# PHARMACOPOEIAS IN VENETO FROM THE FALL OF THE REPUBLIC UNTIL ITALIAN UNIFICATION

#### Ernesto Riva

When, at the end of the 18<sup>th</sup> Century, almost all European states had their own national pharmacopoeia, Italy, which still consisted of a collection of small states, had a bewildering array of these volumes, both public and private. This situation was undoubtedly due to the political status quo, but also to a particular quirk of Italian apothecaries who had a marked imaginative, inventive streak, the product of an ancient tradition linked to the flourishing spice trade that had thrived for centuries on the shores of the Mediterranean.

Given this situation, it is no surprise that the assorted official pharmacopoeias that appeared in the various Italian states were considered rather tedious lists of medicaments that often languished untouched on the apothecaries' shelves, since they were unable to meet the needs of these practitioners and their ever-growing desire to acquire a more global knowledge of the pharmaceuticals in question. It was necessary to establish which of these medicines where beneficial to the public health while preserving the Galenic-Arabic tradition. On the other hand, stemming the growing tide of charlatanism meant sacrificing some of the freedom to invent remedies, so beloved of the profession. What was needed was a precise, authoritative set of rules that would guarantee a future for apothecaries, a future that would allow them to shore up their professional standing, marking them out once and for all from mere grocers.

This meant that the Italian states had to find a way to bring order to this confusion by adopting an official rule book aimed at their own apothecaries and approved by the health authorities, at the same time encouraging apothecaries to abide by this. In addition to being official publications required by society to safeguard the public health, pharmacopoeias were a way of ensuring that apothecaries had access to at least the minimum resources they required and a way of guaranteeing that certain remedies could always be found and supplied. This was a time when action was needed to deal with the huge number of apothecary shops, many of which were in dire financial straits, and to address the yawning gap between city apothecaries and their rural counterparts and thus to do everything possible to ensure reasonably equal supplies or at least to give even the most poverty-stricken practitioners the opportunity to buy the bare minimum at an affordable cost.

Thus, the Grand Duchy of Tuscany had its extremely popular *Ricettario* which was subject to innumerable revisions and new editions<sup>(1)</sup>, Siena its *Ricettario Sanese*<sup>(2)</sup>, Bologna its *Antidotario*<sup>(3)</sup>, Mantua its *Antidotario*<sup>(4)</sup>, Bergamo its pharmacopoeia supervised by the

<sup>(1)</sup> Ricettario Fiorentino, Firenze, Cambiagi, 1789.

<sup>(2)</sup> Ricettario Sanese, Siena, Bindi, 1777.

<sup>(3)</sup> Antidotarium Collegii Medicorum Bononiensis, Venezia, Orlandelli, 1790.

<sup>&</sup>lt;sup>(4)</sup>Antidotarium ex multis, optimisque autoribus collectum..., Venezia, Valgrisi, 1559.

XII

### NOI RIFORMATORI

DELLO STUDIO DI PADOVA.

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Addi 11 Giugno 1790 Venezia. Registrato in libro Privilegi di Terra Ferma dell' Università de' Libraj ec. Giuseppe Fenzo Prior attuale. Republic of Venice<sup>(5)</sup>, Milan its *Prospectus Pharmaceutici*<sup>(6)</sup>, Genoa its *Formulario*<sup>(7)</sup>, Piedmont its *Pharmacopoea Taurinensis*<sup>(8)</sup>, the Papal State its *Antidotario*<sup>(9)</sup>, Naples its *Antidotario*<sup>(10)</sup>; while in Sicily, Messina had its *Pharmacopoeia*<sup>(11)</sup>, Palermo its *Antidotario Farmaco-Chimico*<sup>(12)</sup> and Catania its *Dispensatorium*<sup>(13)</sup>.

For over a century and a half the Venetian Republic had attempting to hold its apothecaries to private of code Farmacopea of Curzio Marinello) approved by the College Medicine<sup>(14)</sup> and now faced with the need to produce an official code, it published this on 10 May 1790, entitled "Codice Farmaceutico per lo Serenissima". (15) della Stato publication however. was accompanied by some unfortunate events.

The Grand Inquisitor of the Sant'Ufficio of Venice appointed a committee to compile the

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pharmacopoeia, consisting of no fewer than seven professors from the University of Padua who opened the preface with these words: "... let this useful work be the code of practice for all the medicinal apothecaries of the state, thus removing all the confusion and arbitrary judgements that have hitherto prevailed for lack of such a code of practice...

