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Articles

FROM THE GREEK MEDICAL MANUSCRIPTS OF THE OTTOMAN EMPIRE TO THE PHARMACOPOEIA I OF THE GREEK STATE: PHARMACY AND POLITICAL CHANGE IN SOUTHEASTERN EUROPE

Athanasios Barlagiannis, Penelope Seriatou and Vaso Seirinidou

ABSTRACT: The article studies the transition from the medical manuscripts that circulated as a means of knowledge preservation and professional regulation in the early modern Greek world to the first edited pharmacopoeia of the Greek state in 1837. The transition is examined in parallel to the changes in the political, scientific and professional domains attested in southeastern Europe from the eighteenth to the middle of the nineteenth centuries. After an overview of the Greek state's legal interventions in the pharmaceutical trade, in the context of which the pharmacopoeia was promulgated, and of the efforts to translate the pharmaceutical terms by court physicians and pharmacists, the article compares the materia medica of the $E\lambda\lambda\eta vi\kappa\dot{\eta} \Phi\alpha\rho\mu\alpha\kappao\pi oti\alpha$ (Greek Pharmacopoeia) with that of two medical manuscripts that circulated in the period before the formation of the Greek state. By studying the process of incorporation and/or exclusion of pharmaceutical ingredients during the establishment of a new legal culture and of a more formal way of regulating pharmacy in the southeastern Balkans, the article discusses important issues in the history of pharmacy, especially its relationship to politics, ideology and professional rivalries.

The habit of listing substances with therapeutic value (*materia medica*) dates back to ancient times.¹ Specialists of therapy, and also lay people at times, wrote down what seemed to them to be useful for many, if not all, types of ailments.

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¹ The Egyptian papyrus Ebers, containing one of the most ancient texts with medical recipes, dates to 1600 BC. Erwin H. Ackerknecht, *Ιστορία της Ιατρικής*, trans. Vasilis Paschalis, Giorgos Iliadis, Vasilis Karatzoulis (Athens: Marathia, 1998), 53.

The Historical Review/La Revue Historique Section de Recherches Néohelléniques / Institut de Recherches Historiques Volume XIX (2022) These medical manuscripts were copied through the centuries, creating a certain corpus of drugs and substances that were identified as safe and efficacious: plants, plant parts, metals, stones, minerals, animal parts, extracts or excreta from organisms and chemical substances. This consensus over the *materia medica*, even though their natural origins explain why some substances are used in one place and are absent in another, owes much to the work of the first-century AD Greek healer Dioscorides.² Thanks to his career as a military doctor in the Roman legions and to previous works like Crateus' *Rhizotomicon* (first century BC),³ he was able to register, categorise and classify over 600 medicinal plants. His *Περί ύλης ιατρικής (De materia medica)* was perhaps the most influential pharmaceutical text in Europe until about 1500, while in the Ottoman Empire it continued to exert a steady influence even beyond that.⁴

The Greek medical manuscripts of the Ottoman era that were circulating within the empire and were written in modern Greek (with differences in language owing to the needs and origins of the authors)⁵ vary in size, quality and content, ranging from simple notebooks to specialised treatises. Besides medicines, recipes and medicinal ingredients, they could contain information about diseases and their treatment, dietary rules as well as information about the human body and the functions of its organs.⁶ Even though some of them could also contain practical information, like cooking recipes, in order to offer

⁵ Nikolaos E. Papadogiannakis, *Κρητικό ιατροσόφιον του 19ου αιώνα* (Rethymno: Istoriki kai Laographiki Etaireia Rethymnis, 2001), 27; Tina Lendari and Io Manolessou, "The Language of *Iatrosophia*: A Case-study of Two Manuscripts of the Library at Wellcome Collection (MS.4103 and MS.MSL.14)," in *Exploring Greek Manuscripts in the Library at Wellcome Collection in London*, ed. Petros Bouras-Vallianatos (London: Routledge, 2020), 66–112. For a British example, see Emily Kesling, *Medical Texts in Anglo-Saxon Literary Culture* (s.n.: Boydell and Brewer, 2020).

⁶ For a recent study on Greek medical manuscripts, Penelope Seriatou, "Από τα γιατροσόφια στα ιατρικά εγχειρίδια: Η διαδρομή προς την επιστημονική ιατρική γνώση και περίθαλψη στον ελληνικό χώρο κατά τον 180 και 190 αιώνα" (PhD diss., University of Athens, 2021). See also John Karas, "Η επιστημονική–φιλοσοφική σκέψη στον ελληνικό χώρο κατά την περίοδο της Τουρκοκρατίας: Η περίπτωση των φυσικών–θετικών επιστημών" (PhD diss., University of Ioannina, 1984), pt. 2.

² Paula De Vos, "European Materia Medica in Historical Texts: Longevity of a Tradition and Implications for Future Use," *Journal of Ethnopharmacology* 132, no. 1 (2010): 28–47.

³ Jerry Stannard, "The Herbal as a Medical Document," *Bulletin of the History of Medicine* 43, no. 3 (1969): 213–14.

⁴ Efthalia Tsagkala, "Οι επιβιώσεις του Διοσκουρίδη στα δημοσιευμένα χειρόγραφα γιατροσόφια της Ηπείρου. Συμβολή στην έρευνα της Ιστορίας της ιατρικής και της λαϊκής ιατρικής" (PhD diss., University of Ioannina, 2007).

all-round advice on the best way to manage a household (and meet its health needs), they constitute an important source for the history of medicine.⁷ They were handbooks that copied and combined texts from ancient Greek, Byzantine and Arab medical traditions,⁸ in an effort to preserve and further promote pharmaceutical and medical knowledge, especially its practical curative side. Sometimes they updated the therapeutic tradition, with the incorporation, for example, of quinaquina⁹ or of other recipes personally tested by the author.¹⁰ The medical manuscripts represent a centuries-long effort to register the best therapeutic substances for the diseases found in a specific geographical area according to the ideas of reciprocity between the human body and its environment.¹¹

The history of the medical literature and of its uses should take cognisance of and include an important factor underway since the fifteenth century: modern state formation. States had, at first, an economic interest in ensuring a flourishing pharmaceutical trade which was taken up by merchants, apothecaries and doctors (educated ones and empirics).¹² Later, as seventeenth-century

⁹ Feza Gunergun and Seref Etker, "From Quinaquina to 'Quinine Law': A Bitter Chapter in the Westernization of Turkish Medicine," *Osmanli Bilimi Arastirmalar* 14, no. 2 (2013): 41–68. These handbooks were also necessary possessions for merchants, who would want to discern the quality of their merchandise. See Ingeborg Swart, Mieke Beumer et al., "Bodies of Plant and Animal kingdom: An Illustrated Manuscript on *materia medica* in the Netherlands (ca. 1800)," *Journal of Ethnopharmacology* 237 (2019): 239–44.

¹⁰ Seriatou, "Από τα γιατροσόφια στα ιατρικάεγχειρίδια," 169-71.

¹¹ Christos Papadopoulos, "Post-Byzantine Medical Manuscripts: New Insights into the Greek Medical Tradition, its Intellectual and Practical Interconnections, and Our Understanding of Greek Culture," *Journal of Modern Greek Studies* 27 (2009): 107–30.

¹² For the work of apothecaries and the pharmacists that oscillated between profit and medical assistance, see Barbara Di Gennaro Splendore, "Craft, Money and Mercy: An Apothecary's Self-Portrait in Sixteenth-Century Bologna," *Annals of Science* 74, no. 2 (2017): 91–107; R. Schepers, "Pharmacists and Medical Doctors in Nineteenth-Century Belgium," *Sociology of Health and Illness* 10, no. 1 (1988): 68–90.

⁷ Henry E. Sigerist, "The Latin Medical Literature of the Early Middle Ages," *Journal of the History of Medicine and Allied Sciences* 12, no. 2 (1958): 127–46.

⁸ Agamemnon Tselikas, "Τα ελληνικά γιατροσόφια: Μια περιφρονημένη κατηγορία χειρογράφων," in Ιατρικά βυζαντινά χειρόγραφα, ed. Thanasis Diamantopoulos (Athens: Domos, 1995), 57–70; Alain Touwaide, "Byzantine Hospital Manuals (*Iatrosophia*) as a Source for the Study of Therapeutics," in *The Medieval Hospital and Medical Practice*, ed. Barbara S. Bowers (Aldershot: Ashgate, 2007), 147–73; Touwaide, "Arabic into Greek: The Rise of an International Lexicon of Medicine in the Medieval Eastern Mediterranean?," in *Vehicles of Transmission, Translation, and Transformation in Medieval Textual Culture*, ed. Robert Wisnovsky, Faith Wallis, Jamie Fumo and Carlos Fraenkel (Turnhout: Brepols, 2011), 196.

states were becoming more and more involved with their subjects' health interests,¹³ this merchandise became a central object for state regulation and an important incentive for institutional expansion. It was in this context that state pharmacopoeias, which should be considered as distinct from all other medical texts, appeared. A pharmacopoeia is the official list of drugs (simples, compounds and chemically prepared) in which the professionals, recognised as such by an authority, could search for a drug's qualities and active components as well as the ways of conservation and the measures and weights by which to apply it.¹⁴

The first official European pharmacopoeia was the *Ricettario Fiorentina*, published in 1498 in the Italian city of Florence.¹⁵ It was not a *materia medica* but a formulary, noting the officially recognised modes of drug preparation. What distinguished it then from other formularies so that it is considered as the first (modern) pharmacopoeia? Its publication was demanded and imposed by a recognised central authority. George Urdang identified the development of pharmacopoeias (and their iconography) with political changes and reforms worldwide.¹⁶ Pharmacopoeias were "adapted to the needs of a certain political unit" and were "a matter of national ambition, a part and a proof of national sovereignty and unity".¹⁷ As it will be shown next, the *Ελληνική Φαρμακοποιΐα* (*Greek Pharmacopoeia*) was in no way unaware of these developments.

There is a legalistic aspect behind the publication of a pharmacopoeia: "The development of obligatory pharmacopoeial standards" demand the "force of a legal authority".¹⁸ In the absence of such an authority, it was actually the Hippocratic oath, and hence "an idealistic code of ethical conduct", that constituted a defence against malpractice and drug adulteration.¹⁹ In other words, with the publication of a pharmacopoeia the very notions of patent medicines, illegitimate drugs, quackery and proprietary medicines become concretely and

¹³ Olivier Faure, *Histoire sociale de la médecine (XVIIe–XXe siècles)* (Paris: Anthropos, 1994), 33.

¹⁴ Mark J. Wiggins, and Joseph A. Albanese, "A Brief History of Pharmacopoeias: A Global Perspective," *BioPharm International eBook* (September 2019): 2.

¹⁵ James Shaw and Evelyn Welch, *Making and Marketing Medicines in Renaissance Florence* (Amsterdam: Rodopi, 2011),43.

¹⁶ George Urdang, "Pharmacopoeias as Witnesses of World History," *Journal of the History of Medicine and Allied Sciences* 1, no. 1 (1946): 46–70.

¹⁷ Ibid., 46–47.

¹⁸ R.G. Penn, "The State Control of Medicines: The First 3000 Years," *British Journal of Clinical Pharmacology* 8, no. 4 (1979): 294.

¹⁹ E. Fullerton Cook, "History of the Pharmacopoeia," *Food, Drug, Cosmetic Law Quarterly* 1, no. 4 (1946): 518.

meaningfully constructed.²⁰ Moreover, a printed pharmacopoeia, whose content, under the threat of a punishment, could be copied out but not changed, as was the case with the medical manuscripts, created a space within which the law decided which drugs or components were legal and safe to use and which was illegal and harmful. The pharmacopoeia was a legal text, its publication was supported by the justice system which intervened, thus, in the pharmaceutical domain.

