

**DRUGS IN THE MEDIEVAL WORLD (CA. 1050–CA. 1400)**

Friday 7th – Saturday 8th December 2018

King's College London, Strand Campus

**Friday, 7 December:** Council Room (K2.29)

**09:30-09:45:** *Registration*

**09:45:** *Opening Remarks:* Dionysios Stathakopoulos

**09:50:** *Introduction:* Petros Bouras-Vallianatos

**10:00-12:40:** *Session I,* Chair: Dionysios Stathakopoulos (King's College London)

**Eliza Glaze** (Coastal Carolina University): The Confluence of Latin, Byzantine, and Arabic Pharmacy: Southern Italy c. 1050-1150 CE

**Arsenio Ferraces-Rodríguez** (Universidade da Coruña): The *Epistula de vulture* in Two 12th-Century Manuscripts: Magic, Medicine and Ideology

**Jeffrey Doolittle** (Fordham University): 'Efficassimum est Alexandrinum': Drugs and Efficacy in Early Medieval Latin Pharmacology

**Thanasis Rinotas** (Katholieke Universiteit Leuven): Drawing Lines of Connection between the Medicinal Properties of Stones and Philosophy in the Work of Albertus Magnus

**12:40-13:40:** *Lunch*

**13:40-15:40:** *Session II,* Chair: Barbara Zipser (Royal Holloway, University of London)

**Kathleen Walker-Meikle** (King's College London): Ibn Bakhtīshū's *On the Usefulness of Animals* in the Latin Tradition

**Ronit Yoeli-Tlalim** (Goldsmiths, University of London): Myrobalans: The Making of a Eurasian Panacea

**Leigh Chipman** (Hebrew University of Jerusalem): Digestive Syrups and After Dinner Drinks – Food or Medicine?

**15:40-16:00:** *Coffee/Tea*

**16:00-18:40:** *Session III,* Chair: Richard Greenfield (Queen's University, Kingston)

**Efraim Lev** (University of Haifa) and **Zohar Amar** (Bar Ilan University): The Alternative Uses of the Medieval Medicinal Substances that were Brought by the Arabs from the East

**Fabian Käs** (Universität zu Köln): Ibn al-Tilmīdh's Book on Simple Drugs. A Christian Physician from Baghdad on the Arabic, Greek, Syriac, and Persian Nomenclature of Plants and Minerals

**Ayman Atat** (Technische Universität Braunschweig): The Transmission of Pharmaceutical Knowledge through Ibn Al-Bayṭār (13th Century)

**Phillip I. Lieberman** (Vanderbilt University): Remedies or Superstitions: Maimonides on Mishna Shabbat 6:10

**Saturday, 8 December:** Council Room (K2.29)

**10:00-12:40:** *Session IV*, Chair: Petros Bouras-Vallianatos (King's College London)

**Grigory Kessel** (Österreichische Akademie der Wissenschaften & University of Manchester): Materia Medica in One Unedited Syriac Medical Manual

**Sivan Gottlieb** (Hebrew University of Jerusalem): "et probatum est" – A Hebrew Herbarium between Text and Illustration

**Heinrich Evanzin** (Paris-Lodron-Universität Salzburg): The Use of Heliotherapy Against Skin Diseases in Medieval Armenia – A Case Study on *Ptychotis verticillata*

**Michael Stanley-Baker** (Nanyang Technological University, Singapore): Tracking Materia Medica Across Time, Space, Genre, and Language

**12:40-13:40:** *Lunch*

**13:40-16:10:** *Session V*, Chair: William Macle hose (University College London)

**Matteo Martelli** (Università di Bologna): Mineral Drugs in Byzantine and Syriac Recipe-Books on Alchemy

**Petros Bouras-Vallianatos** (King's College London): Pharmacological Knowledge Among Greek-Speaking Physicians in Twelfth-Century Southern Italy and Sicily

**Richard Greenfield** (Queen's University, Kingston): Making Magic Happen: Understanding 'Drugs' in Later Byzantine Sorcery

**Maria Mavroudi** (University of California, Berkeley): Byzantine Greek Medical Glossaries of Arabic, Persian, and Turkish Terms

**16:10-16:30:** *Coffee/Tea*

**16:30-17:00:** Concluding Remarks: **Peregrine Horden** (Royal Holloway, University of London)

**Eliza Glaze** (Coastal Carolina University)

**The Confluence of Latin, Byzantine, and Arabic Pharmacy: Southern Italy c. 1050-1150 CE**

This paper systematically examines a series of eleventh-century Latin manuscripts and texts whose recipes antedate or are at most contemporary with practical treatises translated by Constantine the African († ante 1098 CE). The present author postulates an initial transmission of so-called “Arab pharmacy” by way of Byzantine channels which helped to create an interest in and market for remedies from the East, even in advance of the impact effected by Constantine’s new works. Antidotaria in manuscripts Vatican, Barb. lat. 160, Monte Cassino, MS 225 and Copenhagen, KB 1653 qu., all produced at or in association with the Abbey of Monte Cassino and copied between c. 1058 CE and c. 1080 CE, collectively reveal a new thirst for exotica from the East. The author concludes that as a regional center for text production, Monte Cassino had been for centuries at the forefront of new developments in Latin pharmacy, as exhibited by remedies in Monte Cassino MSS 69 and 97, a tradition that continued to the end of the eleventh century. After c. 1050 the manuscripts attest to a substantial acceleration in this process, due in large part to travel between Monte Cassino, Salerno, and Amalfi with Constantinople, and to increasing southern Italian roles in trade with the eastern Mediterranean generally in the decades after c. 1050 CE. These developments left a lasting mark upon the highly influential Latin pharmaceutical texts crafted in Salerno between c. 1100 and the middle of the twelfth century, resulting from the emergence of medical education and text-production in that “Hippocratic city”.