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- <sup>(5)</sup> Farmacopea o Antidotario dell'eccelentissimo Collegio dei Signori Medici di Bergamo, Bergamo, Rossi, 1680.
- (6) Prospectus Pharmaceutici editio tertia sub quo Antidotarium Mediolanense..., Milano, Galli, 1729.
- (7) Formulario Farmaceutico della ser.ma Repubblica di Genova, Genova 1791.
- (8) Pharmacopoea Taurinensis, Torino, Chais, 1736.
- <sup>(9)</sup> Antidotario Romano tradotto da Ippolito Ceccarelli, Venezia, Valvasense, 1678.
- (10) Antidotario Napoletano, Napoli, Mollo, 1649.
- Pharmacopoeia seu Antidotarium Messanense..., Messina, Brea, 1629.
- (12) Antidotarium Panormitanum Pharmaco-Chymicum autore Nicolao Gervasi, Palermo, 1670.
- (13) Catanense Dispensatorium sive Antidotarium, Catania, 1658.
- Pharmacopoeia sive de vera Pharmaca confciendi... a praestantiss. Et excell.mo Medicorum Venetorum collegio comprovata, Venezia, Mejetti, 1617.
- Codice Farmaceutico per lo Stato della Serenissima Repubblica di Venezia compilato per ordine dell'eccellentissimo Magistero della Sanità, Padova, 1790.

such that it serves as the universal document to be used by all the aforesaid apothecaries whose practices shall conform to what is written therein". This was a somewhat arduous task in a city like Venice, where, over the centuries, hot off the various 400 presses had come a vast quantity of pharmacopoeias, both public and private, from all sorts of sources in the various states of the Italian peninsula.

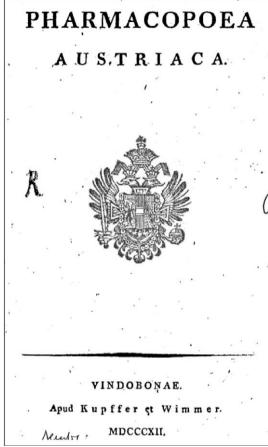
Venice had given birth to the first authoritative translation, in 1510 by Ermolao Barbaro, of *De Materia Medica* by Dioscorides. In 1471 it had printed the famous *Antidotarium* by Nicolò Preposito Salernitano, in 1490 *Luminare Majus* by Manlio del Bosco and in 1491 *Compedium Aromatariorum* by Saladino D'Ascoli, all milestones in the apothecary's art, not to mention the *Discorsi su Dioscoride* by Mattioli which first appeared in Venice in 1544.



Venice was also home to the most ancient *Capitolare degli Speziali* of 1258, which opened with a solemn injunction binding all apothecaries to prepare "*omnes confectiones, electuaria et siropo sive unguenta atque emplastra*" in compliance with the law and without fraudulent intent <sup>(16)</sup>. In 1565 Venice set up the Collegio degli Speziali (College of Apothecaries) which had its own charter approved by the governing body the Giustizieri Vecchi, a move that marked the official separation of apothecaries from grocers, imposing the requirement that they be kept supplied with all the necessary medicines currently in use and to charge the correct fee for them. Venice boasted apothecaries with considerable scientific prowess, among them Alberto Stecchini, Antonio De Sgobbis, Giovanni Battista Capello and Girolamo Zanichelli themselves authors of a great many volumes dealing with professional practice<sup>(17)</sup>. Venice had for centuries been a booming trading centre for spices and medicinal ingredients from all over the Mediterranean. Undoubtedly Venice was not the sole mistress of the Mediterranean spice trade but her merchant galleys, driven almost entirely by the power of sail,

<sup>&</sup>lt;sup>(16)</sup> Capitolare degli Speziali Veneziani, Giustizia Vecchia, reg. 1, c. 159, Archivio di Stato, Venezia 1258 in folio.

<sup>(17)</sup> The most famous are *Teatro Farmaceutico*, by Antonio De Sgobbis of 1667 and *Lessico Farmaceutico Chimico* by Gio. Battista Capello with no fewer than eleven editions printed between 1728 and 1775.



using their oars only to come into port, voyaged the length and breadth of that sea. These ships, which reached capacities of some 250 tons, were built with state subsidies and then placed at the disposal of the merchants offering the best price. It was thanks to Venice that the Eastern Mediterranean achieved such unparalleled trading wealth. Wherever these merchants travelled, hunting for their merchandise or those of their associates, they attracted the support of government or ecclesiastical organisations, they found churches that welcomed them in and economic and political bodies ready to guarantee their cash deposits or trading contracts. This powerful trading network in which all roads led to Venice as the returning merchants repatriated their profits, formed the basis for a number of colonial outposts dotted throughout the Mediterranean. These Venetian "colonies" set up to facilitate the exchange of trade, enjoyed considerable powers of self-government but where nonetheless primarily trading posts rather than residential settlements and this made it easy for Venice to penetrate the Islamic world that was constantly at war with the infidels. By

establishing diplomatic relations with the various local sultans and laying down the principles of mutual protectionism, Venice was able to engage in trade with those Islamic peoples, whose territories soon became dotted with trading posts and warehouses belonging to the Venetian Republic. Another factor that favoured this trading empire was the fact that the Arab lands were extremely poor in forestry resources and therefore in great need of the timber that only Venice could provide and this became the motivation for the exchange of trade in such typically oriental goods as fabric dyes, cotton and the spices that were set to become part of the normal lifestyle of Western consumers.

