

A STROLL THROUGH THE COLLECTIONS OF PHARMACOPOEIAS OF THE ORDER OF PHARMACISTS IN PARIS.

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Since the pharmaceutical profession appeared in Bagdad during the beginning of the Abbasside period (8th -9th century), it has been ruled by very strict regulations. The so-called "sayadila" were obliged to possess a formula book. At the time, the Great Grabadin plaid this role. The Arabic term "grabadin", of Persian origin, came from the Greek γραφιδιον, *graphidion*, diminutive of γραφίς *graphis*, which meant stilet and later on written text.

These reference books, whatever their names could be, according to the periods, grabadins, antidotaries, formularies, receptaires, codex or pharmacopoeias, were closely linked to the professional exercise of pharmacists or of their precursors.

The Historical Collections of the Order of Pharmacists, in Paris, are considered as one of the richest collection of pharmacopoeias regrouped in a single place.

A survey of these books will give us an opportunity to follow the evolution of Pharmacy and to admire some exemplars that became quite rare.

Even before pharmacists appeared, formularies containing the composition of remedies existed. The oldest collection of medicines formulas, encountered around the Mediterranean Sea, belonged to the Sumerian civilisation, and could be dated of the end of the third millenary. It has been discovered in Nippur and was engraved in cuneiform characters on clay tablets. The drugs described in these belonged to the three reigns of nature. Minerals were represented by saltpetre or clay. Substances of animal origin consisted in milk, saurian skin, tortoise shell. Substances of vegetal origin were numerous i.e. cassia, myrtle, assa foetida, thymus, willow tree, pear tree, fir tree or fig tree.

In Egypt, many medical papyri were found. The Ebers papyrus, now kept in the library of the University of Leipzig, described many formulas of remedies, as well as the unavoidable incantations that had to be pronounced when medicines were used in order to make their beneficial action possible.

An example, (Eb 499), allows to understand that the medicine plaid a secondary role, compared to the first place occupied by incantations to Ra, Isis, Osiris or Horus. Here, the purpose was to cure a burn. The invocation, in that case, was conceived like a dialog between a messenger and a goddess, Isis.

The messenger: Your son Horus is burning in the desert plateau.

Isis: Is there any water there?

The messenger: There is no water there.

Isis: There is water in my mouth and a Nile is between my thighs. I came here for extinguishing this fire.

To pronounce on the milk of a woman who gave birth to a boy, on odorant gum and the hair of a Billy goat, to place on the burn.

Another medical manuscript has been available since 2007, when the Louvre Museum acquired it from a private collector. It contains also formulas of medicines.

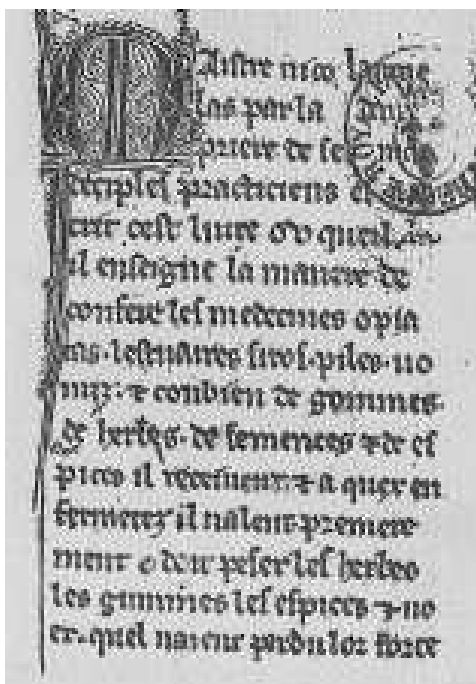
About 150 remedies were identified in these documents. The drugs were issued of the three reigns: Minerals such as natron, plants like in particular poppy and opium, and substances of animal origin, like beetles, mice tails, cat hair, pig eyes, hippopotamus fat, human sperm, eel eyes, bat faeces, pelican droppings, fly specks, or goose entrails.