**Eliza Glaze** is Professor of History at Coastal Carolina University. She earned her PhD from Duke, examining Latin medical manuscripts and textual circulation from late antiquity through the twelfth century. Her special interest is medicine in Southern Italy and transformations effected there in the eleventh and twelfth centuries. Her most recent article appeared in *Early Science and Medicine* (2018). She is also a contributor to several books now in press, including a co-authored study of Constantine the African’s work in Salerno and Monte Cassino (Brepols), in the *Brill Companion to the Beneventan Zone*, and in volume 2 of Bloomsbury Academic’s *The Cultural History of Medicine*.

**Arsenio Ferraces-Rodríguez** (Universidade da Coruña)

**The *Epistula de vulture* in Two 12th-Century Manuscripts: Magic, Medicine and Ideology**

Under the title *Epistula de vulture* several early medieval manuscripts give a late antique text on the therapeutic power of a vulture’s body. There are several versions of this *Epistula*, so that almost every manuscript contains its own version, different in some points from that offered by other manuscripts. In a monograph published over twenty years ago, R. Möhler tried to give a synoptic view of this magical and medical text for the first time, gathering and studying all versions of the *Epistula* known at the time and based on the published basic transcriptions, by scholars like F. Cumont, L. MacKinney and L.B. Pinto. My paper will focus on two hitherto unpublished versions and therefore unknown to Möhler. The first has been added to the 11th-century manuscript Sankt Gallen, Stiftsbibliothek, 681, by a second hand at the beginning of the 12th century. The second one was included as a single chapter of a more extensive recipe book of a 12th-century witness, Salzburg Museum, 2169. In both cases the magical and medical content of the *Epistula* will be studied, paying special attention to how, where, and by whom these versions were executed.

**Arsenio Ferraces Rodríguez** is Professor of Latin Philology at the Universidade da Coruña, Spain, and currently Visiting Professor at the Università degli Studi di Messina. His preferred research field is late antique and early medieval medicine. He has been working for more than twenty years on the study and edition of medical recipe collections. Among his recent publications are the first critical edition of the *Curae quae ex hominibus atque animalibus fiunt*, based on Pliny's *Natural History*; a critical edition and translation of the early medieval *Ars medicinalis de animalibus*, and two shorter texts, both of them published for the first time, the *Liber Athenagore de urinis*, and a magical remedy collection untitled *Ad calculum*.

**Jeffrey Doolittle** (Fordham University)

**'Efficassimum est Alexandrinum': Drugs and Efficacy in Early Medieval Latin Pharmacology**

The mostly anonymous early medieval compilers of recipe collections in Latin manuscripts are not often thought of as curious about new pharmacological discoveries or creative when seeking to address obvious gaps in knowledge, especially since their remedies often claimed the exact opposite: the remedies worked for all imaginable situations and were of unquestionably ancient pedigree. However, the prodigious pharmacological exchange of the eleventh century was constructed upon these early medieval foundations. While the stereotype of early medieval Latin stagnation on the subject of medicine has been countered by Linda Voigts, Malcolm Cameron, Michael McCormick and others, it is still hard not to take early medieval recipe collectors at their word. The ingredients of early medieval recipes, however, provide clear evidence of subtle yet momentous changes in the early medieval approach to pharmacological knowledge. This paper focuses on a discrete corpus of recipes drawn from several early medieval adaptations of the *Historia Naturalis* by Pliny the Elder dealing with the teeth to illustrate a growing linkage between foreign or rare ingredients and efficacy. While many remedies in the corpus remained stable, the recipes that underwent changes through the redactions revealed a fascinating pattern: over time, the simple remedies tended to become simpler, whereas the longer remedies tended to accumulate new ingredients. These continuities and changes relate directly to knowledge about and preference for certain kinds of ingredients for different kinds of preparations as locally-procured substances were favored for the simple remedies with a plethora of new and foreign-sounding ingredients for the increasingly complicated compound medicines. This early medieval elaboration of complicated medicines with foreign or rare ingredients, together with the undoubted scholarly interests that lay behind it, can help us to better contextualize the dramatic incorporation of new *materia medica* of the later middle ages.

**Jeffrey Doolittle** is a Ph.D. student finishing up a dissertation under the supervision of Richard Gyug in the History Department at Fordham University in New York City. His research focuses on the medical culture of the monastery of Montecassino in the early middle ages through an investigation of a series of manuscripts written in the Beneventan script. He has a recent publication on the medieval legend of Charlemagne in Girona in an edited volume by William Purkis and Matthew Gabriele, published in 2016 and a chapter on murder in the *Historiae* of Gregory of Tours in a volume edited by Larissa Tracy, published in 2018. He also has a forthcoming chapter on science and medicine in the Beneventan Zone forthcoming in a volume edited by Andrew Irving and Richard Gyug.

**Thanasis Rinotas** (Katholieke Universiteit Leuven)

**Drawing Lines of Connection between the Medicinal Properties of Stones and Philosophy in the Work of Albertus Magnus**

In this paper I deal with Albertus Magnus (ca 1200-1280) and his *De Mineralibus*, a book which focuses on subjects pertaining to stones, metals and minerals in general. Among others, he speaks about the “powers of precious stones” and the “images” or “sigils” in stones which all together may confer medicinal properties on them. However, during the Middle Ages these special properties were often associated with demonic interventions and ultimately with demonic magic. My aim in this paper is to show that Albertus Magnus’s understanding of the aforementioned properties depends heavily on his natural philosophy and therefore the medicinal aspects of the stones may be explained and justified in reference to natural philosophy. In order to do this I will first present a general account on the philosophical doctrines which are connected with the properties of stones (*De mineralibus II, tr.i, c.4*). Afterwards, I will deal with the subject of sigils by explaining, in terms of Albertus’s philosophy, how it is possible for them to enhance the medicinal “powers” of the stones (*De mineralibus II, tr.iii, c.1-3 and 6*). In the last part of my paper I will discuss particular cases of stones and their medicinal properties. Specifically, I try to explain and justify through Albertus’s philosophy and partly through his theology why for example *onyx* has the power to affect the black bile and increase sadness and why *smaragdus* is supposed to hinder epilepsy. Going a bit further, I argue that placing certain stones on particular parts of our body is not a random act but something which also pertains to the “bodily” philosophy of Albertus Magnus.

