BRILL

Early Science and Medicine 14 (2009) 737-764

Early Science and Medicine
www.brill.nl/esm

Bolatu's Pharmacy

Theriac in Early Modern China

Carla Nappi
*University of British Columbia**

Abstract
In early modern China, natural history and medicine were shifting along with the boundaries of the empire. Naturalists struggled to cope with a pharmacy's worth of new and unfamiliar substances, texts, and terms, as plants, animals, and the drugs made from them travelled into China across land and sea. One crucial aspect of this phenomenon was the early modern exchange between Islamic and Chinese medicine. The history of theriac illustrates the importance of the recipe for the naturalization of foreign objects in early modern Chinese medicine. Theriac was a widely sought-after and hotly debated product in early modern European pharmacology, and arrived into the Chinese medical canon via Arabic and Persian texts. The dialogue between language and material objects was critical to the Silk Road drug trade, and transliteration was ultimately a crucial technology used to translate drugs and texts about them in the early modern world.

Keywords
theriac, China, materia medica, recipes, poison, translation

* The Department of History, University of British Columbia, Rm. 1297, 1873 East Mall, Vancouver, B.C., Canada V6T 1Z1 (cnappi@interchange.ubc.ca). I am grateful for the comments and suggestions offered on previous versions of this material at the University of Minnesota Center for Early Modern History, the 2008 Renaissance Society of America annual meeting, the Clark Library, and the Rutgers Center for Historical Analysis. Special thanks go to Bruce Rusk for his careful reading, to Adrienne Mayor for helpful suggestions, and to Alain Touwaide for his editorial expertise. The illustration is reproduced with kind permission from Professor Paul Unschuld.

 DOI: 10.1163/138374209X12542104914000

Introduction

Li Shizhen 李時珍 (1518-1593) sat in his study sometime in the late sixteenth century and worried about mummies. He had until then enjoyed a rather mummy-free existence. Li was born in Qizhou district (now in Hubei province) into a family with a comfortable reputation in the medical profession. Li's grandfather had made his living as a traveling bell doctor, a class of physicians who were looked down upon by some for openly peddling their medical skills to make money. Li's father Li Yanwen made a secure living as a medical scholar, treating patients and composing a number of treatises on diagnostic methods and local products such as mugwort and ginseng. After several failures in the civil service exams, Li Shizhen also decided to have a go at the family business. He traveled and studied with his father, treated patients, and briefly held a post at court, all the while dreaming of using his extensive knowledge of *materia medica* to revise the Chinese medical canon. Thus, here he was in the midst of what would become a thirty-year research project re-imagining Song (960-1279) dynasty pharmaceutical classics that were widely acknowledged as authoritative voices on the uses of drugs for a late Ming (1368-1644) doctor like Li.[1] The resulting work, an encyclopedic compendium of *materia medica* called *Bencao gangmu* 本草綱目 [Systematic *Materia Medica*], described 1,892 drugs within its fifty-two *juan* (chapters) and almost two million characters.[2]

---

1) Li's major model was Tang Shenwei's 唐愼微 (fl. 1086-1093) *Jingshi zhenglei beiji bencao* 經史證類備急本草 [*Bencao* based on classics and histories, organized and classified for speedy use], often abbreviated to *Zhenglei bencao*. It was the subject of several imperially sponsored and independent revisions through the early modern period. On the *Zhenglei bencao*, see Asaf Goldschmidt, *The Evolution of Chinese Medicine: Song Dynasty, 960-1200* (London, 2009), 116-21, and Paul U. Unschuld, *Medicine in China: A History of Pharmaceutics* (Berkeley, 1986), 70-82.

2) The term "*bencao* 本草" has variously been translated into English as "pharmacopoeia," "*materia medica*," "pandect of natural history," "pharmaceutical literature," and "encyclopedia," all of which approximate the nature of this textual genre, which accommodated a great deal of variation within the tradition itself. This class of medical text focused on the drugs used in Chinese (and other) medical prescriptions. For

Though Li had incorporated a great deal of local lore from his hometown and travels into his *Bencao gangmu*, not every drug was as easy to come by as Qizhou mugwort. Li thus puzzled over reports of the medicinal properties of "honey mummies" from Arabia:

> According to Tao Jiucheng (Tao Zongyi 陶宗儀, fl. 1360-1368) in his *Chuogenglu* 輟耕錄 輟耕錄 [Notes made on a rest from plowing]: In Arabia there are men 70 or 80 years old who decide to donate their bodies for the greater good. They completely stop eating and drinking, only washing their bodies and consuming honey. After enduring this for a month, their urine is entirely made of honey. Upon their death, their fellows place them in a stone coffin, covering them entirely with honey, write the year and date upon the coffin, and bury it. After a century they dig it up, and at that point [the body] has become honey-medicine. It is used to treat people suffering from broken limbs, and only a small amount is needed for recovery. It is extremely rare, and is called "mummy" (*munaiyi* 木乃伊).[3]

This "honey-man" was in fact so rare that it was impossible for Li to locate a specimen in a nearby market. Despite not having personal access to the product, however, he felt obligated to include the mummies in his compendium. Indeed, Li recorded many such tales in the *Bencao gangmu*, a text that has been hailed as a paragon of traditional Chinese medicine but in fact also contained a remarkable number of words, stories, and information on drugs from outside Ming territory. From at least the Tang period (618-907), authors

---

a discussion of Li Shizhen and his work, see Carla Nappi, *The Monkey and the Inkpot: Natural History and its Transformations in Early Modern China* (Cambridge, 2009).

[3] See *Bencao gangmu*, *juan* 52, *ren bu* 人部 [People], *munaiyi* 木乃伊 [Mummy], 1940. Though the account in Tao Zongyi's text identified the place of origin of *munaiyi* as *huihui tiandi* 回回田地, it was changed in Li Shizhen's text to *Tianfang guo* 天方國. Citations from the *Bencao gangmu* include the following elements: 1. BC (*Bencao gangmu*); 2. *juan* (1-52); 3. Entry name (I have used pinyin Romanization and provided a translation where appropriate); 4. Subheading in pinyin with English translation, with recurring subheading categories indicated according to the following code: ff (*fufang* [Appended Prescriptions]), fl (*fulu* [Appended Notes]), fm (*faming* [Explication]), jj (*jijie* [Collected Interpretations]), sm (*shiming* [Explanation of Names]), qw (*qiwei* [*Qi* and Flavor]), xz (*xiuzhi* [Preparation of the Drug]), zw (*zhengwu* [Correction of Errors]), zz (*zhuzhi* [Main Indications]). For page numbers of citations I relied on Li Shizhen, *Bencao gangmu*, edited by Liu Hengru and Liu Shanyong (Beijing, 2002), 2 vols.

of collectanea, jottings, poetic and lexicographical commentaries, and compendia of strange tales had regularly incorporated information about natural substances and *materia medica* from distant lands or seas. As Sanskrit, Arabic, and Persian texts were translated into Chinese, medical authors like Li mediated the resulting transmission of foreign plant, animal, and drug names into the Chinese canon. Chinese medicine shifted along with the boundaries of the early modern empire, and bushels of drugs from non-Chinese sources were tasted, recorded, and made sense of.[4]

This paper will explore the context of such medical exotica in early modern China by closely examining the case study of theriac, a valuable commodity in the early modern global drug trade. The circumstances under which theriac entered China are understood within the broader scope of early modern foreign relations, especially between Chinese and Islamic empires.[5] The role of recipes in mediating Chinese-Islamic exchange helps explain how theriac made it into Chinese texts, and a close reading of the medical recipe as a literary form helps explain what happened once it got there. It will become clear that theriac, in its varied linguistic and material forms, was not a single entity, and this article attempts to chart a brief history of its various incarnations in the history of pharmacy. Exploring the recipe form as a medium of global trade helps makes

---

4) For the purposes of this paper, I use the term "early modern" as shorthand to refer to imperial China from the fourteenth through seventeenth centuries. I intend this as a comparative gesture to situate this period in Chinese history within a broader global discourse, and not as a qualitative judgment on the incipient modernity or industrialization of the society I describe. For two usefully contrasting arguments regarding the use of the term "early modern" to describe to Ming and Qing history see Evelyn S. Rawski, "The Qing Formation and the Early Modern Period," in Lynn A. Struve, ed., *The Qing Formation in World-Historical Time* (Cambridge, MA, 2004), 207-241, and Jack A. Goldstone, "Neither Late Imperial nor Early Modern: Efflorescences and the Qing Formation in World History," on 242-302 of the same volume.