Apothecaries appeared in Occident around the 12th century and constituted companies ruled by statutes as early as the 13th century. They were obliged to possess a reference handbook. This reference was for a long time *Antidotarium Nicolai*, a sort of compendium, with about 120 formulas of the *Great Salerno Antidotary*, which was rich of 1,200 formulas.

The term antidotary, which originally meant a collection of formulas of antidotes, finished to signify formulary. The cost of these manuscripts was then very high, partly because of their support, partly because of the manual process of reproducing the texts. Parchment consisted in the skin of an animal, which had been submitted to a long treatment in order to make it suitable to write on it. People used the skin of a goat, or a pig, or a lamb, or a calf. This last one was most appreciated and was at the origin of the term vellum from veal. It was in Pergamum, during the second century AD, that this new support had been conceived, in order to compensate for the lack of papyrus. At that time, the library of Pergamum had become flourishing with its 200,000 volumes and it competed with the prestigious library of Alexandria. That conduced the sovereigns of Egypt to forbid exportation of papyri in order to make difficult the developing of that new rival library.

During Middle-Ages, in Occident, parchments were used by scribes, monks in the scriptoria of minsters, or laic copyists working in the Latin quarter in Paris or in other towns possessing universities. Five weeks at least were necessary to copy a hundred leafs. The cost of that operation was then very high, even if students could find exemplars devoid of illumination and of drop cap.

For all these reasons, the lower price of reduced versions, such as *Liber Iste* by Platearius, or *Antidotarium Nicolai*, plaid an important role to explain why they were preferred to *Antidotarium Magnum*. The other reason was that they were less bulky. After the development of printing with mobile letters and the improvement of the preparation of a new support, the paper, printed books started to be published at much lower costs.



Antidotarium Nicolai



Luminare Maius

First printed formulary, the *Lumen Apothecariorum* by Quiricus de Augustus, was published since 1481. Before the end of the 15th century, in Italy, in 1492, the first book written by an apothecary on his profession, the *Luminare Majus* by Johannes de Manlius de Bosco, and, in 1496, the *Thesaurus Aromatariorum*, by another apothecary, Paulus Suardus, were also published. These three titles were often grouped in a single book, of which the 1546 edition is a part of Historical Collections of the Order.

During the same period, the city of Florence imposed on its territory, in 1498, the *Nuovo receptario di Firenze*, better known under the name of its following editions, *Ricettario Fiorentino*, it was the first printed official pharmacopoeia.



Nuovo Riceptario di Firenze, 1498

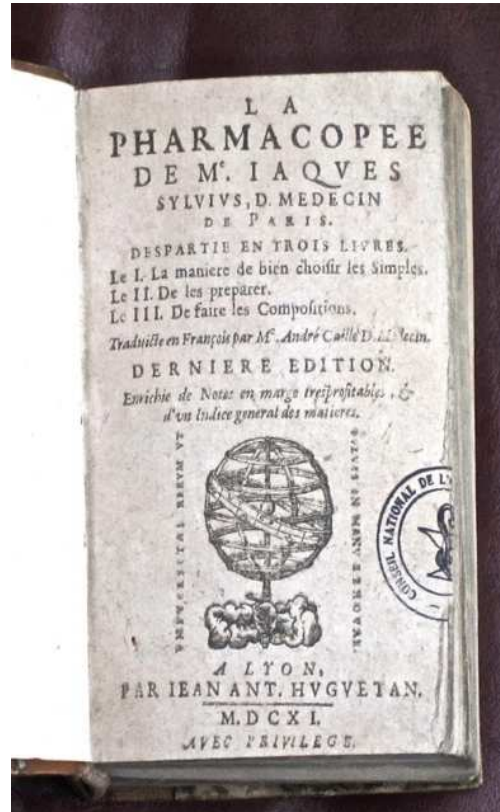
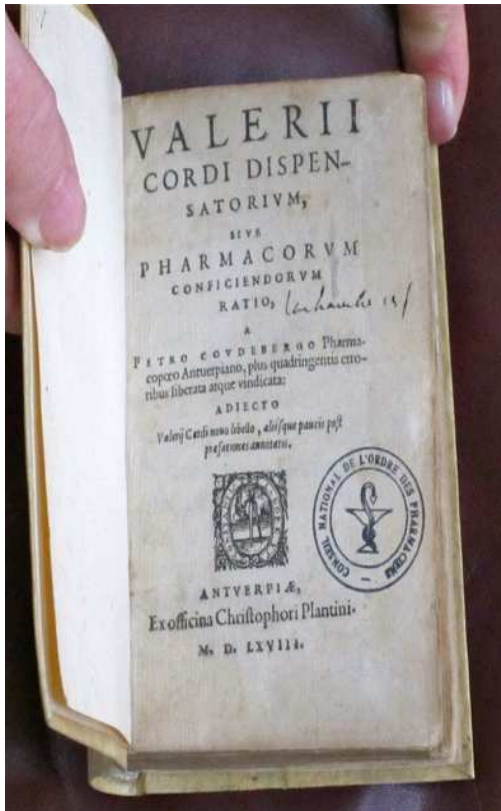


