical alchemy, especially herbal medicine and plant remedies, has been named spagyric, indicating the production of herbal medicine by alchemical procedures. The words “alchemy” and “chemistry” were used interchangeably during most of the 17th century; a rigid distinction between the two was only drawn in the 18th century. The aim of alchemy had originally been the transformation of metals, in particular their transmutation into gold; alchemy, practiced mainly during the Middle Ages and at the beginning of the Modern Age, gradually faded and was taken over by chemistry, aimed at the preparation of medicaments⁵⁰.

The paracelsian theories contributed to convert pharmacy from a botanical science to a chemical discipline. Iatrochemistry tried to interpret the physiological and pathological phenomena through the exact sciences, with objective measurements and experiments. Paracelsus introduces the concept of quintessence, which can be interpreted as the modern active principle; the aim of the pharmacist was not to compose, but to extract. Paracelsus continued to use many herbal drugs, but he was mainly interested in chemical preparations⁵¹.

The rest of the works housed in the pharmacy of the San Luca Hospital belong to modern medicine and iatrochemistry. Some texts belong to the genre of antidotaries, like those of De Sgobbis, Giuseppe Donzelli and

Joseph Duchesne, which were more specifically referred to paracelsian theories. Other texts showed a marked chemical approach, like those of Giuseppe Quercetano, Johannes Hartmann, Nicolas Lemery and Carlo Lancillotti.

In the second half of the 18th century the library was enriched with several new texts, reflecting the recent tendencies of pharmacy. The botanical section was updated by the anonymous *Historia Generalis Plantarum* and by the work of Linnaeus, which reformulated the taxonomy.

Alchemy, although in decline by the rise of modern science, continued to flourish and reached its apogee in the 18th century; reminiscences of the alchemic traditions are scarce in the pharmacy of San Luca Hospital and can be traced in the texts of Dionisio Andrea Sancassani Magati and Fulvio Gherli.

As for chemical texts, the new works referred to iatrochemistry are those of Adrian von Mynsicht, Johann Friedrich Cartheuser and Johann Schröder.

The most evident tendency emerging from the lists of 1748 and 1784 is the growing influence of the tradition of antidotaries and pharmacopeias, through the addition of other works, all of the iatrochemical type, like those of Daniel Ludwig, Nicolas Lemery, Johann Schröder, Thomas Willis, Giovanbattista Capello, Pietro Poterio, Étienne François Geoffroy, Johann Friedrich Cartheuser and Robert James. Some of these pharmacopoeias were titled “universal”, since they had the ambition of collecting all the knowledge in the field. These texts were definitely the most important for the apothecaries, who needed to be acquainted not only with the most suitable times and conditions for the collection of plants, and techniques for drying and storage, but also with the preparation of chemical compositions. As a matter of fact, starting from the 17th century, these apothecaries were required to perform practices reserved to alchemists, such as extraction, distillation and calcination, in accordance with the requirements of spagyric pharmacology.

Finally, in the second half of the century the library was also provided with lexica, like those of Giovanbattista Capello and Robert James, and by dictionaries, to facilitate the reading of Latin and French texts.

**Conclusions**

The library of the pharmacy of San Luca Hospital revealed an organization which reflected the tendencies of pharmacy in the 18th century, when the discipline still used practices of the previous periods based mainly on the
use of the simples. However, it was also influenced by iatrochemistry, which, following the paracelsian theories, had a great influence on pharmacy. The texts characterized by iatrochemistry increased in the second half of the century, when the library was enriched with more recent works. The analysis of the inventories demonstrates the presence of both the galenic-arabic and chemical traditions, therefore reflecting an 18th century pharmacy (fig. 4) supplied with a composite literature.

Figure 4 - Hospital pharmacy in the city of Vercelli (northern Italy). Painting of unknown author. 18th century. Courtesy of the National Library of Medicine.

Acknowledgments
This work was supported by a grant from the ARPA Foundation (www.fondazionearpa.it).

Sažetak

ANALIZA KNJIŽNICE JEDNE TOSKANSKE LJEKARNE IZ 18. STOLJEĆA

Arhivski dokumenti bolnice San Luca, bolnice koja je dugo bila jedna od najvažnijih socijalnih institucija Republike Lucca (Toskana), pohranjeni su u arhivskim uredima grada Lucca. Bolnicu je opsluživala ljekarna gdje su se pripremali lijekovi za pacijente bolnice i za potrebe drugih ustanova grada. Tri različita inventara datirana iz 1719, 1749 i 1784, izvještavaju o popisu knjiga pohranjenih u ljekarničkoj knjižnici. Identifikacija i analiza radova knjižnice dopustili su rekonstrukciju trendova ljekarničke misli i prakse u gradu Lucca tijekom 18. stoljeća. Knjižnica ljekarne bolnice San Luca otkrila je kako su se antička medicinska praksa i ljekarnička tradicija održale još u 18. stoljeću. Tek je utjecajem iatrokemije, temeljene na Paracelzusovim teorijama, ljekarništvo preraslo iz botaničke znanosti u kemijsku disciplinu. Taj je prijelaz postao očitij u drugoj polovici 18. stoljeća, kada je knjižnica obogaćena novijim radovima.

Analiza inventara knjižnice dokazala je prisutnost kako galensko-arapske tako i kemijske tradicije u ljekarništvu, odražavajući sliku jedne ljekarne iz 18. stoljeća i njezine kompozitne literature.

Ključne riječi: povijest ljekarništva; 18. stoljeće; knjižnica; Lucca; Italija