Over the last decade at least, historians have debated whether structural or systemic connections among different regions of the globe existed in the period from about 1350 to about 1850. Among the various possibilities put forward—the use of gunpowder, conflict between nomads and settled urban dwellers as population grew and cultivated land use increased, the spread of pandemics, centralization of government, vernacularization of canonical textual corpora, conceptions of universal rule and millennial expectations—one phenomenon has been raised more persistently than others: the connections of commerce and increasing global economic integration, especially in the burgeoning trade in precious metals and luxury commodities across long-distance commercial networks. Of course, trade had flowed across Eurasia, around the Indian Ocean, and over the Mediterranean for millennia, but in this "early modern" period, larger parts of the globe became connected by the establishment of more or less regularized trading routes. Commodities and tribute bounced and jostled over these routes and along with them flowed knowledge. Knowledge moved in individuals as they migrated or were resettled in new territories and it moved along with sailors, soldiers, and merchants as they pursued trade and war. It traveled in objects, instruments, manuscripts, and printed books as trade routes opened up and collectors avidly sought rare and beautiful things, and it moved as factors sent back information to the metropolis. It moved as new institutions of European colonial administration, such as the Casa de Contratación of the Spanish monarchy, of religious propagation, such as the Jesuits, as well as of the new science, such as the Académie Royale des Sciences in Paris, were established and began to sponsor information gathering of all kinds. Knowledge moved not just geographically but also epistemically, as knowledge systems of different social and cultural groups intersected. Knowledge was transformed as it traveled from local settings and vernacular modes of expression—such as manufactories in Jingdezhen and Puebla, shipbuilding arsenals in Calcutta and Ragusa, workshops and gardens everywhere, curiosity cabinets, and ships, to name only a few examples—to the knowledge and written forms of evidential studies, Bencao (materia medica) and pulu texts, astronomy and astrology, and of the "new experimental philosophy." This movement resulted in new knowledge at the same time that it formed new hierarchies of intellectual authority. Does this global circulation of knowledge tie together an early modern world? Did it help bring into being new epistemologies and knowledge regimes? Can the rise of the "new philosophy" be linked to the movement of goods in the early modern period?

Much recent work in the history of science has focused on the circulation of knowledge within Europe and across the Atlantic World, and this has resulted in much new information about circulation, exchange, and the transformation of knowledge, as well as new conceptual and methodological perspectives on the circulation of knowledge, and, especially, on the issues of local and global in the formation of scientific knowledge. Some recent work has also begun to uncover the knowledge networks of East Asia, and with the work of the "new thalassology" on the Mediterranean, historians have also begun to examine the circulation of knowledge in this region. Meanwhile, the movement of knowledge across Eurasia (and especially across Central Asia) during the same period has been much less well-researched, despite recent scholarship on the silk routes. Thus this MPIWG Working Group will consider in the first instance the movement and circulation of knowledge across the Eurasian continent in the "late medieval" and "early modern period"—ca. 750 to 1850 (this large span of time is necessary to include all parts of Eurasia, which define "early modern" differently). Participants will examine the physical and epistemic travels of various forms of natural knowledge in this period.

Discussion will touch on the following issues (among many others):

1. What are the methodological challenges of defining knowledge broadly, that is, if we follow materials, recipes, techniques, instruments, and objects from their place of origin into a new context, how do they function as carriers of "knowledge"? Do they have the same status as "knowledge" throughout their itineraries? How and when are they stabilized as epistemic objects?

2. What are the particular problems of studying knowledge and science in motion? What forms of knowledge did and did not travel? What is the relationship between travelers and instruments (was a human carrier/instructor an essential precondition for circulation)? Consideration of the commercial aspects of knowledge, and of the geographic patterns of the most intense contacts. Can human "micro-ecologies" of exchange and travel be plotted to determine density of contact and movement?