Ricettario Fiorentino, 1567

All these books, published before 1500, are called incunabula, because at that time printing was in its cradle (*in cunabulis*, in Latin).

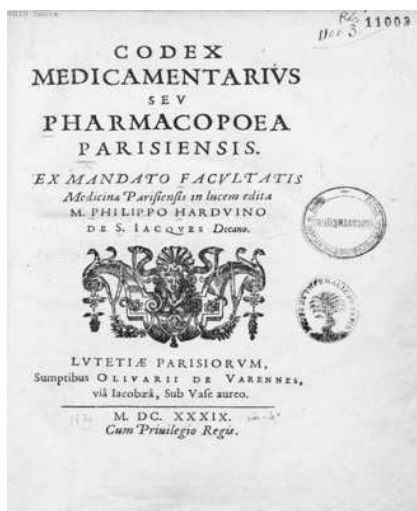
During the 16th century, in Italy, several editions of the *Ricettario Fiorentino* were published (for example in 1550 and in 1574). In Spain, the *Concordie* of Barcelona appeared in 1511, but there is only one exemplar left in Catalonia. In Germany, The famous *Dispensatorium* of Valerius Cordus, was published many times in Nuremberg since 1535 and benefited of a large diffusion. Another edition printed in Antwerp, in 1536, by Christopher Plantin, the founder of the famous printing office Plantin Moretus, which can still be visited nowadays. This *Dispensatorium* was quickly adopted by numerous other cities in German countries. In Augsburg, nevertheless, Adolphus Occo had his own pharmacopoeia printed.

In France, it was a burgeoning of books, in 1544, the *Promptuaire des Médecines simples*, by the apothecary from Tours, Thibaut Lespleigney, appeared in 1537, followed in 1561, by the *Enchiridion ou Manipul des Miropoles* written by Michel Dusseau. In Paris, a *Pharmacopoeia* was published under the name of Sylvius, Latin form of the name of a Parisian Doctor named Jacques Dubois, known as the renewer of anatomy. Laurent Joubert redacted a *Pharmacopée* which was officially used as a reference in Montpellier, where its author was Professor at the University.