Given this history, it is easy to understand the hostility with which Venetian apothecaries greeted any set of restrictive regulations, particularly those drawn up by a heath committee sitting in Padua. The code boasted that it was a "pharmacopoeia for the use and management of the apothecaries of "La Dominante" (the Marine Republics of Venice and Genoa) and the state" and while it did take into account the centuries-long Venetian tradition of using the names originating from the famous Capello Lexicon, a text that was still considered an icon of the Venetian apothecary art, the new rule book insisted forcefully on "...omitting any comment on the benefits and powers of

preparations and mixtures and about the suitability of their use, which must be the province of medical practitioners, in the light of their knowledge and experience". Perhaps the Venetian apothecaries found this edict hard to swallow, but this had been the line taken by official pharmacopoeias since the days of the *Ricettario Fiorentino*, so much so that, right from the 14<sup>th</sup> Century, the Venetian Republic's highly advanced health legislation had established the principle of the clear separation of the professions of medical practitioner and apothecary.

Publication of this Venetian Pharmacopoeia with its aim of "bringing about order and putting an end to confusion", was immediately greeted with such a howl of protest that it forced the health authority to appoint a committee to review the work. The verdict of this committee was that the text "was not in keeping with the principles of the latest Materia Medica" and that, rather than mere amendment, it needed to be completely rewritten since "the work poses a threat to the preservation of life". (18) Subsequently it was also stated that the work was actually "in conflict with the principles of the Materia Medica of that time" (19), and, as such, it was generally disapproved of because it

Jahren, nicht nachdrucket, difficobiert, feisbabet, untteaget, oder verlaufet, noch auch selches andern zu thun gestattet, in keinerten Weise noch Wege, alles der Mermeidung Unifer Kaiselingen Ungenden Deutek, den vielgemet, der Dagwöty, seine Erden, und Rachfonmen, oder der ein Beschischer un ein Juff and Junden eines seben Orte Obrigetie, wo sie dergelichen beg euch, und einem irben sinden werden, alfogleich aus eigener Gewalt, ohne Verpinderung männiglicht, ju sich nehnen, und damit nach eigenen Verfallen dandlen, und thun wögen, Jedoch sollten mehrgedachter Dagworft schultig und gehalten fenn der Wertung und und der Bernblichten Bereitlichen Reveheit, die gemöhnlichen sind gement und werden zu Martin und der Verfallen von dem anzugen Werfullen von dem anzugen Werfullen von dem Anders zur Warnung, demschen verducken zu lassen. Wie liefen Ariefs der Wielender und der Verfallen wir und der Verfallen wird liefen Raiserlichen Reventucken derecht Jankeget, der gegeben ist zu Weiender und verstätzten derecht Jankeget, der gegeben ist zu Weiender und verstätzten Gerert-Jankeget, der gegeben ist zu Weiendern weiter Martin Gerert Jankeget, der gegeben ist zu Weiendern derecht Jankeget, der gegeben ist zu Weiendern weiter Martin Gerert-Jankeget, der gegeben ist zu Weiendern wie auch Pungarischen und Behreinischen und verstätzten.

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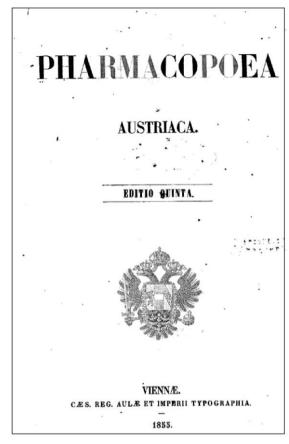
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recommended the use of some antiquated active ingredients based purely on popular beliefs rather than on empirical scientific evidence. These were mineral ingredients such as ruby, sapphire, topaz and gold and those of animal origin such as toad, swallow's nest, lizard and scorpion. It must be admitted however, that the inclusion of traditional mineral and animal ingredients was not unduly shocking, given that in Venice and perhaps in the rest of Europe their use was still widespread, despite many of them being of extremely doubtful efficacy. If we analyse the list of animal and mineral ingredients in the code in question, we discover that it includes some components that could be considered consistent with the basis of pharmaceutical chemistry and organotherapy. The numerous pharmaceutical remedies and preparations listed in the code moreover, do not differ greatly from those already known and listed in the other pharmacopoeias of that era that were recognised and used by all apothecaries, when the use of a wide range of different medicaments was the norm as the heritage of the ancient and still dominant Galenic tradition. The preface to this code states that "some compositions dating back to antique times, their use sanctioned by custom and that are significant for the trade of the Venetian and Genoese Republics, have been kept, along with their recipes and processes, without any alterations".