**Thanasis Rinotas** is a PhD Student/FWO Fellow (Research Foundation Flanders) at KU Leuven. His research interests include ancient Greek and medieval philosophy, the history of science with a focus on alchemy, magic and astrology. His most recent articles are on ‘Stoicism and Alchemy in Late Antiquity: Zosimus and the Concept of Pneuma’ (2017) and ‘The Interplay among Alchemy, Theology and Philosophy in the Late Middle Ages: The Cases of Roger Bacon and John of Rupescissa’ (2017).

**Kathleen Walker-Meikle** (King’s College London)

**Ibn Bakhtīshū’s *On the Usefulness of Animals* in the Latin Tradition**

This paper will discuss the Latin “life” of an Arabic text on the medical (and magical) uses of the individual body parts of animals. It is a translation of the eleventh-century physician ‘Ubayd Allāh ibn Bakhtīshū’s *Kitāb ṭabā al-ḥayawān wa khawāṣṣihā wa manāfi’ a’ dā’ihā* (*Book on the characteristics of animals and their properties and the usefulness of their organs*). Ibn Bakhtīshū’s original treatise itself does not survive in Arabic, but the entries on animals were used in Arabic bestiaries of the “Ibn Bakhtīshū” tradition. These bestiaries are of later date than the earliest Latin translation, which preserves the original text, although not in a complete state. The Latin text consists of individual entries of around fifty-six animals, usually starting with the lion, followed by assorted domestic and wild quadrupeds, birds, “crawling” beasts, and ending with man and woman. Most of the surviving manuscripts date between the 13<sup>th</sup> and 15<sup>th</sup> century, although the text was still being read and cited in natural history works until the end of the 16<sup>th</sup> century (and was printed three times). In the Latin tradition it was usually

ascribed to Rhazes and less frequently to Galen. Apart from discussing the manuscript history and the pharmacological content of these animal “simples”, my paper will also cover reception, sources for the original entries and the extensive use of Arabic terminology in the text, particularly for the names of the animals themselves and for units of measurements.

**Kathleen Walker-Meikle**'s research interests focus on the relationship between animals and humans, particularly in regard to pharmacology, toxicology and natural history. She is currently a research fellow on the Renaissance Skin project at King's College London, focusing on animal skin and skin diseases in humans in the period. Publications include *Medieval Pets* (Boydell and Brewer, 2012), 'Animals' in the *Cultural History of Medicine* (Bloomsbury, 2018), 'Toxicology and Treatment: Medical authorities and snake-bite in the Middle Ages', *Korot: The Israel Journal of the History of Medicine and Science*, (2014), pp. 85-104.

**Ronit Yoeli-Tlalim** (Goldsmiths, University of London)

### **Myrobalans: The Making of a Eurasian Panacea**

The history of myrobalan as a wondrous drug intersects realms of pharmacology, of trade, of the imagination and of religion. Its long Eurasian history can be traced through the notions of India as a source of wondrous drugs and medical knowledge, Buddhist narratives on the Medicine Buddha, the medical and trade documents from the Cairo Genizah, Maimonides's links with India—and all the way to modern Tibetan pharmaceuticals, where myrobalan features as the most widely used symbol for Tibetan medicine. The analysis of special Asian *materia medica*—such as Indic myrobalans, Tibetan musk or Chinese rhubarb—allows us to look at such substances not necessarily as stable *things*, but as “nexuses in knowledge systems around which meaning and practice cohere and agglomerate”, as historian of science Pamela Smith suggests in a forthcoming book.<sup>1</sup> While in scholarship a “cultural meridian” was constructed between Persian medicine and Indic medicine, the first seen as part of the Greco-Arab-European family, and the latter as part of the Asian medical traditions family, transmitted through Asia along with Buddhism, pharmacology is one area where this divide is much more fluid than generally perceived. As Levey has pointed out, in the area of pharmacology, it is geography which plays a major role. There is thus nothing surprising that we find plenty of Indic *materia medica* in texts deriving from areas of Persian/Iranian cultural milieu, whether in Arabic, Syriac, or in Hebrew, as well as in central Asian languages: in Khotanese, Tocharian and Sogdian. Trying to reconstruct the many Eurasian travels of myrobalan, we need to look at simultaneous and intersecting trails: the linguistic trail, the trade trail and the tale trail. Tracing the Eurasian biography of myrobalans calls us to move between the real and the constructed: between the object, the plant itself, its chemical composition and natural traits, and the constructions which define it: the stories, its trade practicalities and the pharmacological texts which discuss it. These different planes intersect, inform and construct each other. This paper will trace a number of features from these different Eurasian trails in order to explore some of these issues.

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<sup>1</sup> Pamela Smith, “Nodes of Convergence, Material Complexes, and Entangled Itineraries” in Pamela Smith (ed.), *Entangled Itineraries of Materials, Practices, and Knowledge: Eurasian Nodes of convergence and transformation*. Pittsburgh: University of Pittsburgh Press (in press).

**Ronit Yoeli-Tlalim** is a Senior Lecturer in the History Department at Goldsmiths, University of London. Her research deals with the transmission of medical ideas along the so-called 'Silk-Roads'. Yoeli-Tlalim co-edited (with Vivienne Lo) the Silk Roads Special Issue of *Asian Medicine: Tradition and Modernity* (2007). Her book *ReOrienting Histories of Medicine: Encounters along the Silk Roads*, will be published by Bloomsbury in 2019.