3. Can we connect material and intellectual history, that is, can we trace the passage of matter and materials into the realm of ideas and scientific theories? All matter possesses particular properties that enable the manufacture of certain kinds of materials and objects by means of specialized practices and technologies. Humans assign meanings to these practices and objects, and these meanings are both embedded within and help to extend systems of belief (or, "theories") about the matter, practices, and objects they incorporate. One of the aims of this research group is to illuminate the reciprocal dynamic by which matter gives rise to practices and objects which themselves produce systems of belief and theories that in their turn inform ideas about materials and practices.

4. What obstacles hinder scholars today in following the movement of knowledge in the medieval and early modern periods across Eurasia? What bodies of sources need to be made available to scholars? What manuscript repositories exist which need to be accessed and/or catalogued?

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Illustrations: cover: Comparison of Hamd Allāh Mustawfī al-Qazwīnī's map of the Iranian-Turkestan area (ca. 1330) and a geographical map from the Encyclopedia of Yuan Dynasty Institutions (early 14th century) core: The Map of Integrated Regions and Terrains and of Historical Countries and Capitals (Honil gangni yeokdae gukdo jido).

**MAX-PLANCK-INSTITUT FÜR WISSENSCHAFTSGESCHICHTE**
**Max Planck Institute for the History of Science**

**DEPARTMENT II**

# Itineraries

## of Materials, Recipes, Techniques, and Knowledge in the Early Modern World (Part II)

## 9–11 July 2014

Organization:

PAMELA SMITH

## Wednesday, 9 July

09:30–10:00 **Pamela Smith:**
Welcome and Introduction

*Session I – Chair: Dagmar Schäfer*

10:00–11:00 **Francesca Bray and Georg Freise:** Where do we put the elephants? Tracking the translation of the *savoir-faire* of tea from China to British India

11:00–11:30 Coffee Break

11:30–12:30 **Yulian Wu:**
Confucian Chimes from Eurasian Jade: Knowledge Networks and Empire Construction in Eighteenth-Century China

12:30–13:30 Lunch

*Session II – Chair: Mary Terrall*

13:30–14:30 **Dhruv Raina:**
The Multiple Itineraries of Calculus in South Asia

14:30–15:30 **Elaine Leong:**
Itineraries to Recipes: Epistemic Journeys on Paper

15:30–16:00 Coffee Break

16:00–17:00 **Angela Schottenhammer:**
Mercury and the Mercury Amalgamation Method in 16th and 17th Century East Asia

## Thursday, 10 July

*Session III – Chair: Sven Dupré*

09:30–10:30 **Angela Ki Che Leung and Ming Chen:**
Global circulation of Asafoetida as a drug/spice from the 5th to the 19th centuries, with a focus on its reception in East Asia

10:30–11:30 **Tara Alberts:**
Curative commodities between Europe and Southeast Asia 1500-1700

11:30–12:00 Coffee Break

12:00–13:00 **Ronit Yoeli-Tlalim:**
The Silk-Roads as a model for exploring Eurasian transmissions of medical knowledge: views from the Tibetan medical manuscripts of Dunhuang

13:00–14:00 Lunch

*Session IV – Chair: Harun Küçük*

14:00–15:00 **Maria Mavroudi:**
Exchange between Byzantine and Arabic botany in Greek and Arabic Dioscorides manuscripts

15:00–16:00 **Feza Günergun:**
Alchemy and Paracelsian iatrochemistry in 16th -18th c. Bursa, Turkey: Notes on the writings of alchemist and physician Ottoman dervishes

16:00–16:15 Coffee Break

16:15–17:15 **Carla Nappi:**
Hiyong hiyong seme: Moving Sound Across Early Modern Eurasia

19:00 Conference Dinner

## Friday, 11 July

*Session V – Chair: Sonja Brentjes*

9:30–10:30 **Asaf Goldschmidt:**
Reasoning with Cases – The Transmission of Clinical Medical Knowledge in Twelfth-Century Song China

10:30–11:30 **Che-chia Chang:**
Comparing Chinese and Dutch Osteology: The Road to the Creation of Wooden Models of Skeletons in Edo Japan

11:30–12:00 Coffee Break

*Session VI – Chair: Pamela Smith*

12:00–13:00 Comment: **Luca Mola**

13:00–14:00 Lunch

14:00-16:00 Final Discussion with Coffee