<sup>(18)</sup> G.Maggioni, C.Masino, *Le Farmacopee Venete*, in "Minerva medica", anno IV, n.12, Torino, 1955 e anno V, n. 1-2-3- Torino, 1956.

<sup>(19)</sup> G.Dian, Cenni storici sulla farmacia veneta, Venezia 1900.



In conclusion, this code, also in the opinion of the other experts who had examined it in depth, was no worse than many others<sup>(20)</sup>.

Despite this, the health authority of the Republic of Venice decreed that it should be withdrawn and destroyed. With the promise that "a new code is to be drawn up" (21).

On 12 May 1797 the Genoese and Venetian Republics fell to Napoleon who, in the same year, presented them as a gift to the Austrians and thus the Venetians were deprived of their latest official code, although they did not appear to deplore its loss.

Meanwhile, in 1794 in Milan, when this was still under Hapsburg Rule, a *Pharmacopoea austriaco provincialis* (22) was printed that was probably intended to replace the third edition of the *Antidotario Milanese* published in 1729 (23). If this were to replace the former volume, it would amount to a major overhaul. In little more than 190 pages, this new pharmacopoeia saw a drastic reduction in the number of animal ingredients, leaving only the *cancrorum* 

lapides, deer horn, spermaceti (sperm whale wax), cochineal, egg, pork fat, bull bile and castoreum. Only the most well known and widely used mineral ingredients were included, such as copper acetate, alum, antimony, borax, tartar, ceruse, litharge, minium, vitriol, magnesium sulphate, sulphur, zinc sulphate and oxide and copper sulphate. The list of plant ingredients at least preserved those most traditional and widely used remedies. There were some 300 compounds divided into ten aromatic vinegars, fifteen alkalis and aethiops, thirty spirits, twenty syrups, twenty electuaries and robs, seventeen waters, twenty poultices, the same number of balsams, twenty unguents, eleven oils, seventeen powders, thirty tinctures, extracts and elixirs, ten sports and some pills. There is even a simplified theriac in the form of a resolvent electuary made of snakeweed root,

(20)

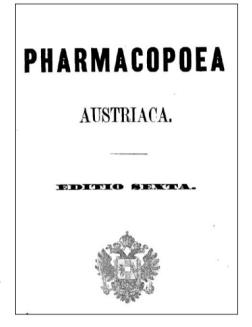
G. MAGGIONI – C. MASINO, *Le Farmacopee Venete*, in "Minerva medica", anno IV, n.12, Torino, 1955 e anno V, n. 1-2-3- Torino, 1956.

A. CORRADI, *Le prime farmacopee italiane*..., Milano, Rechiedei, 1887.

Pharmacopoea austriaco provincialis emendata, apud Wappler, Viennae, 1794 (pp 195+VIII in 8°).

Prospectus Pharmaceutici, editio tertia, Johanni Honorato Castillioneo..., Mediolani, Galli, 1829.

iuniper rob, cinnamon, opium and honey. Another theriac known as "diatessaron" contained no opium and was made from a powder of gentian, galingale root, laurel and juniper berries mixed with honey and myrrh resin. These were therefore sometimes very simplified formulae, but there were basically enough remedies to provide apothecaries with all the necessary medicaments. The preface opens in this tone: "cum progresso eximii, quos ultimis hisce lustris ex medicorum observationibus chemico-rumque experimentis ..induxerit necessitatem. medicaminum multorum apparatum con-trahendi aut mutandi" and continues by stating that it was decided to omit single ingredients and compounds efficacy had not been scientifically proven and to replace many ancient remedies (antiquis plurimi, saepe barbaris) with ingredients



proven to be effective by medical practitioners. This was signed by Antonius Liber Baro de Storck, *protomedicus*, otherwise known as the celebrated Anton von Storck, then the chief court physician and the personal physician to Empress Maria Theresa of Austria, as well as rector of the University of Vienna, who together with a group of six Viennese professors approved this pharmacopoeia on 10 November 1793.