5) I use "Islamic" in this paper to translate the Chinese term *huihui* 回回 in the titles of Yuan and Ming texts. In the *Huihui guan zazi*, the term *huihui* is given as a translation of the Persian "Musulman" or Muslim. Strictly speaking, the Islamic Formulary cannot be completely characterized as "Islamic" according to modern definitions of the term since some of the contents arguably include drugs translated from Syriac texts by Nestorian Christians.

sense of such discontinuity, and has broader ramifications for the study of early modern global trade beyond the pages of Chinese herbal medicine.

Exotica

Li Shizhen was building on and wrestling with a long tradition of compiling and reconciling the pharmaceutical qualities of medical exotica in China. Su Jing 蘇敬 (fl. 656-660; name later changed to Su Gong 蘇恭) had been instrumental in bringing non-native plants, animals, and stones into mainstream Chinese *materia medica*. The *Xinxiu bencao* 新修本草 [Newly Revised Bencao; also known as the *Tang bencao* 唐本草], by Su and his collaborators, was the first government-sponsored pharmacopoeia in China.[6] The compendium was compiled between the years 657-659, and has survived in its entirety. Among its 850 drug descriptions, Su's text recorded thirty drugs that had been incorporated into Chinese pharmacy from foreign sources, including pepper, benzoin, and oak galls which had been brought into China via the silk routes.

Su's text was one of many medical compendia compiled in a period when the trade in natural and medical products among China and her neighbors flourished. Nearly all of these compendia have been lost: some are now known only as titles, some survive in ghostly form as quotations in later *bencao*. The *Hu bencao* 胡本草, now lost, contained seven chapters of drug descriptions from the "Hu" lands compiled and collected in the eighth century.[7] The *Haiyao bencao* 海藥本草

---

6) Su Jing, *Xinxiu bencao* 新修本草 [Newly revised *bencao*] (Shanghai, 1995), 619-709. An extended discussion of the work can be found in Unschuld, *Medicine in China: Pharmaceutics*, 44-50.

7) The term *hu* was often used to refer broadly to foreign peoples, or to the people of Central Asia that came into contact with, or resided in the western or northwestern borders of China. For a lengthy description of the history of the appellation *hu* in Chinese drug and place names, see Berthold Laufer, *Sino-Iranica: Chinese Contributions to the History of Civilization in Ancient Iran* (Chicago, 1919), 194-202. On *hu* and *fan* in the context of medieval Buddhist texts in China, see Daniel Boucher, "On *Hu* and *Fan* Again: the Transmission of "Barbarian" Manuscripts to China," *Journal of the International Association of Buddhist Studies* 23.1 (2000), 7-28. Boucher's article is a

[*Bencao* of Overseas Drugs], compiled by Li Xun 李珣 (fl. 923), survives only in reconstructions from later texts in which it was cited.[8] Li Xun's compendium was apparently devoted entirely to drugs imported from India and Persia, a focus that extant drug descriptions from the text illustrate.[9] The text itself is notable not simply for its treatments of the medical uses of exotica. If the extant portions reflect the text as a whole, the *Haiyao bencao* was ostensibly meant as a supplement to then-canonical *bencao* works, gleaned primarily from accounts in travel journals, gazetteers, and other records of exotic curiosities.[10] Gold and silver dust, coral, fossilized crabs, aromatic plants and woods, elephant tusks and rhinoceros horns, and olives were just a few of the 131 drugs described in the text.

This focus on exotic materials was spurred under Tang rule by a dramatic increase in Chinese exchange with Persia and the Islamic Arabs. Land and sea travel carried out in both directions provided ample opportunities for trade, despite ongoing struggles among China and the Islamic world for control of Central Asia. In particular, Tang China saw a new market for drugs, medicines and spices.[11] A flourishing economy and advances in navigation technology broadened the scope of traded exotics from pre-Tang staples such as storax, oak-galls, malachite, damask steel, and textiles, to include aromatic materials like aloes wood, rosewater, and ambergris; pigments such as indigo; and vitally important spices such as cardamom,

---

response to Yang Jidong, "Replacing *hu* with *fan*: A Change in the Chinese Perception of Buddhism During the Medieval Period," *Journal of the International Association of Buddhist Studies* 21.1 (1998), 157-70.

8) Li Xun, *Haiyao bencao* 海藥本草 [Compendium of Overseas Drugs] (ZJ Shang, comp.) (Beijing, 1999). In *Zhongguo bencao quanshu*, vol. 7, 1-40. See also Chen Ming, "The Transmission of Foreign Medicine via the Silk Roads in Medieval China: A Case Study of *Haiyao Bencao*," *Asian Medicine* 3 (2007), 241–64.