The article is the result of a collaborative research project into the political, economic, professional and scientific aspects of the history of pharmacology in southeastern Europe. The research focuses on the transition from the use of the medical manuscripts, as a means for medical knowledge circulation and drug regulation in the early modern Greek world in the Ottoman Empire, to the publication in 1837 of the first officially printed pharmacopoeia in the region. The transition was slow and took time mainly because the publication of the pharmacopoeia, being linked more to transformations in politics, economy and professional organisation than to advances in the scientific, that is, pharmacological, domain, was not readily accepted by all therapy professionals. As is shown in the first part of the article, the shift from handwritten to edited volumes on pharmacotherapeutics was largely related to the increasing need to formally organise the pharmacist profession, to establish its limits and boundaries and to promote a stricter way of scientific research.

This shift and its relevant legal and professional dynamics had important scientific consequences. In a period of transition from the Ottoman Empire to the Greek state, as the new state was constructing its identity and trying to distance itself from the past and to align more to western Europe and to its science, the court's pharmacists were asking themselves what writing a "Greek" pharmacopoeia would entail: did it have to imitate western European pharmaceutical standards? Was it to turn exclusively to ancient Greek medicine? Or was it to integrate substances used already by local physicians and pharmacists? The indications seem to suggest that the Greek administration and its physicians tried to satisfy all three options. At least, this deduction can be

²⁰ J. Worth Estes, "The Pharmacology of Nineteenth-Century Patent Medicines," *Pharmacy in History* 30, no. 1 (1988): 3–18; Alex Berman, "Conflict and Anomaly in the Scientific Orientation of French Pharmacy, 1800–1873," *Bulletin of the History of Medicine* 37, no. 5 (1963): 440–62 and, for a contemporary globalised perspective, Maurice Cassier, "Pharmaceutical Patent Law In-the-Making: Opposition and Legal Action by States, Citizens, and Generics Laboratories in Brazil and India," in *Ways of Regulating Drugs in the 19th and 20th Centuries*, ed. Jean-Paul Gaudillière and Volker Hess (Houndmills: Palgrave Macmillan, 2013), 287–317.

derived from the comparison, made in the second part of the article, between the substances contained in two medical manuscripts of the Ottoman period written in Greek and those integrated into the Greek pharmacopoeia.²¹

By bringing together analytical methods from palaeography, the social history of medicine, the political history of southeastern Europe and the history of pharmacology, the article examines the multiple dynamics (scientific, political, economic, textual and professional) behind the publication of the *Greek Pharmacopoeia I*. These dynamics are described in terms of *discipline* and *standardisation*: the social and political discipline imposed by the Greek state's administration went hand in hand with professional organisation and scientific standardisation, that is, a discipline influencing the ways of proving, observing, curing, demonstrating, controlling, classifying and diffusing knowledge.²²

The Greek Pharmacopoeia I in a Period of Political Transition

When the Greek Kingdom was formed in 1832–1833, it was put under the rule of the Bavarian court of King Othon (1815–1867). His cameralist administrators, such as Georg Ludwig von Maurer (1790–1872), who was responsible for the educational matters of the new state, thought of their work as a rational intervention in societal and scientific issues guided by the unified action of the law. The body of law produced during Othon's reign (1833–1862) was enormous compared to subsequent years, as his court aspired to organise every aspect of social life in the Greek *Polizeistaat*, and, thus, to establish a medical police.²³

The former Ottoman regions under Othon's government lacked any formal organisation in their medical spheres. Even though there were concrete local

²¹ For an Indian example, see Nandini Bhattacharya, "From Materia Medica to the Pharmacopoeia: Challenges of Writing the History of Drugs in India," *History Compass* 14, no. 4 (2016): 131–39.

²² For the notion of discipline, see Max Weber, "The Meaning of Discipline," in *From Max Weber: Essays in Sociology*, ed. H.H. Gerth and C. Wright Mills (New York: Oxford University Press, 1946), 253–64. Very important are also the works of Norbert Elias, especially his Περί χρόνου (Athens: Eikostou Protou, 2004).

²³ For cameralism and the police, see Marc Raeff, *The Well-Ordered Police State: Social and Institutional Change through Law in the Germanies and Russia, 1600–1800* (New Haven: Yale University Press, 1983) and Keith Tribe, "Cameralism and the Science of Government," *Journal of Modern History* 56, no. 2 (1984): 263–84. For medical police, George Rosen, "Cameralism and the Concept of Medical Police," *Bulletin of the History of Medicine* 27 (1953): 21–42. For the Greek case, see Athanasios Barlagiannis, "Hygiène publique et construction de l'état grec, 1833–1845: La police sanitaire et l'ordre public de la santé" (PhD diss., École des hautes études en sciences sociales, 2017), which offers a comprehensive study of Greek

medical realities, that is, "social relations", as Charles Rosenberg considers them,²⁴ with their own logic that shared conceptual frameworks and adhered to certain rules for preparing and dispensing medicines,²⁵ it is true that the Ottoman medical market, if there was one at all, was unregulated on the eve of the Greek state's formation. "In Greece," writes Maurer, "the idea of controlling physicians, midwives, pharmacists, etc., was a thing unknown. Everybody could exercise his/her profession in total liberty concerning the place and the manner ... That is the reason, it was of an utmost necessity to regulate all these matters."26 There is, of course, an ideological element in Maurer's statement since he was trying to legitimise the new regime by arguing that the king was bringing reform, order and novelty. However, this clear-cut image of discontinuity with the past underlines a historical change in the Ottoman medical market at the end of the eighteenth century: the number of people who were prescribing medicines was growing, making the need for a formal distinction between legitimate and illegitimate medical practice more urgent than before.

The European eighteenth century saw an expansion of the medical market and of drug consumption as a result of European imperialism, of the intensification of trading exchanges, and of transformations in mental attitudes that were beginning to consider health as an important element for economic growth, security and happiness.²⁷ The Ottoman Empire was not divorced from these changes:²⁸ it was a time when its political structures, its administration and

²⁷ Faure, *Histoire sociale de la médecine*, 33; Harold J. Cook and Timothy D. Walker, "Circulation of Medicine in the Early Modern Atlantic World," *Social History of Medicine* 26, no. 3 (2013): 337–51; Benjamin Breen, "Drugs and Early Modernity," *History Compass* 15, no. 4 (2017), https://doi.org/10.1111/hic3.12376.

²⁸ Daniel Panzac, *La peste dans l'Empire ottoman*, 1700–1850 (Leuven: Peeters, 1985); Murphey Rhoads, "Ottoman Medicine and Tranculturalism from the Sixteenth

public health legislation. Also Barlagiannis, Η υγειονομική συγκρότηση του ελληνικού κράτους (1833–1845) (Athens: Estia, 2018).

²⁴ Charles E. Rosenberg, "The Therapeutic Revolution: Medicine, Meaning, and Social Change in Nineteenth-Century America," in *Explaining Epidemics and Other Studies in the History of Medicine* (Cambridge: Cambridge University Press, 1992), 9.

²⁵ Athanasios Barlagiannis, "Η ταυτότητα του επίσημου ιατρικού σώματος στην Ελλάδα του Όθωνα: Ανάμεσα στο ευρωπαϊκό επιστημονικό παράδειγμα και τις ντόπιες πολιτισμικές και πολιτικές πραγματικότητες," in *Identities in the Greek World (from 1204 to Present Day)*, ed. Konstantinos A. Dimadis (Athens: European Society of Modern Greek Studies, 2011), 5:251–64.

²⁶ Georg Ludwig von Maurer, Ο Ελληνικός Λαός: Δημόσιο, ιδιωτικό και εκκλησιαστικό δίκαιο από την έναρξη του Αγώνα για την ανεξαρτησία ως την 31η Ιουλίου 1834, trans. Olga Rombaki (Athens: Tolidi, 1976), 2:495.

its economy were also undergoing significant transformations.²⁹ The empire's inhabitants were expressing an increasing interest in their health and, as a result, the number of healers and merchants looking to take advantage of this interest was increasing. The phenomenon of the $\kappa o \mu \pi o \gamma i \alpha v v i \tau \epsilon \zeta$, the seasonal travelling merchants who could go as far as Crete and Asia Minor, even India, to sell the natural products of their mountains, was in no way a fortuitous one. They had started to make their presence felt around 1670 when they found a way out of their poverty by supplying the growing medical market place of the Ottoman Empire and beyond.³⁰ Merchants, army men, physicians and sailors were traveling abroad more frequently and, progressively, the number of Greek subjects of the sultan studying in foreign medical faculties multiplied. Conversely, European subjects, like the infamous καλογιατροί, individuals who (purportedly) practiced medicine and pharmacy, found a profitable way of living in the Ottoman Empire. Their numbers were such that it was believed by the Christians of the empire that "anyone who was born or who has travelled to the West is a doctor or knows medicine".³¹

During this period of transformations, the number of medical manuscripts and of the printed texts (herbals, pharmacopoeias, formularies, *iatrosophia* and manuals) multiplied,³² after the first printed medical text in Greek appeared in

²⁹ Donald Quataert, *The Ottoman Empire*, *1700–1922* (New York: Cambridge University Press, 2005). For an analysis of the changes in health and medicine within the context of the transformations in the millet administration, see Athanasios Barlagiannis, *Ιατρική ιστορία* της Επανάστασης του 1821: Οι απαρχές της συγκρότησης της ελληνικής δημόσιας υγείας, *1790–1831* (Athens: Hellenic Open University Press, 2022), chap. 1.

³⁰ Giorgos Avogianos and Christina Kyriakopoulou, "Οι κομπογιαννίτες και τα βότανά τους," Ηλιοχώρι (Ντομπρίνοβο) Ζαγορίου website, 14 January 2009, https://iliochori. wordpress.com./2009/01/14/647/. Also Georgios Vavaretos, Κομπογιαννίτες, Ματσουκάδες: Οι ξακουσμένοι αυτοδίδακτοι γιατροί απ'το Ζαγόρι της Ηπείρου (Athens: Epirotiki Etairia Athinon, 1972)

³¹ Jean Bouros [Ioannis Vouros], "Quelques mots sur l'état actuel de la médecine en Grèce," *Bulletin de l'Académie Royale de Médecine de Paris* 7 (1841–1842): 871.

³² According to our count, based on Yiannis Karas, Οι επιστήμες στην Τουρκοκρατία: Χειρόγραφα και έντυπα, vol. 3, Οι επιστήμες της ζωής (Athens: Estia, 1994). See also, Dimitrios Karaberopoulos, Η ιατρική ευρωπαϊκή γνώση στον ελληνικό χώρο, 1745–1821 (Athens: Stamoulis, 2003).

through the Eighteenth Century," Bulletin of the History of Medicine 66, no. 3 (1992): 376–403; G.A. Russell, "Physicians at the Ottoman Court," Medical History 34 (1990): 243–67, and Nuran Yıldırım, A History of Healthcare in Istanbul (Istanbul: İstanbul Üniversitesi, 2010). Specifically for the Greek Orthodox communities, Efi Kanner, Φτώχεια και φιλανθρωπία στην Ορθόδοξη κοινότητα Κωνσταντινούπολης, 1753–1912 (Athens: Katarti, 2004).

1724.³³ Alain Touwaide has traced 160 of these manuscripts³⁴ while Agamemnon Tselikas thinks that more than 250 have survived.³⁵ The increase in the numbers demonstrates, on the one hand, their social necessity and, on the other, the power balance within a profession that was expanding, or that was just coming into being. The thriving trade in cures favoured not only physicians and other professionals of therapy but also the unscrupulous. The distinction between the two was difficult to detect and the flourishing medical literature tried to clarify matters while satisfying three more social and scientific requirements: the patient's need to help themselves in the absence of specialised care (self-medication); the transmission of knowledge within the profession; and the standardisation of pharmacy.