**Leigh Chipman** (Hebrew University of Jerusalem)  
**Digestive Syrups and After Dinner Drinks – Food or Medicine?**

The influence of Galenic medicine meant that in the medieval Middle East, thinking about health and illness became closely connected to thinking about food and cooking. Can we know what happened in practice? Building on the research of Paulina Lewicka, David Waines and Manuela Marín, and the translations of Nawal Nasrallah, on the one hand, and my own work on pharmacology and pharmacy in medieval Cairo, on the other, I will try to show how fine the line was between “food” (or drinks) and “medicines”. In this presentation, I will examine the recipes appearing in two books composed in Mamluk Cairo: *Minhāj al-dukkān* (“How to Run a Pharmacy”), a pharmacopoeia composed in Cairo in 1260 by an otherwise anonymous Jewish pharmacist, and *Kanz al-fawā'id* (“Treasure Tove of Benefits and Variety at the Table”), an anonymous cookbook dated by the editors and translator to fourteenth-century Cairo. While obviously each book contains a wealth of recipes that does not appear in the other, there are certain areas of overlap, most prominently in the area of digestive preparations. Comparing and contrasting not only the instructions appearing under the same headings, but also the appearance (or lack thereof) of medical indications, may provide information as to which side of the divide given foodstuffs were thought to fall. In the hopes of further advancing our knowledge of medical practice in medieval Cairo, I will also investigate whether *Kanz al-fawā'id* contains recipes for the foods recommended in the dietetic advice appended to several prescriptions preserved in the Cairo Genizah.

**Leigh Chipman** (PhD, The Hebrew University of Jerusalem, 2006) studies aspects of the social and intellectual history of medicine and the sciences in the medieval Islamic world. She is currently preparing an article on affluence and collapse in eleventh-century Fustat, and is about to begin a project on the afterlife of medieval pharmacy in the late Ottoman and colonial Middle East. Leigh has published 2 books and some 20 articles; most recently, she was lead co-editor of a double special issue on medical traditions of the journal *Intellectual History of the Islamic World*. Leigh is a freelance language editor and translator from Hebrew and Arabic to English, specializing in academic writing.

**Efraim Lev** (University of Haifa) and **Zohar Amar** (Bar Ilan University)  
**The Alternative Uses of the Medieval Medicinal Substances that were Brought by the Arabs from the East**

For more than 1,000 years Arab medicine held sway in the ancient world, from the shores of Spain in the West to China, India and Sri Lanka in the East. Arabic medical heritage, in its late practice, was in fact based on a conglomerate of diverse cultural foundations: Greek, Indian, Persian, Mesopotamian, Syrian, Egyptian, Slavic, Spanish and North African (Maghrib). Literature (and translations) were just one way to transmit medical knowledge from the Classical to the Arab world and from there back to the West. Other methods were trade,

diplomacy, pilgrimage and waves of conquests. These exposed the population to a new medical tradition, new physicians from various schools of thought and new medicinal substances. Most of the medicinal substances introduced by the Arabs (about one hundred in total), originated in Southeast Asia. The ways in which they were distributed and assimilated into the Mediterranean region varied; however, most of them were distributed due to the "strong market forces", namely the new trading routes and economic conditions created by the Arab conquests and their governmental policies. The vast majority of these substances were fully accepted, first, as spices, perfumes, incense and ingredients for dyeing and tanning and, later, as medicines. Our research focuses on some of the "new" medicinal substances that enriched the existing inventory of drugs; i.e. the influence of the legacy of Indian pharmacology on Galeno-Arab medicine in general, and the substances that had other uses, in particular. The research is based on various historical sources derived from theoretical and practical medical and pharmaceutical literature (alchemy and perfumery books, lexicography, accounts and logs of geographers and travelers, herbal and botanical books, general medieval encyclopedias, commercial literature and the vast Cairo Genizah manuscripts, as well as Byzantine and other Western literature, including commercial documents, the Italian archives and publications of studies). The findings of our research reveal that the main "Arab" medicinal substances that had other uses are:

Industrial substances (lacca, teak, sappan wood, warras);

Perfumes and incense (agarwood, ambergris, camphor, jasmine, musk, sandalwood, screw pine);

Gemstones (diamond, corundum, and bezoar-stone);

Spices (betel pepper, betel palm [areca nut], galingale [galanga], clove, coconut, nutmeg, perfumed cherry, turmeric).

Interestingly enough, in the culinary world of the West, Indian spices such as coconut, turmeric and nutmeg are dominant to this day.

**Efraim Lev** is a full professor at the University of Haifa, and Head of the Dep. of Humanities and Arts at the Technion, Haifa. Prof. Lev was trained both as a historian and as a field biologist and therefore his academic work has always had a strong interdisciplinary focus. In his current project, "Medicine of the Genizah People", the research team he created works on various aspect of medicine practiced by the medieval Jewish practitioners. Prof. Lev has published 10 books and more than 85 peer-reviewed articles and 10 chapters.

**Fabian Käs** (Universität zu Köln)

**Ibn al-Tilmīdh's Book on Simple Drugs. A Christian Physician from Baghdad on the Arabic, Greek, Syriac, and Persian Nomenclature of Plants and Minerals**

Amīn al-Dawla Hibatallāh ibn Ṣā'īd Ibn al-Tilmīdh was born in Baghdad around the year 1073 into a family of Christian physicians. After years of travels in Persia, he returned to his hometown, where he served several Abbasid caliphs as personal physician. These entrusted him with high-ranking positions, namely that of "head of physicians" and of director of the renowned "Aḏudī" hospital. Ibn al-Tilmīdh was also a prominent member – according to his Muslim biographers a "priest and head" – of the Nestorian community of Baghdad, where he died in 1165 aged over 90. Ibn al-Tilmīdh wrote about twenty books and treatises, including collections of his own Arabic poems and letters. Most of his medical works were commentaries and abridgements of Greek and Arabic classics, e.g., Galen's commentaries on