Dispensatorium by Valerius Cordus, 1568 Pharmacopée de M. Jacques Sylvius, 1611
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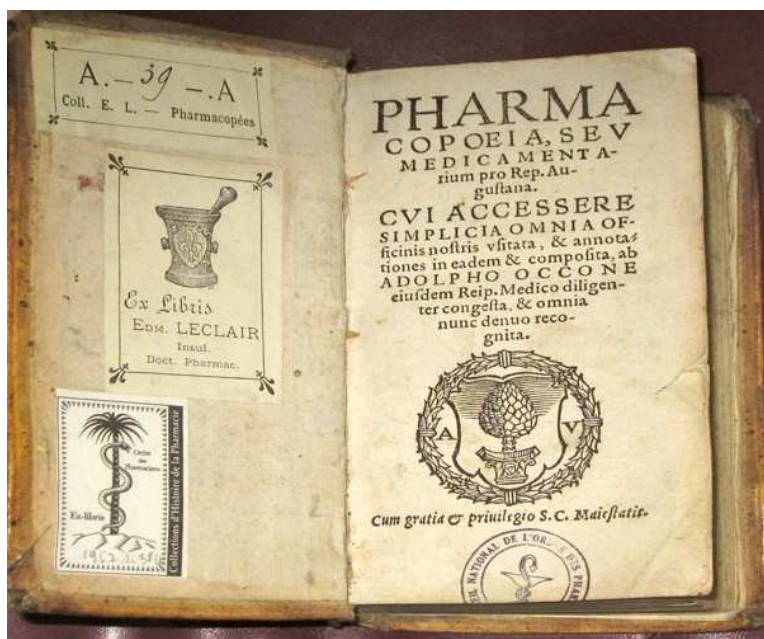
During the Monarchy, in France, diversity was the rule. Along the 17th and 18th centuries, the major cities published their own pharmacopoeias, which were official in their area of authority. The Collections of the Order are particularly rich in this kind of local or regional pharmacopoeias. Those of Paris (1639), Lille (1640), Bordeaux (1643), Lyons (1674), Saint-Omer (1689), Toulouse (1648), Valenciennes (1651), Strasburg (1725) or Douai (1732) can be cited. Many of them were published many times i.e. *Pharmacopoeia parisiensis* in 1732, 1748, 1758, or 1760, or the *Pharmacopoeia Lillensis* in 1694 and 1772, or the *Pharmacopoeia Argentoratensis* in 1757. They used to be called Codex because they were considered as codes of laws in their specific area.



Pharmacopoea Parisiensis 1639 Pharmacopoeia Lillensis, 1640
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Naturally, a similar evolution occurred in other European countries. It is then possible to find, in the Collections of the Order, many local pharmacopoeias coming from various countries, for example:

Pharmacopoeia seu Medicamentarium pro Rep. Augustana (Germany, Augsburg) (1574),
Officina Medicamentorum (Spain, Valence) (1501),
Antidotarii Romani (Italy, Rome) (1624),
Pharmacopoeia Bruxellensis (Belgium, Brussels) (1641),
Pharmacopoea Amstelredamensis (Netherlands, Amsterdam) (1660),
Pharmacia Antverpiensis (Belgium, Antwerp) (1661),
Antidotarium Gandavense (Belgium, Gent) (1663),
Pharmacopoeia Londinensis (Great Britain, London) (1696) (first edition published in 1634),
Pharmacopoeia Leidensis (Netherlands, Leyden) (1692, 1718),
Pharmacopoeia Brugensis (Belgium, Bruges) (1697),
Pharmacopoea Roterodamensis (Netherlands, Rotterdam) (1709),
Pharmacopoeia Lisbonensis (Portugal, Lisboa) (1716),
Pharmacopoeia Collegii Regii Medicorum Edinburgensis (Great Britain, Edinburgh) (1736),
Pharmacopoea Taurinensis (Italy, Torino) (1736),
Pharmacopoeia Matritensis (Spain, Madrid) (1739),
Pharmacopoea Leodinensis (Belgium, Liege) (1741),
Antidotarium Bononiense (Italy, Bologna) (1750),
Pharmacopoea Wirtenbergica (Germany, Wurtemberg) (1754).