9) Li Xun's focus was probably related to his Persian ancestry and to his family business selling aromatic drugs. See Song Xian 宋峴, *Huihui yaofang kaoshi* 回回藥方考釋 (Beijing, 1999), vol. 1, 3.

10) Many of the texts cited in the extant portions of the *Haiyao bencao* were regional accounts like the *Linhai zhi* 臨海志, *Guangzhou ji* 廣州記, *Guang zhi* 廣志, *Yiyu ji* 異域記, and *Jiaozhou ji* 交州記, among others.

11) Wang Gungwu, *The Nanhai Trade: The Early History of Chinese Trade in the South China Sea* (Singapore, 1998).

cloves, mace, and nutmeg. Many of these became regular ingredients in pharmaceutical recipes. Southeast Asia had been an early trade partner, supplying China with indigenous luxury items and re-exports.[12] Many of these items had been used as "exotic" *materia medica*, and were supplemented thanks to a late-fifth and early-sixth century increase in Chinese-Southeast Asian exchange. Buddhist monks who traveled to China also facilitated a burgeoning trade in holy things: incense and aromatic woods, ivory, sandalwood stupas and statues, and glass vessels used in rituals. Many of these items were used in the medical trade, and many of the re-exported items had originated in Persia. These trade routes were vital conduits of exchange not simply for *materia medica* but also for a major body of medical knowledge and texts that brought a very different context to the understanding of many of the drugs being transported. Once their names were translated or transliterated into Chinese, exotic drugs could take on a significance or meaning dramatically different from that in their original context.

This was especially apparent in the Mongol Yuan (1271-1368) dynasty, when Islamic presence left a significant mark on the sciences in China. The Yuan government created specialized organizations devoted to astronomy and medicine in particular, as these fields were targeted for supplementation by Islamic texts and practices. In 1271, the Institute of Muslim Astronomy was set up in Beijing. It included several officials and 18 astronomers, and took over the empire's main calendrical duties in 1284. The Taiyi yuan 太醫院 (Imperial Academy of Medicine, founded in 1260) supervised medical education and a number of other offices devoted to the collection and production of pharmaceuticals and perfumes.[13] The Guanghui si 廣惠司 (Office of Broad Grace, founded in 1263

---

12) These items included gold and silver articles, cowrie shell ornaments, peacock-feathers, tortoise-shells, and re-exports such as rubies and emeralds, corals, opaque glass, cotton cloth, turmeric, and storax.

13) See Reiko Shinno, "Promoting Medicine in the Yuan Dynasty (1206–1368): An Aspect of Mongol Rule in China" (PhD diss., Stanford University, 2002), 62. See also Reiko Shinno, "Medical Schools and the Temples of the Three Progenitors in Yuan China: A Case of Cross-Cultural Interactions," *Harvard Journal of Asian Studies* 67.1 (2007). 89–134.

as the Xiyu yiyao si 西域醫藥司, or Office of Western Medicines) was one of several offices devoted to Islamic medicine and drugs in particular.[14] The court commissioned books on the dietetics and medicine of the Islamic world, including the *Huihui yaofang* 回回藥方 [The Islamic Formulary], and *Yinshan zhengyao* 飲膳正要 [Principles of Food and Drink], the latter text primarily on Mongol dietetics but including substantial discussion of Islamic medicine and dietetics.[15]

Even after the empire was no longer helmed by Mongol rulers with an interest in championing Islamic scientific and medical knowledge, learning from Islamic scientific and medical knowledge was still a priority of early Ming rule.[16] One of the projects undertaken by official translators in the late Yuan or early Ming was a startling medical compendium called the *Huihui yaofang* 回回藥方 [The Islamic Formulary], a work in thirty-six chapters that contained medical recipes and drug indications, with many drug names rendered in both Persian (*Huihui* 回回) and Chinese scripts.[17] Most of the

---

14) See Song Xian, *Gudai Bosi yixue yu Zhongguo* 古代波斯醫學與中國 (Beijing, 2001), 89-92, and Shinno, "Promoting Medicine," 62-64. The *Guanghui si* was headed by the Syrian Christian scholar Aixie, or Isa. See Paul D. Buell, "How Did Persian and Other Western Medical Knowledge Move East, and Chinese West? A Look at the Role of Rashid al-Din and Others," *Asian Medicine* 3 (2007), 279-295, 289.