Pharmaceutical literature was then faced with a contradiction: on the one hand, writers, authors and copyists would want to create the standards of pharmacotherapy and to homogenise it, in order to protect patients from exploitation. On the other, since there was no formal or institutional demarcation line between legal and illegal practice, the medical manuals reflected the rivalry between all those aspiring to control the definition of illegality and the process of standardisation.³⁶ Monks, priests, physicians, medical empirics and cunning folk (and anyone else, for that matter) were producing texts that could not, however, deal with the problem of standardisation and homogenisation since the texts' quality was not controlled by any official institution. Since most texts were handwritten, it was particularly difficult to assure that their copies respected any procedure of knowledge transmission. Anyone could add anything to a text under Hippocrates' authority. As one manuscript stated:

We have written to you, Man, many interpretations and many drugs ... The reason is that if one [cure] isn't found, you should use

³³ Giorgos Veloudis, Το ελληνικό τυπογραφείο των Γλυκήδων στη Βενετία (1670–1854): Συμβολή στη μελέτη του ελληνικού βιβλίου κατά την εποχή της Τουρκοκρατίας (Athens: Bouras, 1987), 200, and Dimitrios Karamperopoulos, Ιστορία της ιατρικής: Ελληνική βιβλιογραφία 1750–2000 (Athens: Stamoulis, 2009).

³⁴ Alain Touwaide, *Greek Medical Manuscripts – Diels' Catalogue*, vol. 2.1, *Diels Catalogue with Indices* (Berlin: De Gruyter, 2019).

³⁵ Agamemnon Tselikas, "Η συνάντηση Ανατολής και Δύσης στους νεοελληνικούς ιατροσοφικούς κώδικες," Θέματα Ελληνικής Παλαιογραφίας 34 (2004): 556; Penelope Seriatou, "Μαντζούνια και αλοιφές: Συνταγές ίασης της λαϊκής ιατρικής σε ένα γιατροσόφι του 18ου αι." (Master's thesis, National and Kapodistrian University of Athens, 2013), 39–45.

³⁶ See Elizabeth L. Eisenstein, *The Printing Press as an Agent of Change: Communications and Cultural Transformations in Early-Modern Europe* (Cambridge: Cambridge University Press, 1979), 80.

the other one. And if you don't find that one, you use another \dots And you, as a man, you can chose the one from the other and do the one that is more useful as you discern and act.³⁷

Readers of the medical literature were left to decide for themselves, since no one else could officially and formally assure them of a medicine's safety and efficacy.

Even though Ottoman society had already established informal ways to supervise pharmaceutical enterprises (through the family or the guild institution, traditional practices or educating its professionals in community schools), the multiplication of those offering a medicinal treatment created the need by the turn of the nineteenth century to intensify the practices to control them.³⁸ It was not by chance then that in 1818 the $\Phi \alpha \rho \mu \alpha \kappa \sigma \pi o i$ $\alpha \Gamma \epsilon \nu i \kappa \eta$ (General Pharmacopoeia) was published in Constantinople by the physician and archimandrite Dionysios Pyrros.³⁹ It was a scientific endeavour linked to the process of organising the Orthodox millet.⁴⁰ However, even if it seems that the patriarch was involved in its publication and that many "notables of the Morea" were among its subscribers, it is far from sure that the General Pharmacopoeia constituted the official pharmacopoeia of the Orthodox Church. Due to the administrative conditions of the period, any controlling effort by any formal institution could not be anything more than occasional. The question, thus, of who would be incorporated in the profession and who would be excluded remained; the Greek administration of the subsequent period tried hard to resolve it.

The efforts of the first two decades of the nineteenth century in fact paved the way for the Greek court's interventions after 1833. From a broader perspective, the Greek medical police neither updated nor reformed the Ottoman past, it

³⁷ Cited in Tselikas, "Τα ελληνικά γιατροσόφια," 67.

³⁸ Barlagiannis, Ιατρική ιστορία της Επανάστασης του 1821, 46–55.

³⁹ See Ioanna Stavrou and Eythimios Bokaris, "Το 'παζλ' Χυμικής/Χημείας – Φαρμακοποιίας/Φαρμακίας στις αρχές του 19ου αιώνα στις ελληνόφωνες περιοχές της Οθωμανικής Αυτοκρατορίας," in Τεχνολογία και Κοινωνία στην Ελλάδα: Μελέτες από την Ιστορία της Τεχνολογίας και τις Σπουδές Επιστήμης και Τεχνολογίας (Athens: Ekdotiki Athinon, 2015), 55–80.

⁴⁰ The exact same process, if not more rapid and successful, had produced the Nomokanons, texts with a juridical content. Many manuscripts codifying ecclesiastical and family law, adapted to local customs and to local contexts, were circulating down to the eighteenth century, when the compilation of the Byzantine jurist Constantinos Armenopoulos was edited and imposed as the only juridical document to all Christians of the Ottoman Empire by a consolidated ecclesiastical power. See Socrate Petmézas, "L'organisation ecclésiastique sous les Ottomans," in *Conseils et mémoires de Synadinos, prêtre de Serrès en Macédoine (XVIIe siècle)*, ed. Paolo Odorico (Paris: Association Pierre Belon, 1996), 505.

was rather building on it, incorporating practices and actors, and multiplying or, more precisely, intensifying medical surveillance.

A police force is an organisation authorised by a collectivity to regulate social relations within itself by utilising, if need be, physical force. Therefore, when the word police is used it should be understood in terms of a practical function and not in terms of a given body of men.⁴¹

A *Polizeistaat* was not about changing things, nor dismantling local social life; its government was "manipulating, maintaining, distributing, and re-establishing relations of force".⁴² In other words, King Othon's medical police was more to do with past political and scientific efforts than its administrators would have acknowledged openly, even though novel institutions and practices were indeed introduced, like the *Pharmacopoeia I*.

The Greek Pharmacopoeia I (Pharmacopoea Graeca iussu regio) served

the need to bring to [Greece] some order to the kind and to the preparation of medicines, because, since there was no university in the Greek state, nor physicians and pharmacists returning from different European universities and schools to prescribe and prepare medicines according to the method they were taught; as a result ... there is obvious damage for the diseased and for physicians and pharmacists alike.⁴³

The search for order and policing in the medical marketplace brings to mind the notion of "sanitary security" (*sécurité sanitaire*), as analysed by Sophie Chauveau: "This notion describes the project for the control and the surveillance of pharmaceutical products in order not to damage public health, and the guarantee that this security will be employed is one of the main attributes of the medicament, even for the judicial domain."⁴⁴ The pharmacopoeia, backed by the state's force and judiciary system, guaranteed public health.

⁴¹ David H. Bayley, "The Police and Political Development in Europe," in *The Formation of National States in Western Europe*, ed. Charles Tilly (Princeton: Princeton University Press, 1975), 328.

⁴² Michel Foucault, *Security, Territory, Population, Lectures at the Collège de France 1977–1978*, trans. Graham Burchell (London: Palgrave Macmillan, 2007), 407.

⁴³ From the Introduction to the 1837 Greek Pharmacopoeia.

⁴⁴ Sophie Chauveau, "Genèse de la 'sécurité sanitaire': Les produits pharmaceutiques en France au XIXe et XXe siècles," *Revue d'histoire moderne et contemporaine* 51, no. 2 (2004): 91.

Furthermore, the pharmacopoeia reinforced an important element in the circulation of pharmaceutical knowledge: the printed volume. The printing press had a special impact on knowledge production and circulation. A printed book represents a "closed" or a definite world whose content cannot be easily renegotiated.⁴⁵ Even if readers were using it as if it were a manuscript, making notes on it, corrections to or copies from it, the printed book opened the way to start envisaging the text as the result of a process of proving, experimenting and acquiring knowledge and not merely as part and parcel of that process. Interestingly, the debate as to whether a printed book or a manuscript was the best means to circulate knowledge and scientific deliberation was not easily answered by the Christian physicians of the Ottoman Empire who were accustomed to expressing doubts about the former's credibility.⁴⁶ As studies have shown, medical epistemology guided the text editing during the process of translation and transcription of a manuscript⁴⁷ and, conversely, the book's format has had a decisive role in the history of science.48 In other words, a pharmacopoeia could only be a printed text.

The *Pharmacopoeia* was compiled by the German chemist Xaver Landerer (1809–1885), chief pharmacist of the Greek king, member of the Medical Council and professor of pharmacology, chemistry and botany at the Athens Medical Faculty and at the Athens School of Pharmacy; Josef Sartori (1809–1880), a German who was employed as a royal pharmacist; and by Ioannis Vouros (1808–1885), a physician who served as secretary to the Medical Council and whose dissertation (in the University of Halle) was on Greek pharmacology.⁴⁹ Three elements are worth noting here: first, pharmacists and chemists played a central role in the compilation of the pharmacopoeia, something which was an innovation in a period when physicians edited other nations' pharmacopoeias;

⁴⁵ Walter J. Ong, Orality and Literacy: The Technologizing of the World (London: Routledge, 2002), chap. 5.

⁴⁶ Triantafyllos E. Sklavenitis, "Η δυσπιστία στο έντυπο βιβλίο και η παράλληλη χρήση του χειρόγραφου," in *Το βιβλίο στις προβιομηχανικές κοινωνίες* (Athens: INR/NHRF, 1982), 283–93.

⁴⁷ Faith Wallis, "The Experience of the Book: Manuscripts, Texts, and the Role of Epistemology in Early Medieval Medicine," in *Knowledge and the Scholarly Medical Traditions*, ed. Don Bates (Cambridge: Cambridge University Press, 1995), 101–26.

⁴⁸ Andrian Johns, "The Uses of Print in the History of Sciences," *Papers of the Bibliographical Society of America* 107, no. 4 (2013): 393–420.

⁴⁹ Ioannis Vouros, Dissertatio inauguralis de pharmacologia graecorum veterum in genere quam consensu facultatis medicae Halensis, ut Doctoris medici gradum rite adipiscatur AD D. XXXI Iulii CIDIDCCCXXIX. Publico examinis ubiicit Ιωάννης Βούρος, Chius (Halle: Gebauer, 1829).

second, none of them was born within the Greek state's borders (Vouros was from Chios), and third, all of them had studied in a German state. The king chose the editors of the pharmacopoeia from professionals with studies in German universities since they had to have access to the Bavarian Pharmacopoeia, which served as the model for the Greek one.⁵⁰ The Bavarian and some French administrators of the royal court saw their role as civilising a former Ottoman province, and "civilisation" meant at the time "being a European".⁵¹ The science of pharmacy in Greece should, then, have been a European one. But European pharmacy was not unknown to most, if not all, Greek physicians and pharmacists, since they were educated in European universities, especially Italian and central European ones.⁵² The choice of the editors, all of them foreigners to the local social conditions of the Greek state, was tied to larger administrative choices made by the king, as John Petropulos has underlined: Othon wanted to make sure that his administrators were loyal to his person and not to local warlords and local political elites. Landerer, Sartori and even Vouros did not (yet) have such ties with local societies and were absolutely dependent on the king's goodwill.53

These personnel choices had indirect influences on the science of pharmacy. Pharmacy was becoming irrelevant at any national and local context, thus contradicting the Paracelsian idea that, in the words of a Greek medical empiric, "God is not so naive to have the fevers in Greece and their cures in China."⁵⁴ The administration of a medication, proposed by a "Bavarian" Pharmacopoeia and adopted by the "Greek" one, no longer depended on individual and local "constitutions" but on the action of a particular substance on a particular human condition. The beginnings of scientific universality and drug specificity was put in place in 1837, thanks to the specific choices made by the court, even though the

⁵⁰ Skevos Philianos and Helen Skaltsa, "Étude comparative de la première édition de la Pharmacopée hellénique (1837, 1868) et de la pharmacopée bavaroise (1822)," 31st International Congress for the History of Pharmacy, Heidelberg, 1993. Professor Helen Skaltsa has written extensively on the Greek Pharmacopoeia. We would like to thank her for giving us access to the abovementioned paper.