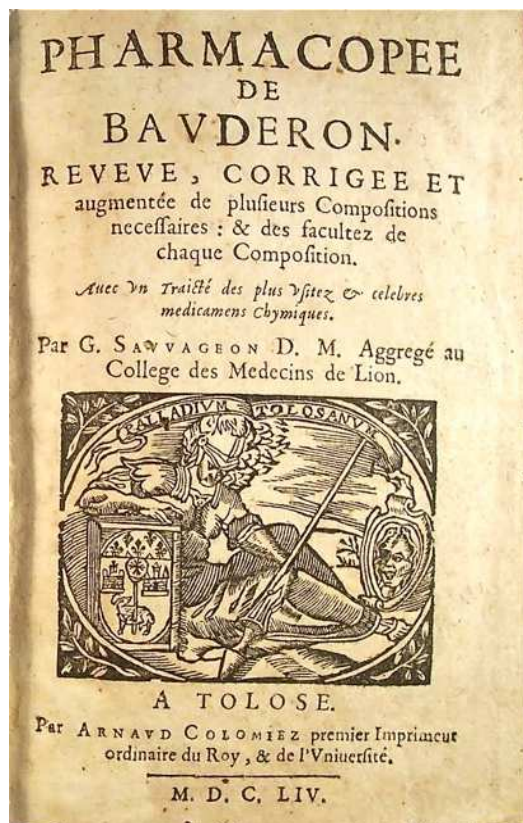


Pharmacopoeia by Adolphus Occo, 1574

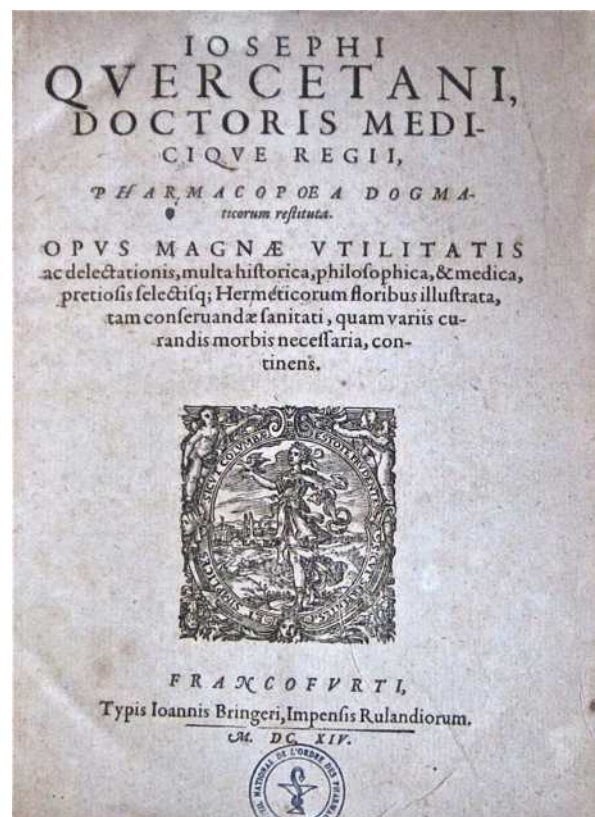
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Aside from these official books, the 17th century saw the publication of authors' pharmacopoeias that were used in the entire French kingdom, as well as in foreign countries, even if they had not any official recognition. The quality and the reputation of their authors were responsible for their popularity.

The *Pharmacopoeia* by Brice Bauderon, of which the first edition had been published in 1588, was, for example, very often published during the 17th century.



Pharmacopée de Bauderon, 1654



Pharmacopoea Dogmaticorum Restituta, 1614

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The *Pharmacopoea Dogmaticorum Restituta* (1609) was written by a physician of King Henry the fourth, Joseph Duchesne, Sieur de La Violette, said in Latin Quercetanus, is known under the erroneous name of "*Pharmacopée de Quercetan*" because of an error of translation of Latin into French. This book belonged to iatrochemistry and promoted the use of chemical drugs, and for this reason it was subject to strong criticism by the dean of the Paris Faculty of Medicine, the famous Guy Patin, who considered that out of the strict observance of Galen doctrine, nothing could be correct and useful.

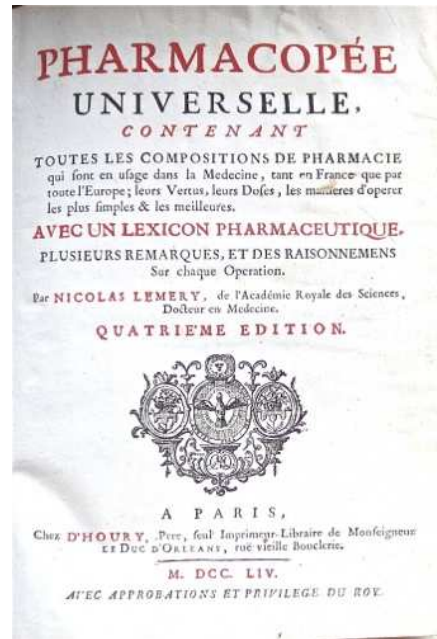
Remarkable edition successes, with exceptional long lives, the *Pharmacopée Royale Galénique et Chymique*, by Moysse Charas (first published 1676) and the *Pharmacopée Universelle* by Nicolas Lémery (first published 1698) were both reedited many times until respectively 1753 for Charas and 1764 for Lémery. Both were redacted directly in French and were translated in various languages including Latin. They were used in the entire country for practical examinations of apothecaries.