15) The *Huihui yaofang* will be treated in more detail below. Modern scholars disagree over whether it was a Yuan or early Ming text. On the *Yinshan zhengyao* see Paul D. Buell and Eugene N. Anderson, *A Soup for the Qan: Chinese Dietary Medicine of the Mongol Era as Seen in Hu Szu-Hui's Yin-shan cheng-yao* (New York, 2000). On the resonances between Mongol and Islamic pharmacy, see Leigh Chipman, "Islamic Pharmacy in the Mamluk and Mongol Realms: Theory and Practice," *Asian Medicine* 3 (2007), 265-78.

16) One fascinating area of the history of science and medicine that resulted from post-Yuan exchange between Islamic and Chinese medical traditions is the development of Uighur medicine. For a brief introduction to Uighur medicine, see Song, *Gudai Bosi yixue yu Zhongguo*, 156-168, and Da Liya and Su Beihai, "*Sichou daoshang Weiwu'erzu de yiyao xue*," *Kashi Shifan xueyuan xuebao* 19.2.71 (1998): 32-41. James A. Millward, *Eurasian Crossroads: A History of Xinjiang* (New York, 2007) is an excellent introduction to the context of Xinjiang in silk road history. For an example of a primary text on Uighur medical drugs in *Huihui* script, see Jiamaliding Akesalayi, *Baise gongdian* 白色宮殿, in *Zhongguo bencao quanshu* (Beijing, 1999), vol. 398, 385-429.

17) The authorship of he *Huihui yaofang* is unclear, but a number of historians have proposed that it was commissioned by the court and composed in one of the imperial

text was lost, but the three extant chapters and one extant table of contents contain not only Persian and Chinese scripts, but also Chinese transliterations of Greek, Aramaic, classical Persian, Arabic, and Turkish names of drugs, places, and other medical terms.[18] The text was written in at least three hands, at least one of which belonged to an expert in Persian language and medicine who added the names of several drugs in Persian script with his own hand, and one Chinese speaker from Beijing who added to the text with notes that reflected his local Beijing dialect.[19] These men worked together for some time (perhaps co-located, perhaps not) on a project meant to translate selections from the Islamic medical canon into Chinese. The authors not only translated Arabic and Persian medical recipes for mummy: they also included several variations of a medicine commonly known as "theriac."

---

offices responsible for Chinese-*Huihui* translation. While *Huihui* writing in the Tang and Song referred primarily to Arabic, by the Yuan and Ming *Huihui* more commonly referred to Persian instead. (Persian is written in a slightly modified form of the Arabic alphabet.) This was largely a result of Persian being more widely used as a language of trade and administration in the fifteenth and sixteenth centuries. For a brief account of this change see Hu, "Zhengui de huizu wenxian," 87. Over the course of the early modern period, and the Ming in particular, the phrase was used in different ways, often used as a descriptor of Muslim things, people, texts, etc., to describe Arabic or Persian scripts, or to discuss "western" peoples of Central and South Asia. On usage of the term "*huihui*" in the Ming, see Hu Yunsheng, "Lun mingdai huihui de chaoshi maoyin," *Huizu yanjiu* 26.2 (1997), 37-38.

18) See Song, *Huihui yaofang kaoshi*, 6, and Buell, "How Did Persian," 284.

19) See Song, *Huihui yaofang kaoshi*, 31. At least three different scriptural hands can be identified in the *Huihui yaofang* text. On the probability that the *Huihui yaofang* dates from the early Ming see Song, *Huihui yaofang kaoshi*, 31-33 and Buell, "How did Persian," 283-291. Song cites the fact that Beijing is called "Beiping 北平" in these notes as one major source of evidence for dating the text to the early Ming. It is also possible, however, that the notes were made in a Ming edition of what was originally a Yuan text commissioned by the *Guanghui si*. On the latter (more widely accepted) theory that the text was a Yuan product see, for example, Buell, "How Did Persian," 283, fn 24.