Hippocrates' "Aphorisms" and his "Prognostics". Two of his abbreviations hitherto deemed to be lost – those of al-Rāzī's *Hāwī* and Miskawayh's book on beverages – were recently identified in a manuscript kept in Ankara. His most renowned writings are his *Aqrābādihīn*, a dispensatory in 20 chapters, and a concise treatise on phlebotomy. Ibn al-Tilmīdh's main work on simple drugs is little known and has not yet been edited. The *Kitāb Quwā l-adwiya* ("Book on the faculties of simple drugs") or *al-Maqāla al-Amīniyya fī l-adwiya al-bīmāristāniyya* ("Amīn [al-Dawla's] treatise on the drugs of the hospital") is preserved in two manuscripts both kept in London (British Library Or. 8294 and Wellcome Medical Library, WMS Or. 9). Because of their divergent titles, most modern authors erroneously assumed that the manuscripts represent two different books. The text consists of 287 alphabetically arranged entries on medicinal plants, minerals, and a few animal products. Each entry is divided into five sections, dedicated to synonyms, descriptions, "faculties", benefits of the simple drug, and its use in compound remedies at the 'Aḍudī hospital. The most interesting of these sections is the first, since Ibn al-Tilmīdh mentioned there not only the usual Arabic names of plants and minerals and their synonyms. Instead, he regularly listed the Syriac (written in Syriac characters in one manuscript), Persian, and Greek names of the drugs. Because of his Christian education and his long sojourn in Iran, he certainly mastered Syriac and Persian. One of his biographers even mentions his knowledge of Greek, which seems unlikely for Baghdad in the 12<sup>th</sup> century. He rather may have found these synonyms in Syriac lexica or the Arabic versions of Greek medical books, especially the translations of Dioscorides' *Περὶ ὕλης ἰατρικῆς*.

**Fabian Käs** (Ph.D. in Semitic Studies, Munich 2008) is since 2013 Research Fellow at the University of Cologne. His main fields of interest are medieval Arabic medicine, pharmacology, and mineralogy. His publications include *Die Mineralien in der arabischen Pharmakognosie* (Wiesbaden 2010) and *Al-Maqrīzīs Traktat über die Mineralien* (Leiden 2015).

**Ayman Atat** (Technische Universität Braunschweig)

### **The Transmission of Pharmaceutical Knowledge through Ibn Al-Bayṭār (13th Century)**

The scientific dialogue between cultures has a crucial role in the development of knowledge either through the translation movements of main sources, or through the traveling of scientists themselves between cultural realms. The same context applies to pharmaceutical knowledge: many different encyclopaedias affected its progress, in addition to the movement of authors to collect information and details on simple drugs and pharmaceutical formulations. The influence of scientific dialogue appears clearly in the Arabic medical civilization through medical writings from the medieval and early modern periods, which later functioned as an essential source of pharmaceutical information in both the Ottoman and Latin cultural spheres. One of the most famous trips to collect pharmaceutical information was that undertaken in the 13th century by Ibn al-Bayṭār, who travelled between the western and eastern parts of the Arab world in order to get more information on materia medica. He wrote a *Compendium on Simple Drugs and Foods* (*Kitāb al-Jāmi' li-mufradāt al-adwīya wa al-aghdhīya*), an extremely important source upon for medical historians wishing to study the culture of simple drugs in Arabic medicine. In addition to that, he used a comprehensive and clear reference system for the information on simple drugs and their therapeutic benefits by mentioning his sources (Arabic, Persian, Indian, or Greek ones), by telling stories of places he had visited and collected information from the local people, or by doing some trials by himself and providing his observations. This paper aims to shed light on the valuable role played by

Ibn Al-Bayṭār and his *Compendium* in the progress of pharmaceutical culture in the Arabic and Ottoman realms, by discussing some examples in order to clarify his role in the transmission of pharmaceutical knowledge as well as explore some subsequent authors who cited Ibn Al-Bayṭār in their books.

**Ayman Yasin Atat** received his Ph.D. in the History of Medical Science from the University of Aleppo in 2014 and is currently is Philipp Schwartz Fellow in the Department of History of Science and Pharmacy at the Technische Universität, Braunschweig (Germany). The author of a book and several articles, he is an expert on Arabic, Ottoman and Islamic medicine, Arabic medical manuscripts, and ethnobotany in medical history.

**Phillip I. Lieberman** (Vanderbilt University)  
**Remedies or Superstitions: Maimonides on Mishna Shabbat 6:10**

The Mishna (Shabbat 6:10) allows a Jew to carry “a locust’s egg, a fox’s tooth, or the nail of one who has been hanged” on the Sabbath—which would otherwise violate a prohibition on carrying in the public domain—because they serve as remedies. In *The Guide to the Perplexed* III:37, Moses Maimonides inveighs against pagan “medical” practices of this ilk which give a sheen of efficacy but are ultimately dependent on magic and astrology. At the same time, he assents to the Mishna’s exceptions in allowing certain remedies confirmed through experience – even if on the surface they are not “prescribed by reason”. His preference of empiricism over principles or causes is noteworthy. In this, Maimonides follows in the footsteps of others such as al-Ghazālī in conceding to Galen’s medical empiricism over medical theory. In this presentation, I will examine the Mishna’s exceptional cases in light of the literature of antiquity including rabbinic literature, Galen’s works, *The Nabatean Agriculture* (often cited by Maimonides), as well as the medieval pharmacological literature and Maimonides’ own commentary on the Mishna in order to discuss the efficacy of these various therapies. I will also briefly sketch out how Maimonides’ begrudging acceptance of experience over theory also motivates his “proof” of creation of the world: Maimonides acknowledges that creation cannot be proven demonstratively but rather he is forced to resort to a dialectic proof instead. Here, again, we may see the influence of Galen (perhaps again through al-Ghazālī in the *Tahāfut al-falāsifa*) as in *On His Own Opinions* he suspends judgment on the eternity of the world. Thus, I will reflect on the importance of Maimonides’ loyalty to Galen’s experimental method for both physics (of which medicine may be seen as a subfield) and metaphysics and show the continuities across domains of his methodological approach.