The *Pharmacopoeia Medico-Chymica* by the German author, Johannes Schröder, was first published in Latin and republished with comments of Michael Etmuller, and, later on, translated in French, under the title "*La Pharmacopée raisonnée de Schroder*", in 1648. It was not conceived as usual pharmacopoeias but as a kind of *Materia Medica* with addition of mentions of some medicines prepared using the drug described. This French Lyons edition had a good diffusion in France.

The *Pharmacopoeia Bateana* was also very popular, and the Collections of the Order possess not less than nine exemplars of this book (published between 1698 and 1752) written by George Bate, physician of the king of England, Charles the second.

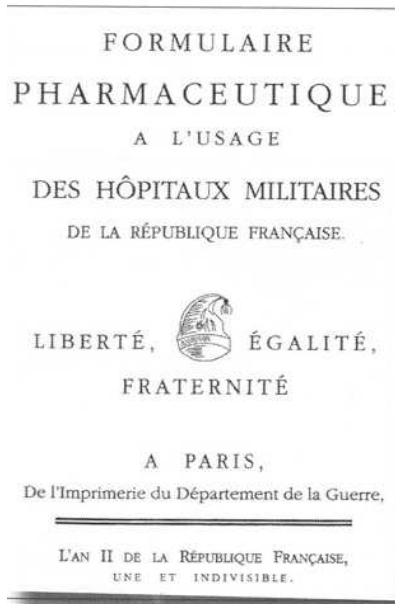


Pharmacopée Royale
Galénique et Chymique



Pharmacopée Universelle

For restricted audiences, hospital formularies, such as the *Nouvelles Formules de Médecine latines et françoises pour le Grand Hôtel-Dieu de Lion* (1716) or the *Formules Médicinales de l'Hôtel-Dieu de Paris* (1753) could be considered as pharmacopeia reserved for hospitals. In a similar way, the use of the *Code pharmaceutique* published by Parmentier (1804) was restricted to civil hospices or prisons. Military formularies such as the *Formules de Pharmacie pour les Hôpitaux militaires du Roy* (1747) or the *Formulaire Pharmaceutique à l'usage des Hôpitaux militaires de la République Française* (An II) were restricted to the use of Military Health Services.