Snake Oil

> Theriac (*diyejia* 底野迦): Flavor: pungent, bitter, level, without poison. Treats the hundred illnesses, sudden diseases that would otherwise be fatal (*zhong'e* 中惡), the negative *qi* 氣 of *kewu* 客牾 sickness [in children], and abdominal obstructions. It comes from the Western tribes (*xirong* 西戎). New addendum: It is said that [*diyejia*] is made of gall. Its appearance is like long spoilt pills, red-black in color. Foreigners (*huren* 胡人) occasionally bring it here, and it is extremely valuable. Experiments have shown it to be effective.[20]

Su Jing had been the first author to include something called theriac (*diyejia*) in a Chinese medical text. The product apparently entered Tang dynasty China by means of tribute from a Byzantine embassy, coming into Chinese medicine (and Su's text) via Islamic texts and merchants.[21] The discussion of theriacs had entered the canon of Islamic medicine in the seventh century just prior to its use as a tribute item, where it was likely still an exotic object. Paul of Aegina, known as the last Byzantine physician to practice at Alexandria, frequently mentioned "theriaka," Mithridatium, and Galênê in his discussion of antidotes, and was probably the Greek source for the knowledge of theriac in Islamic medicine.[22]

So what, exactly, was this stuff? The term "theriac" is more familiar to English speakers in its derivative form of "treacle," a word initially denoting an antidote to poison, but eventually metamorphosing into a term for sweet or saccharine substances. In its earliest instantiations, however, it emerged in classical Greek texts devoted to poisons and ways to counteract them. Many of the earliest references to theriac were in the works of Galen, whose role as

---

20) Su, *Xinxiu bencao*, 663.

21) For a brief account of the introduction of theriac into China via a Byzantine embassy, see Edward Schafer, *The Golden Peaches of Samarkand: A Study of T'ang Exotics* (Berkeley, 1985), 184.

22) Paul of Aegina stands as an early link between Greek and Islamic medicine, as his work was used by al Razi (865-930), an extremely influential physician of the early Islamic world. See G. Watson, *Theriac and Mithridatium: A Study in Therapeutics* (London, 1966), 96. Though this work is somewhat problematic, it remains the only extended study of its kind to date and much of my chronology of Greek theriac is indebted to Watson's work.

imperial physician to Marcus Aurelius lent him the heavy responsibility of protecting the emperor against poisoning. At least three books attributed to Galen (129–after 216?) were devoted exclusively to the matter of toxic substances and how to combat them.[23] All of these works were centrally concerned with the nature of theriacs, substances extolled for their curative properties and famously linked to physicians and kings from at least the second century B.C.E.

The history of theriac in the early Greek world is as much a matter of the drug itself as of the terms used to discuss it. *Thêriakê*, from the century preceding Galen's time onward, was a medical product specifically given to counteract the ill-effects associated with bites of poisonous animals such as snakes, spiders and scorpions, all manner of stinging insects, and rabid dogs.[24] Mithridates concocted the eponymous "Mithridatium" out of forty to fifty-four ingredients primarily derived from plants.[25] Nero's physician Andromachus created

---

23) Works on poison that have been attributed to Galen include *De antidotes*, *De theriaca ad Pisonem*, and *De theriaca ad Pamphilianum* (the latter inauthentic) The Greek texts of the two latter works can be found in Karl Gottlob Kuhn, *Claudii Galeni Opera Omnia, vol. 14* (Leipzig, 1827), 10-294 (*De theriaca ad Pisonem*) and 295-310 (*De theriaca ad Pamphilianum*). On Galen's treatment of theriac, see Vivian Nutton, "Galen on Theriac: Problems of Authenticity," in Armelle Debru, ed., *Galen on Pharmacology* (Leiden, 1997), 133-151, and Michael Stein, "La thériaque chez Galien: sa préparation et son usage thérapeutique," ibidem., 199-209. On toxicology in Galen, see Alain Touwaide, "Galien et la toxicologie," in Wolfgang Haase, ed., *Aufstieg und Niedergang der römischen Welt, vol. 37.2* (Berlin, 1994), 1887-1986. My sincere thanks to Alain Touwaide for guiding me to this literature.

24) From Galen onward the noun *thêriakê* indicated a general antidote to animal venom, and the proper name *Thêriakê,* or the Latinized *theriaca* came to refer to specific types of the drug. See Watson, *Theriac and Mithridatium* for a detailed description. "*Thêriakê,"* a Greek adjective denoting antidote-like properties, has its roots in the noun *therion* and denotes a wild or savage beast (like a stag, dog, or pig) as opposed to men, birds, or fish. For an introduction to the kinds of snakes and spiders mentioned in an early theriac-describing text (Nicander, 2nd cent. B.C.E.), see Peter K. Knoefel and Madeline C. Covi, *A Hellenistic Treatise on Poisonous Animals (The "Theriaca" of Nicander of Colophon): A Contribution to the History of Toxicology* (Lewiston, NY, 1991).