⁵¹ John A. Petropoulos, Πολιτική και Συγκρότηση Κράτους στο Ελληνικό Βασίλειο (1833– 1843) (Athens: National Bank of Greece, 1997), 1:194.

⁵²Manolis Patiniotis, "Scientific Travels of the Greek Scholars in the Eighteenth Century," in *Travels of Learning. A Geography of Science in Europe*, ed. Ana Simões, Ana Carneiro and Paula Maria Diogo (Dordrecht: Kluwer Academic, 2003), 58–63.

⁵³ For a further analysis of these administrative choices by the king, see Barlagiannis, *Η* υγειονομική συγκρότηση, 72–79.

⁵⁴ Cited by Vavaretos, Κομπογιαννίτες, Ματσουκάδες, 45. For Paracelsus, see Agnes Arber, *Herbals: Their Origin and Evolution. A Chapter in the History of Botany*, 1470–1670 (Cambridge: Cambridge University Press, 1912), 217–18.

direct purpose of the Bavarian administration was actually to assist the adaption of the Bavarian pharmacy to local conditions in Greece.

This being so, the pharmaceutical enterprise of 1837 could not hope to completely satisfy the principle of scientific universality. The effort to compile a "Greek" pharmacopoeia from the "Bavarian" one was one of accommodation, adaptation and translation. At a period of nation building and nationalism, the kind of pharmaceutical substances imposed by the Pharmacopoeia of 1837 had still to be "Greek", that is, the pharmacopoeia should comprise "old and new medicines that we know by experience that physicians use in Greece".⁵⁵ Scientifically, the effort had two outcomes. Firstly, physicians slightly distanced themselves from Paracelsus. Even if a "particular pathology" or a "special physiology" was impossible to exist only in one country as distinct to another,⁵⁶ diseases did present themselves with different aspects depending on the localities and on the climate and, hence, demanded not so much different cures, but different quantities of the same drug as was applied universally.⁵⁷ The idea differed from the one already expressed in a manuscript "regarding the constitution and the genre [$y \notin voc$] of the plants, the stones and the metals" that required the "doctor to know his art as well as the way all other things were made and their constitution".58

Secondly, the *Pharmacopoeia* represented an enormous work of translation and, eventually, of the establishment of Greek pharmaceutical terminology. The translating enterprise, which was not novel in the region but was the most successful, was fundamental to the development of pharmacy in Greece. Until 1832–1833, a pharmacist used the language of his studies (French, Latin but mostly Italian), introducing thus "the confusion of the languages of Babel". For Vouros, the author of that observation, the solution was to impose Latin as a lingua franca.⁵⁹ His opinion was expressed in 1831. Six years later the

⁵⁵ From the Introduction to the 1837 Greek Pharmacopoeia.

⁵⁶ Nicolaos P. Parissis and Jean A. Tetzis, *De l'île d'Hydra (Grèce) au point de vue médical et particulièrement du Tzanaki, maladie spéciale de l'enfance et des maladies des plongeurs* (Paris: Moquet, 1881), 5–6.

⁵⁷ See the opinion expressed in 1847 by the Greek Society of Medicine, General State Archives (GAK), Vlachoyiannis Collection, f. D56. The idea did not always promote national unification; it could also undermine it. For example, the local physician on the island of Santorini thought that "the maximum of a dose proposed by the Pharmacopoeias is given here as a minimum of it" because of "the more powerful constitution" of the inhabitants, Iosif De-Kigallas, Γενική στατιστική της νήσου Θήρας (Ermoupoli: Typ. G. Melistagous Makedonos, 1850), 57–58.

⁵⁸ MS 9(11), Korgialeneios Library, Argostoli, Kefalonia, p. 10.

⁵⁹ Ioannis Vouros, Περί νοσοκομείων σχεδίασμα (Paris: K. Everarte, 1831), 90.

Pharmacopoeia appeared both in Latin and in modern Greek. It was a novelty even by western European standards, since it was one of only two at the time written in the vernacular.⁶⁰ Moreover, the appendix of the work comprised the corresponding terminology in English, French, German and Ottoman Turkish, serving thus two objectives. First, the work aspired to establish ties between Greek and western European science, showing that the process of formatting the first was essentially dependent on an "Europeanising" attitude. Second, the terminology should be accessible to the natives, former Ottoman subjects, that is, to the majority of Greek pharmacists at the time.

The participation of Vouros, a native to the larger eastern Mediterranean region, is thus explained: he was considered the one with the necessary "local pharmaceutical experience" but who was not a native of the Greek Kingdom. In fact, it was his quality as such an intermediary that made him secretary to the Medical Council in the first place. When discussing the need for a secretary to the council, the interior minister demanded that the candidate know "well the language and the habits of the country", proposing Vouros for the post.⁶¹ Vouros was indeed the perfect choice, satisfying all the presuppositions demanded by a "Greek" pharmacopoeia, which was the result of a balanced political and scientific approach to pharmacy during a period of transition from one political, linguistic and scientific regime to another.

One final remark relates to the centrality of the Medical Council: two of the three authors of the *Pharmacopoeia* were members of it. Landerer was a member for his whole professional career and Vouros became its president in 1840. Through the Medical Council, the king and his court physicians (all of whom were members, if not presidents, of the council) exercised control of the profession, in fact they were creating it. The council served during the whole century as the examination committee of every therapy professional. Having passed the council's exams, the professional obtained a diploma, the only legal document permitting the practice of a pharmacist, of a physician and of a midwife in Greece. Each of these professionals, the members of the newly established official medical and paramedical body of the country, was obliged by law to apply the *Greek Pharmacopoeia* of the Medical Council.⁶²

⁶⁰ The other one was the US Pharmacopoeia, written also both in Latin and in English and published in 1820.

⁶¹ GAK, Othonian Archive, Archives of the Ministry of the Interior, f. 204, doc. 48.

⁶² Decree on the Greek Pharmacopoeia, *Εφημερίς της Κυβερνήσεως (ΦΕΚ)*, no. 17, 13 May 1838. It was printed in 1,200 copies between 1837 and 1838 and accessible in every "public library" for six drachmas, GAK, Othonian Archive, Archives of the Ministry of the Interior, f. 190, doc. 42.

"De materia pharmaceutica"

Which substances did the *Pharmacopoeia I* incorporate to be considered a Greek one? Did its authors respect their promise to integrate substances that "physicians use in Greece" or did they just translate the Bavarian version? How extensive or how limited was the effort to "Europeanise" the local pharmacy and, conversely, how close did the *Pharmacopoeia* remain to the medical manuscripts' tradition? From the legislative texts and the administrative procedures, we now pass to the *materia medica*, or as the *Pharmacopoeia* calls them, the *materia pharmaceutica* (part 1, pp. 1–170).

First of all, as Skevos Philianos and Helen Skaltsa have shown, the *Greek Pharmacopoeia* did not blindly imitate the Bavarian. Choices were made on the form, the organisation of the material, the language and the content.⁶³ Concerning, for example, medicinal plants or plant parts, the *Greek Pharmacopoeia I* comprises 27 substances that are absent from the Bavarian one while, in turn, it omits 21 substances that exist in its German prototype. In other words, there were scientific divergences. It is difficult for the current research to attribute them to Landerer, Sartori and Vouros' concern about adapting their work to the local pharmacotherapy. However, their work did take into account the Greek medical manuscript tradition, as it is shown next by the comparison of two such manuscripts with the *Pharmacopoeia I*.

The first manuscript to be compared is the MS 92 from the Zagora Public Library archive.⁶⁴ It is a *iatrosophion* written at the beginning of the eighteenth century (1708) by the physician Michail Kontopidis, who also signed it.⁶⁵ Fifty years later the text was enriched by Constantinople Patriarch Kallinikos IV. Kontopidis, on the one

⁶³ Philianos and Skaltsa, "Étude comparative de la première édition de la Pharmacopée hellénique," 2–3 and 5.

⁶⁴ Zagora is a historical village in the Pelion peninsula, Thessaly.

⁶⁵ Markellos-Michail Kontopidis (1651–1716) was an educated doctor from the island of Naxos. He studied medicine in Padua University. An *iatrosophion* is a medical manuscript containing diverse medical information (even, in some cases, the expected curative progress), often mentioning a renamed medical authority (Hippocrates, Galen, Meletius, etc.). They belong to the category of post-Byzantine texts that were produced between the sixteenth and twentieth centuries. They record ethnomedical data very important for the history of medicine and therapeutics in the Greek regions up to the nineteenth century, Konstantinos Amantos, "Ιατροσοφικός κώδιξ," *Αθηνά* 43 (1931): 148–70; A. Kouzis, "Contribution à l'étude de la médecine des zenos pendant le XVème siècle," *Byzantinisch-neugriechische Jahrbücher* 6 (1927–28): 77–90; Touwaide, "Byzantine Hospital Manuals," 148–49; Touwaide, "Arabic into Greek," 196; Quinlan, "Ethnomedicine"; Seriatou, "Από τα γιατροσόφια στα ιατρικά εγχειρίδια," 18.

hand, had copied extensively the work of Dioscorides when he was studying medicine at the University of Padua, even though he has included current medicinal knowledge. According to Kallinikos' notes, on the other hand, MS 92 is a copy of the sixth volume of the original work of Dioscorides, which we know, however, had only five volumes. In any case, even if the reference was about Dioscorides' disputed work On other Pharmaceuticals, the manuscript (MS 92), like many other iatrosophia, shares many medicinal materials with Dioscorides' texts such as: $\alpha\lambda\theta\epsilon\alpha$ (althaea), μολόχα (malva), γλυκάνισο (anise), αψ'νθια (absinthium), ηδύοσμος (spearmint), δυσκύαμος (hyoscyamus), ραβέντι (rhubarb), αφιόνι (opium), κρόκος (saffron), $\alpha \pi \eta \gamma \alpha v o \varsigma$ (common rue), ελαφοκέρατο (elkhorn fern), στύψη (potassium alum), $\beta \alpha \sigma i \lambda i \kappa \delta \varsigma$ (basil) and $\mu \dot{\alpha} \rho \alpha \theta \delta \varsigma$ (fennel).⁶⁶ The second manuscript that is compared with the Greek Pharmacopoeia is the MS 244 that dates from the eighteenth century.⁶⁷ It is a medical manuscript, written probably by a professional and entitled *Αουστριακή* Φαρμακοπαια (Austrian Pharmacopoeia). The work copied its materia medica from western European texts, as the author himself acknowledged. Both manuscripts are characteristic examples of the eighteenth-century pharmaceutical tradition in the Greek regions since they mainly list substances with their uses.

As far as our methodology is concerned, ethnopharmacology, by raising questions about the survival of medicinal material, has proposed effective routes by which data can be successfully extracted from the texts. As Efraim Lev argues, the use of different sources, in kind and in origin, can produce reliable results.⁶⁸ Paula De Vos, for example, examined a number of medical texts and presented a compiled list of 439 simples that were shared by all of them.⁶⁹ As for the problem of equating past terminology with its modern one, the work of Andreas Lardos' on the *Iatrosophikon* of Cyprus is very promising.⁷⁰ Very helpful here was also the Aromatic Plants of Epirus database established by the University of Ioannina.⁷¹ Thanks to it, as well as

⁶⁶ For Dioscorides' text, see Tsagkala, "Οι επιβιώσεις του Διοσκουρίδη," 43-110.

⁶⁷ MS 244, Archives of Historical Documents, National Historical Museum, 22. See S. Lampros, "Κατάλογος των κωδίκων των εν Αθήναις Βιβλιοθηκών πλην της Εθνικής. Β' Κώδικες της Ιστορικής και Εθνολογικής Εταιρείας," Νέος Ελληνομνήμων 10 (1913): 184.

⁶⁸ Efraim Lev, "Reconstructed *materia medica* of the Medieval and Ottoman al-Sham," *Journal of Ethnopharmacology* 80, no. 2–3 (2002): 167–79.