The same pharmacopoeia was proposed four years later in Venice under Austrian rule and reprinted in Venice on 17 July 1798 by Sebastiano Valle(<sup>24</sup>). It had the same preface and content but an ample set of seventy-four explanatory notes (notis uberrimis *locupletata*), all presented as footnotes attached to the various remedies listed in the second part of the pharmacopoeia. On page XVI the text reports a ruling from the Regia Commissione Camerale (Royal Commission), written in Italian and signed by the Deputy Pietro Zaguri, in which "permission is given for the book to be reprinted by the Venetian printer Sebastiano Valle" and it also included a preface in Latin by the printer addressing the readers giving the meaning of the explanatory notes added to the print of this pharmacopoeia. "...nova haec editio voluimus ut typis nostris prodiret, non typographicis solum mendis, quod fery potuit, expurgate, sed novis etiam quibusdam adjectionibus atque adnotationibus locupletata". These notes clarified many of the practical aspects and content of many of the preparations listed in the pharmacopoeia and they were also possibly intended to make the manual more palatable to Venetian apothecaries, as it states in the preface - promptissime typis etiam Italicis vulganda fuerit. There were however, no substantial changes since a major review of the Materia Medica was already underway, along the lines of the major European pharmacopoeias, which also functioned as a model for this one.



These pharmacopoeias, for example the Farmacopea Augustana, Edimburgensis and Parisiensis however, were much more comprehensive and were quoted as examples in the preface. Basically, an attempt was once again being made to reaffirm the primary purpose of all these official codes, this being to circumscribe the apothecaries' field of action in a place that made it impossible for one profession to invent anything or invade the fields of other professions. This was a very old problem that had always been in conflict with apothecaries' needs and their natural curiosity which made them eager to expand into the entire field of medicine and with their inability to tolerate the imposition of sets of restrictive rules whose main aim was to relegate them to mere operatives, blindly carrying out the orders of medical practitioners and denied the opportunity to question the usefulness what they were doing. apothecaries, and Venetian apothecaries in particular, who had always considered themselves in the forefront of public healthcare, these imposed rules were unacceptable, to the extent that the official codes, despite being obligatory, were often left to gather dust at the back of their bookshelves in favour of the

much more complete and comprehensive private pharmacopoeias.

However, times were changing and the fortunes of Venetian apothecaries were about to be overturned by events and by new legislation and while the College of Apothecaries remained intact for a short period during the first Austrian occupation, is was finally abolished on 18 April 1806, following the return of the French. The Napoleonic Government in the years of the Kingdom of Italy made considerable changes to the health system that were intended as a faithful reflection of the reforms introduced to the entire administrative system of the Kingdom. This centralised system, with its insistence on order and discipline, left no room for individualistic initiative. Thus an organisation such as the Venetian apothecaries, built on a strong corporative tradition, consolidated by the privileges accrued over the long life of the Venetian Republic, had no choice but to suffer, and tolerate with great reluctance, an attempt to integrate them into a plan to reorganise the whole of civil society.

The return of the Austrians marked a new beginning and, since they envisaged a long occupation, they were perhaps more tolerant and respectful of local tradition, although

this tolerance did not extend to failure to enforce a set of regulations that also applied to the apothecaries who were obliged to abide by the new Austrian pharmacopoeias.

The first *Pharmacopoea Austriaca* had appeared in 1812<sup>(25)</sup>, a time in which the Austrians had been badly shaken by Napoleonic ambitions and the final collapse of the Holy Roman Empire. This was the pharmacopoeia of the new Austrian Empire and its preface, written in German, set out all the areas of application of this code, which were mainly the countries belonging to the Archdukedom of Austria, the external districts of Burgau, Brisgovia and Swabia, what remained of the Austrian Southern Netherlands, of Hungary, Galicia, Croatia, Slavonia and Dalmatia and what remained of the Italian provinces of Milan, Mantua and Parma. It was signed Franz, the newly proclaimed Emperor Francis II.

Taking a look at this concise pharmacopoeia that lists about a hundred single ingredients and about the same number of compounds, you immediately notice that it is identical to the *Pharmacopoea Austriaco Castrensis*, published over ten years earlier (26). Considering the situation Austria found itself in at that time, permanently at war with the hated French and incessantly preoccupied with defending its own provinces, it is easy to understand the extreme usefulness of a military pharmacopoeia. Skimming through its contents, in addition to the usual list of individual ingredients and compounds, further reduced to some 100 individual ingredients and 74 compounds, the eye immediately lights on a page containing some additional veterinary remedies quae in elenchis precedentibus non continentur, including some challenging items such as hemlock, henbane, antimony and others in common use such as caraway, horse chestnut and fenugreek that were obviously in constant demand for the enormous number of animals in the Austrian armies. Then there are the formulae medicinales in usum nosocomiorum austriaco-castrensium, and the individual and compound remedies quae medici chirurgi castrenses prescriptio obtinere possunt. A total of over 200 remedies, including those containing mercurialis, antimony, anodynes, those based on iron, sulphuric vapours, harsh purgatives, anthelmintic boli, poultices, cataplasms, collyriums, fomentations, powders and pills, provided everything required to supply field hospitals with all they needed. The first pharmacopoeia of the newly born Austrian Empire was still an army field manual, something totally understandable given the tumultuous nature of that period in history.