25) Mithridates VI Eupator (b. 132 B.C. E.) was King of Pontus in Asia Minor from c. 120 to 63 B.C.E. The exact number of ingredients in original Mithridatium is unknown, and opinions differ in modern literature. On Mithridates and his poisonous

a drug named "Galênê" by taking Mithridatium and adding snake flesh, and thereafter theriacs made to counteract snakebites often contained bits of viper in them. Pliny the Elder (23/4–79) included an account of such a version in his *Natural History*:

> From the viper are made the lozenges called by the Greeks *theriaci*. Lengths of three fingers are cut off from head and tail, the intestines drawn with the livid part that adheres to the spine. The rest of the body, with the vertebrae extracted and fine flour added, is thoroughly boiled in a pan of water with dill, and the mixture dried in the shade and made into lozenges which are used in making many medicaments. We must note, it appears that only from the viper can the preparation be made. Some take the fat from the body, cleaned as described above…and use as ointment to keep off all harmful creatures.[26]

Theriac had become a popular theme in classical Greek literature by the time Pliny was writing. Several writers had penned treatises on venomous creatures, epitomized by Nicander of Colophon's *Theriaka*, a poem of almost one thousand lines of Greek hexameter that discussed animal venoms and how to cure them.[27] Derivatives of the term "thêriakê" were applied both to several individual antidotes and to the general class of antitoxins developed in classical Greek and Roman medicine. What exactly composed the "true" theriac remained open to question as countless medical marketers took advantage of the profitable combination of confusion, desire, and popular reverence for authenticity that theriac production stimulated. Though Pliny remained doubtful of the need for such an elaborate medicament, an industry was born.

> There is an elaborate mixture called *theriace*, which is compounded of countless ingredients, although Nature has given us many remedies, anyone of which would be enough by itself. The Mithridatic antidote is composed of fifty-four ingredients, no two of them having the same weight, while of some is prescribed one

---

history, see Adrienne Mayor, *The Poison King: The Life and Legend of Mithridates, Rome's Deadliest Enemy* (Princeton, 2009). Chapter 11 focuses on the Mithridatium.

26) Pliny the Elder, *Natural History* (H. Rackham, tr.) (Cambridge, MA, 1938-1963), vol. 21, 70.

27) For an interesting study of this text that places it in the context of classical Greek and Latin medicine and poetry, see Knoefel and Covi, *A Hellenistic Treatise*.

> sixtieth part of one denarius [a small, silver Roman coin]. Which of the gods, in the name of Truth, fixed these absurd proportions? No human brain could have been sharp enough. It is plainly a showy parade of the art, and a colossal boast of science. And not even the physicians know their facts…[28]

This "showy parade" of art and science marched on through medieval Europe. By the eighth century, Islamic medicine prescribed compound medicines called *tiryaq* to treat complicated illnesses that resisted treatment by simple drugs.[29] Caliphs and princes requested the manufacture of *tiryaq* mixtures believed to have wondrous curative and anti-toxic properties, and whose ingredients could run well into the hundreds. Avicenna described the preparation and use of *tiryaq* at length in his *Canon of Medicine*. The pharmacopoeia of al-Biruni (973?-1048) included a number of medicines known as *tiryaq*, the most general of which was described in the following passage:

> *Tiryaq:* It is a countermeasure for poisons. I do not know about the simple employed in the preparation of this drug. A famous theriac is *tiryaq-i-faruq*, which is also designated as *mithruditus*, and is a famous theriac. Another is *qurs-i-afa'i*. It is an admixture of drugs. *Faruq* means a thing that relieves, or something that acts as a vanguard against poison….It is said that a pure theriac is identified by means of garlic. If a person eats *tiryaq-i-faruq* having already eaten garlic, the smell of the garlic disappears…Another test for it, it is said, is that it acts as an anti-emetic and anti-diarrheic…It is claimed to counteract the defecation due to cholera. Yet others have advanced the suggestion that if it is put on the congealed blood of a pig, the fine quality *tiryaq-i-faruq* will attenuate it…[30]

This description was followed in al-Biruni's work by detailed explanations of several types of *tiryaq* known to Islamic medicine from ancient records through al-Biruni's own time, and helped launch a

---

28) Pliny the Elder, *Natural History*, vol. 8, 24.