⁶⁹ De Vos, "European Materia Medica in Historical Texts," 28-47.

⁷⁰ Andreas Lardos, "The Botanical Materia Medica of the Iatrosophikon: A Collection of Prescriptions from a Monastery in Cyprus," *Journal of Ethnopharmacology* 104, no. 3 (2006): 387–406.

⁷¹ University of Ioannina, School of Health Sciences, Faculty of Medicine, Department of Pharmacology, Αρωματικά Φυτά της Ηπείρου, http://mediplantepirus.med.uoi.gr/ pharmacology/plant.php.

to other works,⁷² it was possible to associate the local names of many substances with their scientific terms and their Latin ones as well. In this respect, the fact that the author of MS 92 (the Zagora *iatrosophion*) also provided the Latin and the Arabic names (written in Greek letters) of the substances helped the identification of the ones included in the Greek *Pharmacopoeia*.

The results of the comparison are illustrated in the table in the appendix. The table comprises all 354 substances and pharmaceutical products (in Latin and in Greek) contained in the Greek Pharmacopoeia (columns 2 and 3). The other columns include only the shared materia medica between the Pharmacopoeia and MS 244 (Austrian Pharmacopoeia), on the one hand (column 3), and MS 92 (the Zagora iatrosophion), on the other (column 4). As the table shows, the Greek Pharmacopoeia shares 142 substances with MS 244 and 51 with the MS 92. Given that MS 244 includes a total of 271 substances, and MS 92 a total of 123, then half of MS 244 (52 percent) is included in the Greek Pharmacopoeia while the respective percentage for MS 92 is 41 percent. In this respect, there is little difference between the influences on the two manuscripts. However, if we relate the number of the shared substances from each manuscript to the total of 354 substances contained in the Greek Pharmacopoeia, then 40 percent of its content coincides with that of the Austrian Pharmacopoeia while only 14 percent of it is the same with the content of the Zagora iatrosophion. In other words, the Greek Pharmacopoeia I shares more with the Austrian Pharmacopoeia, that is, with western European materia medica, than with MS 92, which more closely followed Dioscorides, that is, ancient Greek pharmacotherapy.

Concluding remarks

In the context of the transition from the Ottoman Empire to the Greek state, the approach used for diffusing knowledge (a printed book or a manuscript) was linked to the process of political centralisation, to the professionalisation of pharmacists and to the history of the science of pharmacy. With the printed version, standardisation, control and harmonisation were introduced to or imposed on the pharmaceutical trade to a larger extent than before 1833, a process that occurred simultaneously on both the local/national and on the

⁷² Academic Dictionaries and Encyclopedias, https://greek_greek.en-academic.com; Pantazis Kontomichis, Η λαϊκή ιατρική στη Λευκάδα (Athens: Grigoris, 1983); G.A. Rigatos, Λεξικό ιατρικής λαογραφίας (Athens: Vita, 2005); Gunnar Samuelsson, Φαρμακευτικά προϊόντα φυσικής προελεύσεως, trans. and ed. Pavlos Kordopatis, Evi Manesi-Zoupa and Giorgos Pairas (Heraklion: Crete University Press, 2004); Roula Goliou, 200 βότανα και οι θεραπευτικές ιδιότητές τους (Thessaloniki: Malliaris Paideia, 2008).

global levels.⁷³ The very history of editing pharmacopoeias concerns the dialectics between national and international efforts to standardise pharmacology that were taking place within the larger period of European political and scientific expansion. The Greek case that incorporated a "German" pharmacology in order to promote or to form a "Greek" one was one such event in this dual process.

The aforementioned differences between the Greek and the Bavarian pharmacopoeias were due to the efforts of the court physicians to incorporate local substances, respecting, thus, the local natural environments and medical habits that were slowly being transformed into national ones. As there were limits set on the straightforward imitation of the European pharmacopoeial standards, the same limits applied to the incorporation of the local pharmaceutical traditions represented in the eighteenth-century Greek medical manuscripts.

Of course, the *Greek Pharmacopoeia* continued to quote past uses. For example, like many important *iatrosophia*, its second part comprised detailed instructions, descriptions and precise dosages for the preparation of the chemical pharmaceutical formulations.⁷⁴ Interestingly enough, its *materia pharmaceutica* included also recipes for various fruit syrups for the confection of desserts as well as flavour enhancers for drugs. However, the *Pharmacopoeia* regularised profound changes to past forms of knowledge diffusion and ways of professional organisation. As the comparison between its *materia medica* and the substances contained in MS 244 and MS 92 has shown, the *Pharmacopoeia* did not slavishly follow the medical manuscript derived from the ancient Greek medical tradition. Instead, it shared more substances with the *Austrian Pharmacopoeia* manuscript.

As a result of this national and international process of translation, imitation, incorporation and exclusion, the local substances omitted from the *Pharmacopoeia I* that remained in use in Greece and in circulation in medical manuscripts until well into the twentieth century⁷⁵ were identified as "quackery" and "medical empiricism". The notions were not reified entities; they describe dynamic processes practiced by professional rivalries and scientific quarrels in the face of which the state was meant to play the role of arbitrator. As is noted, the term "medical empiric" was first used

⁷³ Domingos Tabajara de Oliveira Martins et al., "The Historical Development of Pharmacopoeias and the Inclusion of Exotic Herbal Drugs with a Focus on Europe and Brazil," *Journal of Ethnopharmacology* 240 (2019): 1–11.

⁷⁴ Seriatou, "Μαντζούνια και αλοιφές," 39-45.

⁷⁵ Violetta Hionidou, "Popular Medicine and Empirics in Greece, 1900–1950: An Oral History Approach," *Medical History* 60, no. 4 (2016): 492–513; Penelope Seriatou, "Η λειτουργία της εμπειρικής ιατρικής, οι θεραπευτές και τα χειρόγραφά τους," *Τα Ιστορικά* 70 (2019): 71–88.

to describe a certain category of therapists in an 1831 text.⁷⁶ With the appearance of legal authorities interested in health and medical issues, internal divisions within the profession became clearer and more formal. From a certain point of view, the legal interventions established internal as well external boundaries that were of help in defining and distinguishing the professional and the scientific from all other forms of therapy. To put it another way, from the publication of the *Greek Pharmacopoeia* onwards, the scientist used the printed version and the medical empiric (or any other therapist) the manuscript, which gradually came to include prayers and magic symbols.⁷⁷ The manuscript during the nineteenth century lost any pretension to a scientific allure.

The Greek Pharmacopoeia should not, however, be considered as marking any clean break or rupture. The eighteenth century increased the professional tendencies inherent in the growth of the medical production: this was an important step towards the constitution of pharmacy as a formal profession and as a standardised science. As is shown by the comparisons made in this article, the Greek Pharmacopoeia was conceived at a moment when the state and its physicians wanted to satisfy the demand expressed by eighteenth-century patients and therapists for efficiency, legality and health security. In this respect, the present article may bridge the gap between ethnopharmacology and biomedicine.78 The "science of ethnopharmacology is the interdisciplinary investigation of the full set of medical approaches that use remedies of vegetable, animal, or mineral origin".79 The Greek Pharmacopoeia, by including such natural substances, offers itself as an object of research for ethnopharmacology. On the other hand, since the Pharmacopoeia helped establish the foundations for scientific universality, its medicinal and botanical information was not specific to some geographical and cultural area and the substances included were openly available in the market. Moreover, by giving a significant place to chemistry and to chemical products, the same text is also of interest for the history of biomedicine.

⁷⁶ Lazaros Vladimiros, "Ο εμπειρικός γιατρός στην Τουρκοκρατία," in Η θέση του γιατρού στην κοινωνία (II), ed. P.N. Zirogiannis, A. Diamantopoulos, E. Vogiatzakis, E. Koumantakis (Athens: Etaireia Diadosis Ippokratreiou Pnevmatos, 2015), 86–87.

⁷⁷ Seriatou, "Από τα γιατροσόφια στα ιατρικά εγχειρίδια," 184 and 243.

⁷⁸ Medical anthropology investigates modern European pharmacy as a specific, culturally bounded, system of knowledge, as a specific expression of ethnopharmacy, and not as a universally applied scientific system. See, for example, Lorna Amarasingham Rhodes, "Studying Biomedicine as Cultural System," in *Medical Anthropology: Contemporary Theory and Method*, ed. Thomas M. Johnson and Carolyn F. Sargent (Westport: Praeger, 1990), 159–73.

⁷⁹ Jacques Fleurentin, "From Medicinal Plants of Yemen to Therapeutic Herbal Drugs," in Herbal Medicine in Yemen: Traditional Knowledge and Practice, and their Value for Today's World, ed. Ingrid Hehmeyer, Hanne Schönig and Anne Regourd (Leiden: Brill, 2012), 154.

The state's intervention played a role in the development of biomedicine from ethnomedicine.

The development is not a linear one. Current trends in pharmacognosy have now returned to "traditional" modes of healing in order to find drugs for illnesses resistant or non-responsive to modern medicine.⁸⁰ Even if it is not a full return, since modern European pharmacy has developed from practices that were not at all "traditional" in the past, the current attentiveness to herbs shows that the Pharmacopoeia did not spell the end to such interests. In the nineteenth century, the professional and scientific rivalries were not over; they just obtained different forms. Indeed, the very existence of this legal text of 1837 could actually hinder pharmaceutical innovation. For example, what happened to drugs produced after the publication of the *Pharmacopoeia*? The French government commissioned, for example, the Medical Academy to examine every new medicine and publish its recipe in the academy's bulletin, until a subsequent edition of the Codex (the French Pharmacopoeia) could integrate it properly. Hence the need arose for constant re-editions to keep the pharmacopoeias up to date.⁸¹ In Greece, the role for certifying a drug's composition was in the hands of the Medical Council, while the Greek Pharmacopoeia has appeared in five main editions with a total of 14 supplements. But then again, the economic question persists: what about patents? What happens when a merchant or an inventor would like to keep his drug's recipe secret? How may his copyright interests - and economic profits be protected without harming public health or without him being considered as a quack?82

The article has demonstrated the importance of the publication of the *Pharmacopoeia* for the history of medicine and pharmacy. It has argued that its publication involved much struggle, competition and conflict. It has focused on the use of medical manuscripts and on the political, scientific, ideological and professional dimensions of pharmacy. Further research should also include that of the economy.⁸³

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⁸⁰ G.P. Sarlis, *Αρωματικά και φαρμακευτικά φυτά* (Athens: Agricultural University of Athens, 1994), 2.

⁸¹ Georges Dilleman, "Les remèdes secrets et la réglementation de la pharmacopée française," *Revue d'histoire de la pharmacie* 23, no. 228 (1976): 37–48.

⁸² See, for example, Ο Ελληνικός Ταχυδρόμος/Le Courier Grec, 6 October 1838.

⁸³ David L. Cowen, "Liberty, Laissez-faire and Licensure in Nineteenth-Century Britain," *Bulletin of the History of Medicine* 43, no. 1 (1969): 30–40.

APPENDIX

Shared materia medica between the Greek Pharmacopoeia I and two medical manuscripts (MS 244, National Historical Museum; and MS 92, Zagora Public Library).