**Phil Lieberman** is Associate Professor of Classical and Mediterranean Studies, Associate Professor of Jewish Studies and Law, Associate Professor of Religious Studies, and Affiliated Associate Professor of Islamic Studies and History, at Vanderbilt University. He is an economic, social, legal and intellectual historian of the Jews of the medieval Islamic world. He is currently at work (with Lenn Goodman, also of Vanderbilt) on a new translation of Maimonides’ *Guide to the Perplexed*, forthcoming from Stanford University Press, as well as a monograph on the dynamics of Jewish urbanization under early Islamic dynasties.

**Grigory Kessel** (Österreichische Akademie der Wissenschaften & University of Manchester)  
**Materia Medica in One Unedited Syriac Medical Manual**

The unique 13th-century manuscript preserved in the collection of the Syrian Orthodox Patriarchate contains the largest Syriac medical work among those that are known today. Occupying more than four hundred folios written in tiny cursive script, *Kunnāšā* contains a comprehensive medical handbook arranged in seven books that cover *materia medica*, hygiene, diet and the treatment of diseases from top to toe. The work is remarkable for its author's masterful command of pharmacology that undoubtedly points to his familiarity with diverse pharmacological literature but maybe also to his direct medical experience. Although the author does not unveil his main sources, the *Kunnāšā* is remarkably similar to the *Pragmateia* of Paul of Aegina that appears to be the model of the Syriac work both in its composition and content. Regrettably, the very beginning of the work that must have contained the author's name is wanting and thus the issue of the authorship is open to conjectures. Based on the available evidence, I have proposed elsewhere to consider as the author ʾĪšōʿ bar ʾAlī (in Arabic, ʾĪsā b. ʾAlī), who is known as a personal physician of Caliph al-Muʿtamid (870–892), a disciple of Ḥunayn b. Ishāq and the author of the Syriac-Arabic Lexicon. In my talk, I am going to explore the chapter on materia medica while trying to identify the sources used by the author.

**Grigory Kessel**, graduated from the Moscow State University, and is currently affiliated with the Austrian Academy of Sciences and the University of Manchester. He specializes in the study of the literary heritage of Syriac Christianity with particular attention to manuscripts. Besides manuscripts, his publications deal with Syriac medical and monastic texts. Kessel is a participant of a number of cataloguing projects, including the Sinai Palimpsests Project and those of the Hill Museum and Manuscript Library. Kessel was a recipient of a fellowship in Byzantine Studies at Dumbarton Oaks Research Library and currently holds an ERC Starting Grant.

**Sivan Gottlieb** (Hebrew University of Jerusalem)  
**“et probatum est” – A Hebrew Herbarium between Text and Illustration**

Paris, Bibliotheque Nationale heb. 1199 is a Hebrew illuminated manuscript from the late 15th century, northern Italy. This manuscript is part of a specific herbal tradition known as the “Alchemical Herbals”, which are characterized by particular illustrations of plants (mainly imaginary) and their roots (geometric, zoomorphic, or anthropomorphized) which are the focus of the illustrations. The illustrations are much more dominant than the text in these manuscripts (sometimes excluding the text on a page completely); thus, these manuscripts can be considered as “picture books” rather than regular medical “text books”. Additionally, these Herbals share a common textual tradition which lists the plants in a non-alphabetical order. It seems that there was one manuscript (now lost) that was the model for this group and which, as commonly believed, was copied in Italy in that period. The Herbarium includes 130 different plant illustrations with the Latin name of the plant in Hebrew letters; some pages include texts of mostly Latin translations with material added or removed in Hebrew. The texts focuses on the use of the plant, which is usually medicinal (e.g. *betonega* for eye diseases, injuries, liver and spleen problems) and includes medical recipes, but at times this is related to charms and alchemical uses as well. Interestingly, five recipes are followed by a short

efficacy statement (“it has been tested”) in different hands, which may indicate that the manuscript was used for practical medical purposes. In my talk I will explore the textual and illustrated contents of the Hebrew Herbarium and discuss the pharmacological significance of the changes made by the Hebrew scribe(s). Considering the Hebrew Herbarium manuscript in the context of the alchemical group will reveal its unique character. The illustrations display resemblance to one manuscript in particular (Bibl. Dip. Di Botanica dell’Università, Firenze MS Firenze 106), but small changes will be discussed. I will use example of the Mandrake plant as a case study. The comparative analysis will contribute, moreover, to our understanding of the people behind the production of the manuscript and its purpose in the culture of that time.

**Sivan Gottlieb**, is a PhD candidate at the Department of Art History, The Hebrew University of Jerusalem, Israel as part of the program of the President’s stipends for honors doctoral students in the Faculty of Humanities at that University. I am writing my dissertation on “Illuminated Hebrew Medical Manuscripts of the Late Middle Ages” under the guidance of Prof. Sarit Shalev Eyni.

**Heinrich Evanzin** (Paris-Lodron-Universität Salzburg)

**The Use of Heliotherapy Against Skin Diseases in Medieval Armenia – A Case Study on *Ptychotis verticillata***

Besides the records of ancient authors like Xenophon, Strabo and Dioscorides, Armenian sources provide information about historical medical facilities of the Urartians as well as “healing temples” from pagan times. Traces of leprosaria can be found by searching certain terms in Armenian toponyms used to call certain districts in Armenian-populated cities. Similarly, Xoranic’i mentions in his *History*, that sick people went to the *Sōsianc’ antarê* (plane forest) in Armavir. Before the conversion to Christianity, the Armenian princess Aghvita founded a leprosarium at the Arbenout curative water springs in the city of Derjan which was capable of hosting 35 patients and specialised on helio- and hydrotherapy, as Mxitar Herac’i mentioned. Even if he did not record any details on the therapy itself, we can reconstruct what kind of therapy the Armenian physicians of Arbenout must have performed. Especially in case of heliotherapy as treatment against leprosy we can be very sure that it was considered very effective to use a method, described earlier by Ibn al-Bayṭār which was later refined by the physician Amirdovlat’ Amasiac’i. By studying his encyclopaedic *Materia Medica Angitac’ Anpet’* we learn about the very intriguing rational approach and the photosensitising effects of Aatriral (*Ptychotis verticillata* DUBY, Apiaceae) in the fight against skin diseases.