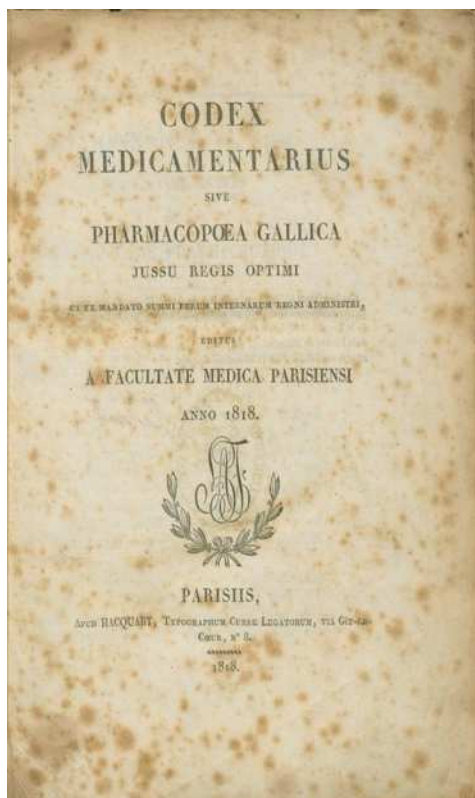


Formulaire de l'An II

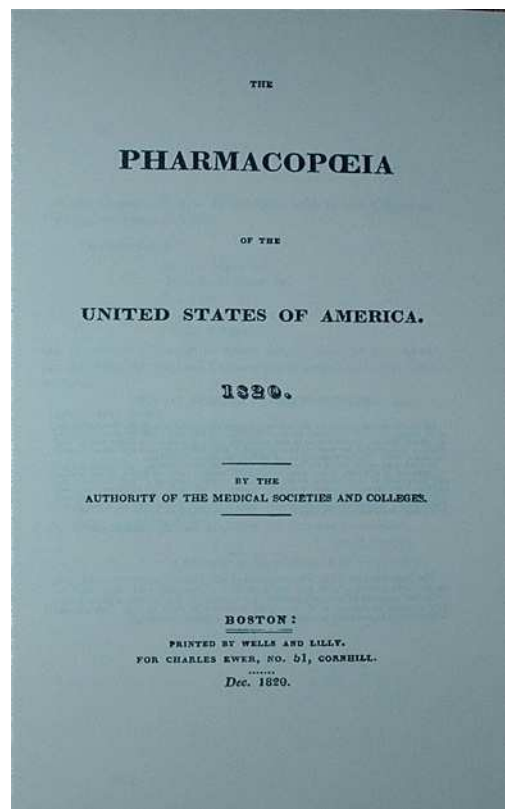


Manuel des Dames de Charité, 1755

Due to the lack of physicians and apothecaries in the countryside, and to the cost of the access to medicine doctors or to apothecaries in towns, it was necessary to rely on charitable people to treat the diseases of poor people. A special category of pharmacopoeias was then constituted of charity books, conceived for helping the action of ecclesiastics, or charitable ladies, in favour of the health of sick poor people. These books had to contain formulas of cheap medicines, efficient, but easy to prepare with low costs. The *Remèdes charitables de Madame Fouquet* (Marie de Maupeou, the mother of the disgraced minister of finances of Louis XIV), the *Médecin charitable* by Philibert Guybert, the *Médecin des pauvres* by Paul Dubé, *La Médecine et la Chirurgie des Pauvres* by a monk, Dom Nicolas Alexandre, or the *Manuel des Dames de Charité*, written by Arnault de Nobleville and his co-workers are good examples of this kind of literature. During the 19th century, after the French Revolution, during the Consulate a law (Loi du 21 germinal An-XI, 1803) promoted a new organisation of pharmacy and pharmacopoeia became national. The first *Codex Medicamentarius sive Pharmacopoea gallica* was published in Latin, in 1818, and translated in French, only one year later. Similarly, *The Pharmacopoeia of the United States of America*, was published in 1820.



Codex Medicamentarius, 1818



Pharmacopoeia of the United States, 1820

The 19th century and the first half of the 20th century were the period of these national pharmacopoeias. In France the editions of the *Codex* were published regularly (1837, 1866, 1884, with a supplement in 1895, 1908 with supplements in 1920 and 1926, 1937 with a supplement in 1947, 1949 with a supplement in 1954, 1965 with a supplement in 1968). Since 1972 the French pharmacopoeia was published as a ring binder, in order to allow rapid modifications. Then appeared a new phase, with numeric edition as a CD-Rom.

Simultaneously, since 1967, appeared the *European Pharmacopoeia* (the 7th edition is now used). The *International Pharmacopoeia*, presenting general quality specifications for selected pharmaceutical products, excipients and dosage forms, was conceived as complementary to national pharmacopoeias.



Pharmacopée Française, 2009



European Pharmacopoeia, 7th edition

From Sumerian clay tablets and Egyptian papyri to CD-Roms, Pharmacopoeias reflected the evolution of medicines but also of the various societies. The Historic Collections of the Order of Pharmacists in Paris gave an opportunity to make a travel from the first incunabula to recent numeric pharmacopoeias, from local pharmacopoeias to national ones, but, whatever their aspect was, they always constituted a precious tool for the professional exercise of pharmacists and of their precursors.

I would like to thank Mrs Kassel, Responsible of Historic Collections of the National Order of Pharmacists, 4 avenue Ruysdaël, 75008, Paris, for allowing me to consult, to photography and to reproduce some of the pharmacopoeias of the collection.

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