	Greek Pharmacopoeia I (all substances)		MS 244 (shared	MS 92 (shared
	Latin term	Greek translation	substances)	substances)
1	Abrotani herba, Artemisia abrotanum	Αβροτόνου πόα	Αβρότονον	Αβρότανον or Αρτεμισία¹
2	Absinthii herba, Artemisia absinthium	Αψινθίου πόα	Αψίνθια ποντιακή, Αψίνθια κοινή	Αψινθίαν
3	Acetum (crudum)	Όξος αγοραίον		
4	Acidum muriaticum crudum	Αλικόν οξύ αγοραίον		
5	Acidum nitricum concentratum	Νιτρικόν οξύ άκρατον		
6	Acidum nitricum dilutum crudum (Aqua fortis)	Κεκραμένον νιτρικόν οξύ αγοραίον		
7	Acidum pyro-lignosum crudum	Πυροξυλικόν οξύ αγοραίον		
8	Acidum succinicum crudum	Ηλεκτρικόν οξύ αγοραίον		
9	Acidum sulphuricum crudum	Θειϊκόν οξύ αγοραίον	Λάδι βιτριλίου	
10	Acidum sulphuricum rectificatum	Θειϊκόν οξύ καθαρισμένο		
11	Acidum tartaricum	Τρυγικόν οξύ		
12	Aconiti herba, Aconitum napellus et Aconitum neomontanum	Ακονίτου πόα	Νάπελους	Ακόνιτον
13	Agaricus albus, Boletus laricis	Αγαρικόν το λευκόν	Αγαρικόν άσπρον	Αγαρικόν

208

14	Alcanae radix, Anchusa tinctoria	Αγχούσης ρίζα		
15	Alcohol venale	Οινόπνευμα αγοραίον		
16	Allii bulbus, Allium sativum	Σκορόδου βολβός	Σκόρδιον	
17	Aloe lucida, Aloe spicata soccotrina et perfoliata	Αλόη	Αλοή	
18	Althaeae radix, herba et flores, Althaea officinalis	Αλθαίας ρίζα, πόα και άνθη	Δενδρομολόχα	Αλθέα or Αγριομολόχα
19	Alumen crudum, Sulphus aluminae	Στυπτηρία αγοραίος	Στύψη	
20	Ambra grisea, Ambra	Άμβαρ		
21	Ammoniacum, Heracleum gummiferum, Ferula orientalis, Gummi ammoniacum	Αμμωνιακόν κόμμι		
22	Ammonium muriaticum crudum	Άλας αμμωνιακόν αγοραίον	Νισαντήρι	
23	Ammonium subcarbonioum crudum	Υπανθρακική αμμωνία αγοραίος		
24	Ammonium subcarbonicum pyro-oleosum, Subcarbonas	Υπανθρακική αμμωνία εμπορευματική		
25	Ammonium subcarbonicum pyro-oleosum liquidum	Υπανθρακική Αμμωνία εμπορευ- ματική υγρά		
26	Amygdalae dulces et amarae, Amygdalus communis	Αμύγδαλα γλυκέα και πικρά	Μύγδαλα	
27	Amylum	Άμυλον	Νισεστές	
28	Angelicae radix, Angelica Archangelica	Αγγελικής ρίζα	Ανγκέλικα	Αγγέλικα
29	Angusturae cortex, Bonglandia trifoliata, Angostura cuspare	Αγγοστύρας φλοιός		

210 Athanasios Barlagiannis, Penelope Seriatou, Vaso Seirinidou

30	Anisi semen et oleum, Pimpinella anisum	Ανίσου σπέρμα και έλαιον	Άνισουμ στελάτουμ	Γλυκάνισον
31	Aqua pluvialis, Aqua fluviatilis, Aqua fontana	Ύδωρόμβριον, ύδωρποτάμιον, ύδωρπηγαίον		
32	Argentum	Άργυρος		
33	Argentum foliatum	Αργύρου φύλλα		
34	Armoraciae radix, Cochlearia armoracia	Ραφανίδος της αγρίας ρίζα		
35	Arnica radix et flores, Arnica montana	Δωρονίκου του ορεινού ρίζα και άνθος		
36	Arrowroot, Maranta arundinacea	Μαραντάμυλον		
37	Arsenicum album, Acidum arsenicosum (vitreum)	Αρσενικόν λευκόν		
38	Artmisiae radix Artemisia vulgaris	Αρτεμισίας ρίζα		
39	Asa foetida, F erula asa foetida	Σίλφιον το μηδικόν		
40	Asari radix, Asarum europaeum	Ασάρου ρίζα		
41	Aurantii folia, flores, fructus immaturi, fructus maturi horumque epidermiis	Πορτογαλίας φύλλα, άνθη, καρπός άωρος, καρπός ώριμος και η επίλεπις αυτού	Κύτρον	
42	Aurum	Χρυσός		
43	Aurum foliatum	Χρυσού φύλλα		
44	Avena excorticata, Avena sativa	Βρόμος λελεπισμένος		
45	Axungia suilla, Sus scrofa	Στέαρ χοίρειον	Γουρουνόστογκον	
46	Badianae semen, Illicium anisatum, Polyandria	Ανίσου του αστερείου σπέρμα		
47	Balsamum pervianum, Myroxylon peruiferum	Βάλσαμον περουβικόν	Μπάλσαμον της Περού	

48	Balsamum tolutanum, Myroxylon toluiferum	Βάλσαμον τολουταϊκόν	Μπάλσαμον	
49	Bardanae radix, Arctium bardana et Arctium lappa	Αρχείου ρίζα		
50	Baryta sulphurica nativa	Βαρύτις θειϊκή αυτοσύστατος		
51	Basilici herba, Ocymum basilicum	Ωκίμου πόα		
52	Belladonae radix et folia, Atropa belladonna	Ευθαλείας ρίζα και φύλλα	Μπέλλα ντόννα	
53	Benzoe, Styrax benzoe	Βενζόη		
54	Berganiottae oleum, Citrus aurantium, Bergamia vulgaris	Έλαιον περγαμινόν		
55	Bismuthum	Βίσμουθον		
56	Bolus armena	Βώλος αρμενία	Βόλος αρμένικος	
57	Buccu folia, Diosma crenata	Διόσμου φύλλα		
58	Butyrum oville, Ovis aries	Βούτυρον προβάτειον		Βούτυρο
59	Cacao, Theobroma cacao	Κάκαον	Κακάο	
60	Cajeputi oleum, Melaleuca Leucadendron s. Melaleuca cajeputi	Έλαιον λευκο δένδρινον		
61	Caincae radix, Chiococca anguifuga, Frutex brasiliensis	Εχιοκόκκου ρίζα		
62	Calami radix, Acorus calamus	Καλάμου του αρωματικού ρίζα	Καλάμι αρωματικόν ρίζα	
63	Calcaria muriatica oxygenata	Τίτανος έγχλωρος		
64	Calcaria usta	Τίτανος κεκαυμένη		
65	Camphora, Dryobalanops Comphora et Laurus camphora	Καφουρά	Κάμφορα	
66	Cancrorum lapides, Cancer Astacus, Astacus fluviatilis	Λιθάρια των ποταμίων καρκίνων		Καβούρους

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67	Canella alba	Κιννάμωμον το λευκόν	Κανέλα άσπρη	
68	Cannabis semen, Cannabis sativa	Καννάβεως σπέρμα,		
69	Cantharides, Meloe vesicatorius, Lytta vesicatoria	Κανθαρίδες	Κανθαρίδας	Κανθαρίδαις
70	Capilli veneris herba, Adianthum capillus veneris	Αδιάντου πόα		
71	Carbo animalis	Ζωάνθραξ		
72	Carbo vegetabilis	Άνθραξ		
73	Cardamomum minus, Alpinia cardamomun, Elettaria cardamomum	Καρδάμωμον το μικρόν	Κάρδαμον μικρόν	
74	Cardui benedicti herba, Cnicus benedictus, Centaurea benedicta	Ακάνθας της ιεράς πόα		
75	Caricae, Ficuscarica	Ισχάδες		
76	Caricis arenariae radix, Carex arenaria	Αμμοφύτου ρίζα		
77	Carvi semen et oleum, Carum carvi	Κάρου σπέρμα και έλαιον	Κάρβους	
78	Caryophyllatae radix, Geum urbanum	Γέου ρίζα	Καριοφυλλάτα	
79	Caryophylli eorumque oleum, Caryophyllus aromaticus s. Eugenia carryophyllata	Καρυόφυλλα και το εξ αυτών έλαιον	Καραφύλλια	
80	Cascarillae cortex, Croton eluteria	Κασκαρίλλης φλοιός	Κασκαρίλλα	
81	Cassia cinnamomeae jusque oleum, Laurus cassia	Κιννάμωμον ξυλώδες και το εξ αυτού έλαιον	Κάσια ξύλινη	
82	Cassia flores, Laurus cassia, Laurus malabathrum	Κασσίας άνθη	Κάσια φίστουλας	
83	Castoreum, Castor fiber	Καστόριον	Καστόριον	

84	Catechu, Mimosa catechu, Acacia catechu	Λύκιον		
85	Centaurii herba, Chironia centaurium s. Gentiana centaurium s. Erythraea centaurium	Κενταυρίου πόα	Κενταύριον μικρόν	
86	Cera flava et alba	Κηρός κίτρινος και λευκός	Κερί άσπρο, κίτρινο	
87	Cerasa acida, Prunus cerasus, Melanocarpa	Βύσσινα	Κεράσια μαύρα	
88	Cervi cornu, Cervus elaphus	Κέρας ελάφιον	Ελάφιον	Κέρατο Ελάφου
89	Cetaceum	Κήτους σπέρμα		
90	Chamomillae ramanae flores	Χαμαιμήλου άνθος		Χαμομήλα
91	Chamomillae vulgaris flores, Matricaria chamomilla	Λευκανθέμου άνθος	Χαμομήλα	
92	Chelidonii herba, Chelidonium majus	Χελιδονίου πόα	Χελιδώνιον μεγάλον	
93	Chenopodii herba, Chenopodium ambrosioides	Χηνοποδίου πόα		
94	Chinae radix, Smilax china	Κίνας ρίζα	Κίνα κομπιάρικη ρίζα	
95	China fusca	Κίνα φαιά		
96	China regia, Cinchona angustifolia, Cinchona lancifolia	Κίνα βασιλική		
97	Chininum sulphuricum	Κινίνη θειϊκή		
98	Cichorei radix, Cichorium intybus	Κιχωρίου ρίζα		
99	Cina semen, Artemisia contra	Αβροτόνου του άρρενος σπέρμα		
100	Cinnabaris	Κιννάβαρι		
101	Cinnamomi cortex et oleum, Laurus cinnamomum	Κινναμώμου φλοιός και έλαιον		

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102	Citri fructus et oleum, Citrus medica	Μηδικά μήλα και το εξ αυτών έλαιον		
103	Clematidis herba, Clematis erecta	Κληματίδος πόα		
104	Coccinella, Coccus cacti	Ανθηρόκοκκος	Κριμέζι	
105	Cochleariae herba, Cochleariae officinalis	Κοχλιαρίδος πόα		
106	Coffeae semen, Coffea arabica	Καφφέας σπέρμα		
107	Colchici radix et semen, Colchicum autumnale	Κολχικού ρίζα και σπέρμα		
108	Colocynthides, Cucumis colocynthis	Κολοκυνθίδες		
109	Colombo radix, Cocculus palmatus, Menispermum palmatum	Κολόμβου ρίζα		
110	Colophonium, Pinus sylvestris	Κολοφόνιον		
111	Conchae, Ostrea edulis	Κόγχαι		
112	Conii maculatiherba, Conium maculatum	Κωνείου πόα	Τζικούτα κοινή	Κόνιο
113	Capaivae balsamum, Copaifera officinalis	Βάλσαμον κοπαϊκόν		
114	Coriandri semen, Coriandrum sativum	Κοριανου σπέρμα		Κόρεον
115	Creta alba	Κρητίς		
116	Crocus, Crocus sativus	Κρόκος		
117	Crotonis oleum, Croton tiglium	Κρότυνον έλαιον		
118	Cubebae, Piper cubeba, Piper caudatum	Μυρτίδανον		
119	Cuprum	Χαλκός		
120	Cuprum aceticum crystallisatum	Οξικός χαλκός κρυσταλλωμένος		