**Heinrich Justin Evanzin** holds a degree in Pharmaceutical Sciences (Magister pharmaciae) from the University of Vienna. During his final year project in Pharmacy, he broadened his scope and added an Extension Curricula on Byzantine history and culture to his study. Since 2016, he works on his PhD-thesis on Onomastics of Armenian Phytonyms in Linguistics at the Paris-Lodron-University of Salzburg under supervision of Assoc.-Prof. Dr. Dr. h.c. Jasmine Dum-Tragut Bakk.rer.nat. (Linguistics, Armenian Studies, Hippology). Besides his scientific activities, he keeps in touch with patients as a pharmacist at the community pharmacy.

**Michael Stanley-Baker** (Nanyang Technological University, Singapore)  
**Tracking Materia Medica Across Time, Space, Genre, and Language**

This paper demonstrates how digitized textual corpuses can be used to analyse the distribution of drugs and drug knowledge at large scale in historical China, across Daoist, Buddhist and medical sources. Using a combination of tools called Docusky and MARKUS, scholars can now construct their own databases, and attach metadata describing bibliographic data such as time, genre, authorship, dynasty, and also GIS site of production. Researchers can search large data sets of terms (eg. containing some 12,000 drugs) and the output statistical frequency of these terms. The toolkits then allow for textual comparison, graphic, and GIS mapping of which terms are distributed across time, space, and genre. This enables entirely new kinds of analysis. I will demonstrate three examples, showing 1) how to compare drug contents in texts and what historical questions it leads to, 2) how to make context-discovery of new sources, and 3) geo-location of texts based on drug contents. This toolset, developed initially for Chinese-language is being developed at Nanyang Technological University, in collaboration with National Taiwan University, to be usable for texts in other languages, and to generate a digital research environment for comparison of materia medica texts across languages. We invite your interest and collaboration.

**Michael Stanley-Baker** 徐源 is an assistant professor in History and at the Lee Kong Chian School of Medicine at Nanyang Technological University, Singapore. He has previously held research posts at the Max Planck Institute for the History of Science (MPI), Leipzig University, the Academia Sinica in Taipei, and the Needham Research Institute. He studies medicine and religion in early medieval and contemporary China and the wider Sinophone world with a focus on embodiment, practice and the history of knowledge. In addition to close reading primary sources, he also develops digital tools for large-scale corpus analysis of pre-modern texts, in close collaboration with National Taiwan University Digital Humanities Research Centre. While concluding one project to produce a large corpus of Buddhist and Daoist texts, he is now investigating the potential for studying multi-lingual medical corpora across classical and medieval Eurasia. He also serves as Vice-President of the International Association for the Study of Traditional Asian Medicine (IASTAM). You can find more information about his work at: <https://michaelstanley-baker.com/digital-humanities/>

**Matteo Martelli** (Università di Bologna)  
**Mineral Drugs in Byzantine and Syriac Recipe-Books on Alchemy**

My paper will focus on a selection of recipes included in the alchemical writings preserved by two almost contemporary manuscripts: the Syriac MS Mm. 6.29 (15<sup>th</sup> c.), kept at the Cambridge University Library, which includes thirteen (so-far unpublished) books ascribed to the Graeco-Egyptian alchemist Zosimus of Panopolis (III-IV c. AD); the MS Meteora, Saint Stephen n. 97 (1503-1504), which includes an anonymous collection of recipes under the general heading *On the Much Valuable and Famous Art of Goldsmiths*. Even though this Byzantine recipe-book has been edited by the French chemist Marcelin Berthelot at the end of the 19<sup>th</sup> century (*Collection des anciens alchimistes grecs*, vol. II, pp. 321-337) the recently discovered Meteora manuscript preserves a different recension of the text, with important variations and additional material. The comparative analysis of these sources will make it

possible to study the transfer and transformation of technical knowledge over centuries between Byzantium and Baghdad. On the one hand, the Syriac translations of Zosimus' books point to the circulation of alchemy within Christian communities who used Syriac as spoken and/or liturgical language under the Abbasid caliphate. On the other hand, the Byzantine recipe-book confirms the persistence of alchemical techniques in Byzantium beyond the 10<sup>th</sup> century, when alchemical texts were selected and collected in anthologies, as emerges from the study of the earliest alchemical manuscripts (e.g. *Marcianus* gr. 299) as well as from the information preserved in Michael Psellos' works. By comparing recipes that describe similar procedures (e.g., gilding techniques, ink making) often based on the treatment of the same mineral ingredients, such as arsenic and mercury ores, it will be possible to show how alchemical techniques were disseminated and eventually reshaped in a variety of texts, which were produced in different periods, in different languages, and across distinct, albeit contiguous cultural areas.

**Matteo Martelli** is associate professor in History of science at the University of Bologna, where he arrived after spending several years as research associate in Philadelphia (Chemical Heritage Foundation) and Berlin (Humboldt University and Berlin-Brandenburg Academy of Sciences and Humanities). He is currently principal investigator of the ERC project (Consolidator Grant) *Alchemy in the Making: From ancient Babylonia via Graeco-Roman Egypt into the Byzantine, Syriac and Arabic traditions (1500 BCE - 1000 AD)*. His main research interests are Greek and Byzantine science (alchemy and medicine in particular) and its reception in Greek and Syriac/Arabic.