1814 saw publication of the second edition of the *Pharmacopoea Austriaca*<sup>(27)</sup> and this was very different from the first edition. The first part, consisting of thirty-six pages, listed the individual ingredients, the second, eighty-page part listed the compounds and the final forty pages contained a detailed index. The some 220 individual ingredients were described quite concisely and obviously the lion's share consisted of substances from the plant kingdom, including most of the remedies in use at that time, with a mere fifteen mineral ingredients, in the form of salts of sulphur, lead,

 $<sup>^{(25)}</sup>$  Pharmacopoea Austiaca, apud Kuppffer et Wimmer, Vindobonae 1812. In ... pp 102 +IV.

<sup>&</sup>lt;sup>(26)</sup>Pharmacopoea Austriaco Castrensis, ad mandatum et cum privilegio S.C.R. Apost. Majestatis, Viennae, typis Patzowsky, 1795.

<sup>&</sup>lt;sup>(27)</sup>Pharmacopoea Austriaca, editio altera, emendata, appud Rupffer et Wimmer, Vindobonae 1814, pp 158+VI.

arsenic, silver, copper, as well as alum, lime and tartar, with only ten animal ingredients such as river crab, castoreum, musk, Spanish fly, bull bile, powdered bone and spermaceti, animal ingredients that had evidently survived the radical purging undergone by the list of individual ingredients. The over 200 compound remedies are described in detail, both their preparation and information about all the categories of preparation for pharmaceutical use, ranging from distilled waters to powders, electuaries, syrups, oils, liniments, poultices, waxes, tinctures and extracts, including some comparatively new chemical remedies such as some acids and ethers. The work described in minute detail the preparation methods for sulphuric, tartaric, nitric, oxalic and acetic acids and also for acetic and sulphuric ethers, with particular attention paid to the delicate chemical operations required. It could be said that this was the first official pharmaceutical code used by the Austro-Hungarian authorities to deal with administering the pharmacies in its vast and long-lasting Empire.

The third edition<sup>(28)</sup> came out in 1820 and this was little different from the previous one other than it was specified in the preface that the work set out to regulate the trade in medicaments in the lands of *Italiae provinciae ad Austriam reversae*. This list of some 230 individual ingredients is more or less the same, as is the list of some 220 compounds. These are followed, before the index, as in the previous edition, by some tables showing weights and measures, a list of the chemical reagents to be kept in the pharmacy, plus a table of specific weights.

The fourth edition<sup>(29)</sup> appeared in 1834 and this differed from the previous volume with some new items added to both the individual ingredients and the compounds. The only new items in the eighteen individual ingredients listed in the appendix were gold and iodine. As is well known, gold was one of the main ingredients in practical alchemy, but as new techniques were developed over the centuries, it became increasingly part of medical chemistry, then coming back into favour as a treatment for tuberculosis<sup>(30)</sup> and then as an anti-arthritis medication<sup>(31)</sup>. Iodine, which had always been vaguely known about as present in seaweed, had only recently appeared on the medical scene following studies by the French Institute of Chemistry Research<sup>(32)</sup> and it gradually began to be listed as an antiseptic medicament in all the pharmacopoeias. These two ingredients were then introduced into the compounds, iodine for preparing *Tinctura Jodii* simply dissolved in alcohol, and gold, in the more elaborate preparation of a *murias auri et sodae*, that required a mixture of sulphuric and nitric acid concentrates in which the pure metal was dissolved as much as possible and the solution was then dried out and finally dissolved in distilled water.

<sup>&</sup>lt;sup>(28)</sup> Pharmacopoea Austriaca, editio tertia, emendata, apud Carolum Gerold, Vindobomae, 1820, pp 160+VI.

<sup>&</sup>lt;sup>(29)</sup> Pharmacopoea Austriaca, editio quarta, emendata, typis Caes.Reg. aulae et status typographyae, Vindobonae, 1834, pp 195+VI.

<sup>(30)</sup> It was Robert Kock who observed that gold salts were capable of inhibiting the *mycobacterium* tubercolosis.

<sup>(31)</sup> Subsequent studies led to what is known as chrysotherapy for rheumatoid arthritis using gold salts combined with sulphur.

<sup>(32)</sup> It was actually Bernard Courtrois, a saltpetre merchant from Dijon, who recovered the metallic lamellae by treating the waters in which the seaweed grew, in Brittany, with sulphuric acid.