121	Cuprum subaceticum	Ίός χαλκού(ιόςξυστός)		
122	Cuprum sulphuricum crudum	Χαλκός θειϊκός	Βιτριόλι χαλκού	
123	Curcumae radix, Curcuma longa	Κροκόρριζα		
124	Cydoniae fructus et semen, Pyrus cydonnia, Cydonia vulgaris	Κυδωνίων καρπός και σπέρμα		
125	Dactyli, Phoenix dactylifera	Φοινικοβάλανον		
126	Dauci radix, Daucus carota	Σταφυλίνου ρίζα		
127	Digitalis folia, Digitalis purpurea	Ελύτρου φύλλα		
128	Draconis sanguis, Calamus draco	Αίμα δρακόντιον	Αίμα δράκοντο	
129	Dulcamarae stipites	Γλυκυπίκρου Κλωνία		Στύφνος, στρύχνος
130	Elaterii pepones	Σίκυος άγριος		
131	Elemi	Έλημον		
132	Erucae semen, Sinapis alba	Σινάπεως του λευκού σπέρμα		
133	Euphorbium, Euphorbia officinarum	Ευφόρβιον		
134	Fabae albae, Phaseolus vulgaris	Δύλιχοι		
135	Farfarae folis, Tussilago farfara	Βηχίου φύλλα		
136	Ferrum, mars, ferro	Σίδηρος		
137	Filicis maris radix, Aspidium filix mas	Πτέριδος ρίζα		
138	Foeniculi semen, Foeniculum vulgare	Μαράθρου σπέρμα		Μάραθον
139	Foeni groeci semen, Frigonella foenum graecum	Τήλεως σπέρμα		

216 Athanasios Barlagiannis, Penelope Seriatou, Vaso Seirinidou

140	Formicae, Formica rufa	Μύρμηκος		
141	Fumariae herba, Fumaria officinalis	Καπνού πόα	Καπνός	Καπνόν
142	Galangae radix, Alpinia galanga	Γαλάγχης ρίζα	Γαλάνγα	
143	Galbanum, Bubon galbanum, Selimun galbanum	Χαλβάνη	Γάλμπανο	
144	Gallae, Quercus infectoria	Κηκίδες		
145	Gentianae radix, Gentiana lutea	Γεντιανής ρίζα	Γεντριάνα	Γεθιανή
146	Graminis radix, Triticum repens, Agropyrum repens	Αγρώστιδος ρίζα		Άγροστις
147	Granati cortex radicis et cortex fructus, Punica granatum	Ρόας ρίζης φλοιός και σίδια (ρόας λέπη)		
148	Graphites	Γραφίτης		
149	Gratiolae herba, Gratiola officinalis	Ηρακλεία πόα	Γραντζιόλα	
150	Guajaci lignum, Cortex ligni et resina, Guajacum officinale	Ιερόξυλου φλοιός, ξύλον και κομμιρητίνη		
151	Guttae gummi, Garcinia cambogia, Mangostana cambogia	Χρύσοπον		
152	Gypsum	Γύψος		
153	Hederae terristris herba, Glechoma hederaceum	Χαμαικίσσου πόα	Κισσός γαιώδης	
154	Helenii, Enulae radix, Inula helenium	Ελενίου ρίζα	Λένιο σαντο	
155	Hellebori albi radix, Veratrum album	Ελλεβόρου του λευκού ρίζα	Σκάρφη	
156	Helleborı nigri radix, Helleborus niger	Ελλεβόρου του μέλανος ρίζα		
157	Helmintochortos, Ceramium helmintochorton	Ελμινθόχορτον		

158	Hippocastani cortex, Aesculus hippocastanum	Ιπποκαστάνου φλοιός		
159	Hirudo, Hirudo medicinalis	Βδέλλα		
160	Hordeum, Hordeum vulgare	Κριθή	Κριθάρι	
161	Hydrargyrum	Υδράργυρος	Υδράργυρος ζωντανός	
162	Hydrargyrum muriaticum corrosivum	Αλικού υδραργύρου άχνη		
163	Hydrargyrum oxydatum rubrum	Υδραργύρου κοκκίνη υποστάθμη		
164	Hyoscyami albi folia, Hyoscyamus albus	Υοσκυάμου του λευκού φύλλα		
165	Hyoscyamini grifolia et semen, Hyoscyamus niger	Υοσκυάμου του μέλανος φύλλα και σπερμα		Δισκίαμο
166	Jaceae herba, Viola tricolor	Ίου του τριχρόου πόα		
167	Jalappae radix, Convolvulus jalappa. Ipomaea jalappa	Ιαλάππης ρίζα	Γιαλάππα	
168	Ichyocolla	Ιχθυοκόλλα		
169	Jecoris aselli oleum	Έλαιον το εκ του ήπατος του ονίσκου		
170	Ignatiae semen, Strychnos ignatia, Ignatia amara	Ιγνατίας σπέρμα		
171	Imperotariae radix, Imperatorial ostruthium	Κοιρανίας ρίζα	Ιμπεραδόρια	
172	Jodium s. Jodina	Ιώδες		
173	Ipecacuanhae radix	Ιπεκακουάνης ρίζα	Ιπεπακουάνα	
174	Ireos radix, Iris florentina	Ίριδος ρίζα		
175	Juglandis fructuum cortex, Juglans regia	Καρύων λέπυρα	Καριδιά	
176	Jujubae, Rhamnus ziziphus, Ziziphus vulgaris	Ζύζιφα		
177	Juniperi lignum et baccae, Juniperus communis	Αρκεύθου ξύλον και σφαιρία		

178	Kali ferruginoso- hydrocyanicum	Κάλιον προυσσιακόν σιδηρίζον		
179	Kali muriaticum oxygenatum	Κάλιον αλικόν οξυγονομένον		
180	Kali nitricum crudum	Νίτρον αγοραίον		
181	Kali oxalicum acidulum, Oxalis acetosella et Oxalis corniculata	Κάλιον οξαλικόν όξινον		
182	Kali subcarbonicum crudum	Κάλιον υπανθρακικόν αγοραίον		
183	Kali sulphuricum crudum	Κάλιον θειϊκόν αγοραίον		
184	Kino, Eucalyptus resinifera	Κίνον		
185	Kreosotum	Σωσίκρεον		
186	Lacca in globulis	Λάκκον σφαιρωτόν		
187	Lacca in granis	Λακκον δακρυώδες		
188	Lacmus, Rocella tinctoria	Καγκάμινον κυανούν		
189	Lactis saccharum	Σάκχαρα του γάλακτος	Γάλα από γελάδα, ζάχαρι	
190	Lactucae virosae herba, Lactusa virosa	Θριδακίνης της φαρμακώδους πόα	Αγριομαρούλι	
191	Lactucarium, Lactuca sativa	Θριδάκιον		
192	Lapathi radix, Rumex obtusifolius	Λαπάθου ρίζα	Ξινολάπαθο	
193	Lauri baccae et oleum, Laurusnobilis	Δάφνης καρπός και έλαιον	Δάφνη	
194	Lauro-cerasi folia, Prunus lauro-cerasus	Δαφνοκέρασου φύλλα		
195	Lavandulae flores et oleum, Lavandula spica	Τιφύου άνθη και έλαιον	Λαβεντούλα	
196	Levistici radix, Ligusticum levisticum	Λιγυστικού ρίζα		Λιγούστικο

197	Lichen islandicus, Cetraria islandica	Λειχήν ο ισλανδικός		
198	Lignum campechianum, Haematoxylon camperchianum	Καμπεχιανόν ξύλον		
199	Linisemen et oleum, Linum usitatissimum	Λίνου σπέρμα και έλαιον		
200	Liquiritiae radix, Glycyrrhiza glabra	Γλυκυρρίζης ρίζα	Γλυκόρριζα	Γλυκόριζα
201	Liquiritiae succus inspisatus crudus	Γλυκυρρίζης χύλισμα αγοραίον		
202	Lupuli strobili, Humulus lupulus faemina	Λυκίσκου στρόβυλοι		
203	Lycopodii semen, Lycopodium clavatum	Λυκοποδίου σπέρμα		
204	Macis et macidis oleum, Myristica moschata	Μοσχομάκερ και το έλαιον αυτού	Μοσχοκάριδον	
205	Magnesia subcarbonica	Μαγνησία υπανθρακική		
206	Magnesia sulphurica cruda	Μαγνησία θειϊκή αγοραίος (πικρόν άλας)		
207	Malvae arborea e flores, Althea rosea	Ροδαλθαίας άνθη		
208	Malvae folia	Μαλάχης φύλλα	Μολόχα κοινή	
209	Malvae vulgaris Flores, Malva sylvestris	Μαλάχης άνθη	Μολόχα κοινή	
210	Manganum oxydatum (nativum)	Μαγγανήσιον οξειδωμένον		
211	Manna, Fraxinus ornus	Μάννα	Μάννα	
212	Mari herba, Teucrium marum	Μάρου πόα		
213	Marrubii herba, Marrubium vulgare	Πρασίου πόα	Μαρούβιον	Πράσσιον
214	Mastiche, Pistacia lentiscus	Μαστίχη	Μαστίχη	

215	Matricariae herba, Matricaria parthenium, Pyrethrum parthenium	Παρθενίου πόα	Ματρικάρια	Παρθενούδι
216	Mel crudum	Μέλι	Μέλι κοινός και ξαφρισμένον	
217	Meliloti herba, Melilotus officinalis	Μελιλώτου πόα	Μελίλοτος	Μελίλοτο
218	Melissae herba, Melissa officinalis	Μελισσοφύλλου πόα	Μελισσόχορτον	Μελισσοβότανο
219	Menthae crispae herba, Mentha crispa	Ηδυόσμου του ουλοφύλλου πόα	Αγριοδυόσμος, δυόσμος	Δυόσμον
220	Menthae piperitae herba et oleum, Mentha piperita	Ηδυόσμου του πεπερώδους πόα και έλαιον		
221	Mezerei cortex, Daphne mezereum et Daphne gnidium	Δαφνοειδούς φλοιός		
222	Millefolii herba, Achillea millefolium	Χιλιόφυλλου πόα		Χιλιόφυλλον
223	Mimosae gummi, Acacia ehrenbergii, Mimosa seyal et tortilis	Κόμμι (το αραβικόν)		
224	Mori bacae	Συκάμινα (μούρα)	Μοριά	
225	Morphium	Μόρφιο		
226	Moschus	Μόσχος	Μόσχος	
227	Myrrha, Balsamodendron myrrha	Σμύρνα	Μύρα	Μύρριν
228	Nasturtii herba, Sisymbrium nasturtium, Nasturtium officinale	Σισυμβρίου πόα	Νεροκάρδαμον	
229	Natrum carbonicum acidulum	Νάτρον ανθρακικόν όξινον		
230	Natrum mutiaticum	Νάτρον αλικόν	Άλας αλκαλινόν	
231	Natrum subboracicum	Νάτρον υποβορακικόν		

220 Athanasios Barlagiannis, Penelope Seriatou, Vaso Seirinidou

232	Natrum sulphuricum crudum	Νάτρον θειικόν αγοραίον		
233	Natrum subcarbonicum crudum	Νάτρον υπανθρακικόν αγοραίον		
234	Nicotianae folia, Nicotiana tabacum	Νικοτιανής φύλλα	Καπνός	
235	Nuces moschatae, Myristica moschata	Μοσχοκάρυα	Μοσχοκάριδον	
236	Nuces vomicae, Strychnos nux vomica	Κάρυα εμετικά		
237	Nucistae oleum, Myristica moschata	Μοσχοκαρύου έλαιον		
238	Oleum animale dippelii	Σαρκέλαιον του Διππελίου		
239	Oleum animale foetidum	Σαρκέλαιον		
240	Olibanum s. Thus, Boswellia serrata	Λίβανος	Ολίβανον, Θυμίαμα	
241	Olivarum oleum, Olea europaea	Έλαιον	Ελεόλαδον	
242	Ononidis radix, Ononis spinosa et Ononis antiquorum	Ονωνίδος ρίζα	Ονονές	
243	Opium, Papaver officinale et Papaver somniferum	Όπιον		Αφιώνι, Όπιο
244	Origami herba, Origanum smyrnaeum	Οριγάνου πόα		Ρίγανην
245	Ova gallinacea, Phasianus gallus foemina	Ωά της αλεκτορίδος	Αυγόν από κόταν	
246	Paeoniae radix, Paeonia officinalis	Παιωνίας ρίζα		
247	Papaveris capita, semina et oleum, Papaver somniferum, seminibus albis	Μήκωνος κωδίαι, σπέρμα και έλαιον	Παπαρούνα άσπρη, Παπαρούνα πραντική	Κουτζουνάδα, Όπιο Μικώνιον αγριον
248	Passulae majores, Vitis vinifera	Σταφίδες		