**Petros Bouras-Vallianatos** (King's College London)

### **Pharmacological Knowledge Among Greek-Speaking Physicians in Twelfth-Century Southern Italy and Sicily**

Byzantine rule in Southern Italy came to an end in the late eleventh century. However, Greek culture was preserved in these areas in isolation from the rest of the Greek-speaking world for many centuries. In the field of medical literature, we are aware of a considerable number of Greek manuscripts that were copied in Southern Italy from the tenth century onwards. Thanks to these manuscripts, we also know about physicians, such as the twelfth-century father and son Philip and Nicholas Xeros from Reggio, who recorded their pharmacological knowledge in surviving recipes. The first piece of evidence comes from Vaticanus gr. 300 (which *inter alia* contains the earliest surviving version of the Greek translation of the famous Arabic medical work by Ibn al-Jazzār *Zād al-musāfir wa-qūt al-ḥādir*, more commonly known by its Latin title *Viaticum*), which preserves several recipes connected with the Xeros family. In addition to this, I aim to contextualise for the first time a hitherto unedited collection of recipes ascribed to Philip Xeros and the otherwise unknown physician Euphemios of Sicily, which has survived in Parisinus gr. 2194. Further evidence is used from surviving examples of anonymous plant lexica. In this analysis my main focus will be on the presence of the newly introduced Arabic pharmacological lore. This will not only raise scholarly interest in a neglected area of medieval Greek therapeutics, but more specifically it will contribute to the wider debate concerning knowledge transmission in the field of medieval medicine and pharmacology in the Mediterranean. Ultimately, the paper is intended to emphasise the area's role as a significant gateway for the influx of Arabic pharmacological knowledge into Byzantine medical theory and practice in subsequent centuries.

**Petros Bouras-Vallianatos** is a Wellcome Trust Research Fellow in the Department of History at King's College London, where he is working on a three-year project, "Experiment and Exchange: Byzantine Pharmacology between East and West (ca. 1150-ca.1450)". He has published several articles on Byzantine and early Renaissance medicine and pharmacology, the reception of the classical medical tradition in the Middle Ages, and palaeography, including the first descriptive catalogue of the Greek manuscripts at the Wellcome Library in London. He has co-edited the *Greek Medical Literature and its Readers: From Hippocrates to Islam and Byzantium* (Routledge, 2018) and the *Brill's Companion to the Reception of Galen* (Brill, 2019).

**Richard Greenfield** (Queen's University, Kingston)

### **Making Magic Happen: Understanding 'Drugs' in Later Byzantine Sorcery**

"Byzantines" (whoever that deceptively simple term embraces in its protean grasp) clearly felt able to choose between, and engage with, a pluralistic mixture of practices and a distinctly diverse set of attitudes, theories and methodologies when grappling with the extremely uncertain world in which they lived. Thinking about "drugs" in Byzantine magic thus involves an exploration of one small segment on the fluid spectrum of possible responses that were open to people faced with ill-health and sickness, itself part of an even broader spectrum of ways in which they sought to cope with their many other problems and aspirations. Modern scholars may once have sought comfort and simplicity in describing and examining these responses under such discrete headings as rational, spiritual and magical, but it is now widely recognized that such distinctions were not applied consistently, if ever, by the Byzantines. Even the modern medical concept of a "drug", defined by the Oxford English Dictionary as "A medicine or other substance which has a physiological effect when ingested or otherwise introduced into the body" has only a limited relevance in the later Byzantine context. What constituted a drug, for them, how it was thought to work, and how it might be administered seems to have involved a considerably broader conceptual framework and wider range of practice than our own. I suggest that looking at some specific examples in later Byzantine magic helps us to understand this difference. I consider three key questions: What was thought to make a substance potentially effective as a "drug" in this context? How was it employed, particularly in ways that went beyond its use in contemporary rational medicine? And how did these applications and conceptions "bleed" into other areas of healing and coping, such as those practiced in contemporary Christian religious situations? By briefly exploring these questions, I hope to clarify the range of meaning that needs to be encompassed by the term "drug" when it is used in relation to the later Byzantine world, something I believe will be of interest to, and have implications for, everyone who is thinking about Byzantine, and Medieval, pharmacology.

**Richard Greenfield** currently holds the position of Professor in the Department of History at Queen's University, Kingston, Ontario where he has taught for the past 30 years. A graduate of King's College, London and a former student of Donald Nicol, his work has focused on aspects of Byzantine popular religion from demons and magic to hagiography and pilgrimage. His most recent significant publication is the co-authored edition with Alice-Mary Talbot, *Holy Men of Mount Athos* (2016). He is also a member of the editorial board of the *Dumbarton Oaks Medieval Library, Greek Series*.

**Maria Mavroudi** (University of California, Berkeley)  
**Byzantine Greek Medical Glossaries of Arabic, Persian, and Turkish Terms**

The paper will discuss the introduction of Arabic, Persian, and Turkish technical terms into Byzantine Greek technical literature from the tenth century into the early Ottoman period by focusing on dictionaries of *materia medica* and will consider both oral and written avenues of transmission.

**Maria Mavroudi** is Professor of History and Classics at the University of California, Berkeley. Her research interests include: Byzantium and the Arabs; bilinguals in the Middle Ages; Byzantine and Islamic science; the ancient tradition between Byzantium and Islam; Byzantine intellectual history; survival and transformation of Byzantine culture after 1453. She is author of *A Byzantine Book on Dream Interpretation: The Oneirocriticon of Achmet and Its Arabic Sources* (Brill, 2002) and has co-edited *The Occult Sciences in Byzantium* (Pomme d'Or, 2007).

**Peregrine Horden** (Royal Holloway, University of London)  
**Concluding Remarks**

**Peregrine Horden** is professor in medieval history at Royal Holloway, University of London and a Fellow of All Soul's College, Oxford. His research is in the area of Mediterranean cities and medicine in the Middle Ages. His latest collection of studies, *Cultures of Healing, Medieval and After* is forthcoming in 2019.