The other new additions, although these were not new to the list of individual ingredients, such as meadow saffron, cherry laurel, nux vomica, sarsaparilla, thorn apple and pomegranate were probably introduced because they were being re-examined in the realm of pharmaceutical chemistry which was then a rapidly developing science and that was gradually recovering numerous active ingredients from the plant kingdom. Newcomers to the list of compounds included cohobated water of cherry laurel, prussic acid, ether extract of male fern, precise preparation procedures for tincture of nux vomica and meadow saffron, and a process for obtaining morphine (*morphium*) starting of course from opium.

Meanwhile, in the province of Veneto some major changes were being made to the system that regulated pharmacies (33) in terms of the conduct of apothecaries when practicing their profession, their treatment of apprentices, their duty to the patient and the control of medical prescriptions. Compliance with these orders was also being regulated without prejudice of any kind, in terms of the quality of the medicaments, careful preparation of these and rigorous adherence to the new Austrian pharmacopoeia. Thus a whole new direction was to be taken by Venetian apothecaries in compliance with all these directives. In a collection of the documents and general prescriptions issued by the imperial government in 1837<sup>(34)</sup> we read that apothecaries were required to abide by some essential rules for dispensing medicaments, adhering strictly to the Austrian scale of fees and the pharmacopoeia. They were ordered to take special care to add the price of the remedy to the prescription "without any reduction", to note the name of the person who prepared it by affixing his seal. The penalty for contravention was a heavy fine. These documents also contained a thirty-seven page section devoted to the fees for the medicaments (35), for the pharmaceutical operations and for containers, as well as regulations governing weights and measures that obliged apothecaries to carry out a two-year check of their equipment and to stamp this when done.

*Progressus eximii et experimeta in chemia recentissima confirmata* – as the preface to this work reiterates – followed by a more detailed analysis of the pharmaceuticals and their more careful selection. The new century saw the dawning of an age in which science would undergo a major transformation.

The same pharmacopoeia<sup>(36)</sup> was reprinted in 1836, the only difference being that the preface contained some different signatures. The Protomedico (regulator of the medical profession) and President of the Faculty of Medicine remained the same, as did the representatives of the pharmaceutical guild, but now there were two different representatives of the medical practitioners. The presence of the two representatives of the pharmaceutical guild from the second edition on, led one to believe that the imperial administrators were taking serious notice of the opinion of practising pharmacists.

<sup>&</sup>lt;sup>(33)</sup> Collezione di leggi e regolamenti pubblicati dall'imperial regio governo austriaco, Venezia 1815-1824, ordinanza n. 7435-634, marzo 1834.

<sup>(34)</sup> Raccolta degli Atti del Governo e delle Disposizioni Generali emanate dalle diverse Autorità, vol. primo, dall'Imperial Regia Stamperia, Milano, 1837, pag 592.

<sup>(35)</sup> Taxa Medicamentorum in Pharmacopoee Austriacae Editione Quarta contentorum, in Raccolta degli Atti del Governo e delle Disposizioni Generali emanate dalle diverse Autorità, vol. primo, dall'Imperial Regia Stamperia, Milano, 1837, pgg 21-58.

<sup>&</sup>lt;sup>(36)</sup>Pharmacopoea Austriaca, editio quarta emendatior., typis Caes.Reg. Aulae et Status typographyae, Vindobonieae, 1836, pp 196+VI.



Despite the best efforts of the Austrian government to run an administration that was attempting to meet the needs of the occupied provinces, it is known that both Lombardy and Veneto took a dim view of the occupation and thus the inevitable tensions came to a head in 1848 with the revolutionary stirrings that, on 17 March led to the Venetian insurrection with the proclamation of the Republic of San Marco.

Reduced to starvation by the Austro-Hungarian siege, Venice held out for over a year and formed its own government, hoping for assistance from the Piedmont army. However, the Piedmont advance was tardy, particularly after the defeats of '48 and '49, and therefore the Venetian resistance turned out to be in vain.

1855 saw publication of the fifth Austrian Pharmacopoeia<sup>(37)</sup> this time with considerable changes, the individual ingredients and compounds, totalling 867 entries, were listed together in alphabetical order and those medicaments

"quorum dispensatio absque medici legitimi praescriptione inhibita est" were signalled with a cross. Thirty-four reagents were listed, followed by over twenty pages containing tables comparing weights, measures, specific weights, dilution and weight-to-volume ratios and also tables with lists of those substances or medicaments that should be stored in the dark or locked in cabinets. This was indeed a modern pharmacopoeia, complete yet slim-line, undoubtedly a useful source of reference for 19<sup>th</sup> Century pharmacists.