249	Passulae minores, Vitis vinifera var: apyrena	Σταφίδες κορινθιακαί		
250	Petroleum, oleum petrae	Πετρέλαιον	Πετροέλαιον	
251	Petroselini semen, Apium petroselinum	Σελίνου σπερμα		Κουδουμέντο -Μακεδονίσι
252	Phellandrii semen	Φηλανδρίου σπέρμα		
253	Phosphorus	Φωσφόρον		
254	Pimpinellae radix, Pimpinella saxifrage	Εμπέτρου ρίζα	Πιμπρενέλλα	
255	Piper hispanicum, Capsicum annum	Πεπερίς		
256	Peperinum	Πεπέριον	Πιπέρι στρογγυλόν	
257	Piper nigrum et album	Πιπέρι μέλαν και λευκόν		
258	Pix alba, Pinum sylvestris	Ρητίνη λευκή		
259	Pix nigra, Pinus sylvestris	Πίσσα		
260	Plumbum aceticum crudum	Μόλυβδος οξικός αγοραίος		
261	Plumbum oxydatum (rubrum)	Άμμιον		
262	Plumbum oxydulatum (fusum)	Λιθάργυρος	Λιθάργυρος	Λιθάργυρος
263	Plumbum subcarbonicum	Ψιμύθιον	Μολυβόχωμα	
264	Polygalae amaro e herba, Polygala amara, Polygala amarella	Πολυγάλου πόα	Πολύγαλα	
265	Poma acidula, Pyrus malus	Μήλα υπόξινα		
266	Pruna, Prunus domestica	Κοκκύμηλα	Δαμασκηνιά	
267	Psyllii semen	Ψυλλίου σπέρμα		Ψύλλιον
268	Pulegi herba	Γλήχωνος Πόα		
269	Pulsatillae herba	Ανεμώνης της λειμωνίας Πόα		

270	Pyrethri radix, Anthemis pyrethrum, Anacyclus pyrethrum	Πυρέθρου ρίζα		Πύρεθρον
271	Quassiae lignum, Quassia amara, Quassia excelsa	Κάσσιον ξύλον, δένδρον του σουρινάμου	Κβάσια, κάσσια ξύλινη	
272	Quercus cortex et glandes, Quercus aegilops	Δρυός φλοιός και βάλανοι	Δρυς	
273	Ratanhae radix et extractum, Krameria triandra	Ρατανίας ρίζα και εκχύλισμα		
274	Rhei radix, Rheum australe s. Rheum emodi	Ρα ρίζα	Ρέουμ	Ραβέντι
275	Rhododendri folia, Rhododendron chrysanthum	Ροδοδένδρου φύλλα		
276	Rhoeados flores, Papaver phoeas	Ροιάδος άνθος		
277	Ricini oleum, Ricinus communis	Έλαιον κίκινον		
278	Rosmarini folia et oleum, Rosmarinus officinalis	Λιβανωτίδος φύλλα και έλαιον	Ροσμαρίνος	Δεντρολίβανον
279	Rosarum flores, Rosa centifolia	Ρόδα	Τριανταφυλλιά	
280	Rosarum oleum, Rosa moschata	Έλαιον ρόδινον		
281	Rubiae tinctorum radix, Rubia tinctorum	Ερυθροδάνου ρίζα	Ριζάρι	Ριζάρι, Ερυθρόδανον
282	Rubi ideoi fructus, Rubus idaeus	Βάτουιδαίας καρπός		Βάτον
283	Rutae herba, Ruta graveolens	Πηγάνου πόα	Κομίδη ρούτας	Απήγανον
284	Sabadillae semen, Veratrum sabadilla	Φθειράγχης σπέρμα	Σαμπατέλλα	
285	Sabinae herba, Juniperus sabina	Βράθυος πόα	Σαβίνα	
286	Saccharum, Saccharum officinarum	Σάκχαρ	Ζάχαρι	

224	Athanasios	Barlagiannis,	Penelo	pe Seriatou,	Vaso Seirinidou
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287	Sagapenum, Ferula persica	Σαγαπηνόν	Σαγαπένουμ	
288	Sago, Sagus rumphii	Σάγον		
289	Salep radix, Orchis mascula, pyramidalis, longibracteata et latifolia	Όρχεως ρίζα		
290	Salicis cortex, Salix fragilis et Salix alba	Ιτέας φλοιός		
291	Salviae herba, Salvia officinalis	Ελελιφάσκου πόα	Αληφασκιά	Αλιφασκιά
292	Sambuci flores et baccae, Sambucus nigra	Ακτής άνθη και σφαιρία	Κουφοξυλιά	
293	Santali rubric lignum, Pterocarpus santalinus	Ξύλον σαγάληνον κόκκινον	Σάνταλον κόκκινον	
294	Sapo domesticus	Σάπων δια στέατος	Σαπούνι	
295	Sapo hispanicus	Σάπων κρητικός		
296	Saponariae radix, Saponaria officinalis	Στρουθίου ρίζα	Σαπονάρια	
297	Sarsaparillae radix, Smilax syphilitica aliaeque hujus generis species	Σαρσαπαρίλλης ρίζα	Σαρσαπαρίλα	
298	Sassafras lignum, Laurus sassafras	Ξύλον σασάφρινον	Σασσαφράς	
299	Scammonium, Convolvulus scammonia	Σκαμμωνία	Σκαμονέα	
300	Scillae bulbus s. radix, Scillamaritima	Σκίλλης βολβός ήτοι ρίζα	Σκύλα	
301	Scordii herba, Teucrium scordium	Σκορδίου πόα		Σκόρντιον
302	Sebum ovillum, Ovisaries	Στέαρ προβάτειον		
303	Secale cornutum, Secale cereale	Βρόμος ερυσιβώδης	Σήκαλη	
304	Secalis farina, Secale cereale	Βρόμιον άλευρον		
305	Senegae radix, Polygala senega	Πολυγάλου του βιργινικού ρίζα		

306	Sennae folia, Cassia lanceolata, Cassia obtusata s. Senna	Σένης φύλλα της Νουβίας, της ανωτέρας αιγύπτου θαμνία	Σηναμική	Σένα ή Σιναμική
307	Sepiae, Sepia officinalis	Σήπιον (σηπίας ξίφος)		
308	Serpentariae radix, Aristolochia serpentaria	Οφίτου ρίζα	Σερπεντάρια	
309	Serpylli herba, Thymus serpyllum	Ερπύλλου πόα		
310	Siliqua dulcis, Ceratonia siliqua	Κεράτια		
311	Simarubae cortex, Simaruba officinalis s. Quassia simaruba	Σιμαρούπης φλοιός		
312	Sinapeos semen, Sinapis nigra	Σινάπεως σπέρμα	Σινάπι	
313	Solani nigri folia, Solanum nigrum	Στρύχνου του μέλανος φύλλα	Σολάνουμ	Στρύφνον
314	Spongia marina, Spongia officinalis	Σπόγγος	Σφουνγκάρι	
315	Stannum	Κασσίτερος		
316	Stibium	Στίμμι	Αντιμμόνιον ωμόν ²	
317	Stibium oxydulatum vitreum	Στίβινος ύελος		
318	Stibium sulphuratum nigrum	Στίμμι ένθειον		
319	Stoechadis flores, Lavandula stoechas	Στοιχάδος άνθη		
320	Stramonii folia et semina, Datura stramonium	Στραμονίου φύλλα και σπέρμα	Στραμόνιουμ	
321	Strychninum	Στρύχνιον		
322	Styrax calamita, Styrax officinalis	Στύραξ	Στύρακα	
323	Styrax liquidus, Liquidambar styraciflua	Μελιστύραξ	Στύρακα υγρόν	

324	Succinume jusque oleum crudum	Ήλεκτρον, και το εξ αυτού έλαιον το αγοραίον	Κεχριμπάρι	
325	Sulphuris flores	Θείου άνθος	Τιάφη	
326	Tamarindi, Tamarindus indica	Οξυφοίνικες	Ταμαρήντο	
327	Tanaceti herba et oleum, Tanacetum vulgare	Θηρανθέμιδος πόα και έλαιον	Ταναζτέτουμ	
328	Taraxaci radix, Leontodon taraxacum	Πικραφάκης ρίζα	Ταράξακουμ	
329	Tartarus crudus et depuratus	Τρυξ αγοραίος και καθαρισμένη	Καθάρισμα Ταρτάρου	
330	Tauri fel, os taurus domesticus	Χολή ταυρεία	Χολή ταύρου	
331	Terebinthina communis, Pinus sylvestris et Pinus maritime	Τερεβινθίνη		
332	Terebinthinae oleum	Έλαιον τερμίνθινον		
333	Terebinthina laricina, Pinus larix	Λάριξ		
334	Terebinthina pistacina, Pistacia terebinthus	Τερεβινθίνη χία		
335	Tiliae flores, Tilia europaea	Φιλύρας άνθος	Τίλια	
336	Tormentillae radix, Tormentillae recta	Επταφύλλου ρίζα	Τορμαντίλλα	Μπιστόρτα
337	Toxicodendri folia, Rhus toxicondendron	Τοξικοδένδρου φύλλα		
338	Tragacanthae gummi, Astragalus aristatus	Τραγακάνθης κόμμι	Τραγακάνθη	
339	Trifolii fibrin herba, Menyanthes trifoliata	Μηνυανθούς πόα	Τριφύλλη	Τριφύλλλι
340	Tritici furfures, Triticum hybernum et Triticum turgidum	Πίτυρα του σίτου		
341	Ulmi cortex, Ulmus campestris	Πτέλεας φλοιός		

342	Urticae folia, Urtica pilulifera	Κνίδης φύλλα		Τζηκνίδα
343	Uvaeursi folia, Arbutus uvaursi	Αρκτοκομάρου φύλλα	Ούβα ούρος	
344	Valerianae radix, Valeriana sylvestris	Νάρδου της αγρίας (φου) ρίζα	Βαλεριάνα του λόνγκου	
345	Vanilla, Vanilla aromatica	Βανίλλη		
346	Veratrinum	Φθειράγχιον		
347	Verbasci flores, Verbascum thapsus et Verbascum thapsi forme	Φλόμου της θηλείας άνθος	Βερμπάσκουμ	Φλόμος
348	Vinum, Vitis vinifera	Οίνος		
349	Violarum flores, Viola odorata	Ίων άνθος	Βιόλα	Χαμοβιολέταις, Μενεξέδες
350	Viscum album	Ιξία	Βίσκουμ βερτζινούμ	Οξόν
351	Zedoariae radix, Curcuma zedoaria, Curcuma zerumbet	Ζάδερα	Τζεντοάρια	
352	Zincum	Ψευδάργυρος		
353	Zincum sulphuricum crudum	Θειϊκός ψευδάργυρος αγοραίος		
354	Zingiberis radix, Zingiber officinarum	Ζεγγιβέρεως ρίζα	Τζίτζιβερ	

Note: In the original text, the character "æ" generally appears as "œ", either by mistake or out of typographical necessity. This issue has been corrected where necessary.

Footnotes

¹ In most cases the author gives two and even three names for each substance.

² https://www.wordreference.com/definition/stibium.