From the Annals of Science<sup>(38)</sup> of the Kingdom of Lombardy-Venetia published in 1833, it is already possible to see signs of the giants strides made by pharmaceutical science with the close study of and experimentation with the active ingredients obtained from the individual substances. It is also possible to detect the attention paid to modern works of a pharmaceutical nature such as The Universal Pharmacopoeia by A.J.L. Jourdan, a

<sup>(37)</sup> Pharmacopoea Austriaca, editio quinta, Caes. Reg. et imperii typographia, Viennae, 1855, pp 272+ VIII.

<sup>&</sup>lt;sup>(38)</sup> Annali delle Scienze del Regno Lombardo Veneto, tipi della Minerva, Padova, 1833.

member of the French Académie Royale de Médicine, whose first edition was printed in 1828<sup>(39)</sup>. This was a work with an avowedly modern approach which was causing quite a stir in the entire scientific world. In the *Giornale di Letteratura Scienze ed Arti* of Milan in 1835<sup>(40)</sup> express mention was made of the translation into Italian produced by Giovanni Battista Sembenini<sup>(41)</sup> as "as a work endowed with a great many additions containing the latest pharmaceutical developments, illustrations from the Austrian Pharmacopoeia and the content of all the newly published pharmacopoeias". This fifth edition of the Pharmacopoeia of the Austrian Empire was therefore a scientific treasure-trove, the fruit of half a century of extraordinarily prolific research.

The annexation, in 1859, of Lombardy to the Kingdom of Sardinia and the fact that the Italian peninsula was gradually being united under a single realm, with the exception of the Papal State, Trentino, Veneto and Venezia Giulia, caused considerable rebellion all over Venetian territory, culminating in what is known as the Third War of Independence. In reality, this was an Austro-Prussian war with the somewhat disappointing intervention of the Italian forces on the side of the Prussians, but, in the end, once the French got involved, this led to the resolution of the "Venetian question". Under the Treaty of Vienna, Veneto became part of Italy, being handed over by Austria to Napoleon and then to the Kingdom of Savoy in 1866.

At this point the Venetian pharmacists, along with their colleagues in the rest of Italy, were faced with a legislative void and they would have to wait until 1892 to witness the appearance of the first single pharmacopoeia for the whole Kingdom of Italy (42) which was the result of a tremendous effort to bring together and revise all the prescription manuals of the various provinces. It is impossible to know which texts the Venetian pharmacists referred to, but we may assume that they probably did what they had always done over the course of the centuries, relying on the vast number of medical and practical manuals available to them.

Meanwhile, in 1869, the Austro-Hungarian Empire had published the sixth edition of its pharmacopoeia<sup>(43)</sup>, which did not differ a great deal from its predecessor and which, as must not be forgotten, was still used by those parts of Italy not yet annexed to the Kingdom: Trentino, Alto Adige and Venezia Giulia.

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<sup>(39)</sup> Pharmacopée Universelle ou Conspectus des Pharmacopée... par A.J.L. Jourdan, Bailliere, Paris, 1828.
(40) Biblioteca Italiana o sia Giornale di letteratura, scienze ed arti..., tomo LXXIX, anno ventesimo, Milano, 1845. Pgg 414-416.

<sup>&</sup>lt;sup>(41)</sup> Farmacopea Universale di Jourdan, tradotta, corretta ed accresciuta da G. B. Sembenini, Venezia, 1831-1835 (fed. Bibl. ital. torn. 67°, pag. 248).

<sup>(42)</sup> Farmacopea Ufficiale del Regno d'Italia, tipografa delle Mantellate, Roma, 1892, pp 443 +VI.

<sup>&</sup>lt;sup>(43)</sup> Pharmacopoea Austriaca, editio sexta, Caes.reg. Aulae et Imperii typographia, Viennae, 1869, pp 293+X..

#### **ABSTRACT**

## PHARMACOPOEIAS IN THE VENETIAN REGION FROM THE FALL OF THE REPUBLIC TO ITALIAN UNIFICATION

At the end of the 18<sup>th</sup> Century almost every European country had its own pharmacopoeia. However, since Italy was split up into so many states, it had innumerable pharmacopoeias, both public and private.

This was not just the result of this particular political situation, but it was also typical of the attitude of Italian apothecaries whose lively creative imagination was based on their solid, centuries-long tradition built on the thriving spice trade in the Mediterranean region.

As members of a powerful guild, Venetian apothecaries had enjoyed extraordinary privileges under the Venetian Republic, and therefore they were reluctant to accept the reorganisation of the health system started by Napoleon and continued by the Hapsburg Empire. The Austrian authorities, wishing to prolong their leadership role, attempted to respect local traditions, but they nevertheless enforced a set of rules that obliged the apothecaries to follow the latest Austrian pharmacopoeias, of which 5 editions were published over the course of some 50 years.