29) On the use of theriac in Arabic agricultural calendars, see J. Barbaud, "Hygiène, diététique et médecine dans les calendriers agricoles Arabes," *Revue d'Histoire de la Pharmacie* 46.317 (1998), 41-48, 46. On specific treatises on theriac, see J. Ricordel, "Ibn Djuldjul: <Propos sur la Thériaque>," *Revue d'Histoire de la Pharmacie* 48.325 (2000), 73-80, and J. Ricordel, "Le Traité sur la Thériaque d'Ibn Rushd (Averroes)," *ibid.,* 81-90.

30) Translation from H.M. Said, *Al-Biruni's Book on Pharmacy and Materia Medica* (Pakistan, 1973).

long history of Arabic and Persian works on *tiryaq* that continued through the early modern period.[31]

The rising popularity of theriacs in the medieval world (often using opium as a primary component) accompanied a flourishing of translations of Arabic and Persian pharmacopoeia into European languages.[32] By the middle of the fourteenth century, an outbreak of Plague prompted the Medical Faculty of Paris to recommend that "a little theriac should be taken with meals," and France became a center of theriac production and export.[33] From the thirteenth through the eighteenth centuries, Beaucaire boasted a festival where locally produced wares from various French localities (including the famous "Thériaque de Montpellier") were brought together and sold in open-air markets, attracting a wide diversity of buyers from across the globe.[34] Several local "theriacs" were developed and marketed by the seventeenth and eighteenth centuries; Paris, Montpellier, Madrid, Holland, Cairo, Germany, Rome, Constantinople, Genoa, Bologna, and Venice all produced the substance, often prepared ritualistically in the presence of prominent guildsmen, magistrates, and professors.[35] In addition to acting as an antidote for venom and the bites of poisonous creatures, by this time theriacs were also

---

31) Some of these texts are held in the National Library of Medicine collection of Islamic medical manuscripts. Examples include *Dhikr al-tiryaq al-faruq* [Memoir on Antidotes for Poisons] by thirteenth century scholar 'Ali ibn 'Abd al-'Azim al-Anzari and *Sifat al-tiryaq al-akbar* [Recipe for the Great Theriac], an anonymous text copied in the fifteenth century. The collection also includes shorter works on theriac in manuscripts made through the nineteenth century. For a translated example of a medieval Islamic medical dispensatory that included theriacs among its recipes, see Oliver Kahl, *Sabur ibn Sahl: The Small Dispensatory* (Leiden, 2003), 33.

32) See Christiane Nockels Fabbri, "Treating Medieval Plague: The Wonderful Virtues of Theriac," *Early Science and Medicine* 12 (2007), 247-83, at 261-62.

33) On the use of theriac in medieval plague medicine, see Fabbri, "Treating Medieval Plague," which describes many medieval prescriptions for theriacs, and focuses on those that may have contained opium.

34) See F. Granel, "La Thériaque de Montpellier," *Revue d'Histoire de la Pharmacie* 23 (1976), 75-83, 81.

35) See N.A. Pereira *et al.*, "Triaga Brasilica: Renewed Interest in a Seventeenth-Century Panacea," *Toxicon* 34 (1996), 511-516, and Granel, "La Thériaque de Montpellier," 75-83.

prescribed to treat myriad illnesses that ranged from plague and persistent cough, to contagious illnesses of all sorts, to epilepsy and several types of nervous disorders.

With the rise of theriac as an article of commerce that circulated throughout the Mediterranean and in Cairo, regulating its production became an issue of importance within medical and academic circles. The composition of "Teriaca" itself gave rise to a series of heated debates in sixteenth century Italy, where it was widely used and prescribed. How should one translate an early Greek recipe into Italian, using contemporary Italian components, and what of the problem of regulating standards of measurement for the drug's ingredients? What if the viper species of early Greece and early modern Italy were not the same?[36] Local production of theriac stimulated controversy over the introduction of indigenous herbal elements, and occasionally gave rise to new types of theriac resulting from the inaccessibility of classically prescribed ingredients. Cheaper and simpler variations were developed, such as the "poor mans theriac" of medieval France, which contained only four plants.[37] Jesuits in the sixteenth century were also widely conversant with theriac production and stimulated the creation of new, local variants. Priests who arrived in Brazil in 1549 quickly set up apothecary shops at several colleges, working with native Brazilian herbalists to produce "Triaga Brasilica," a theriac variant developed at the Jesuit College of Bahia that replaced several traditional ingredients (which were

36) In Bologna, Ulisse Aldrovandi used the controversy over the preparation and regulation of Teriaca to criticize the government for its lack of control over local hygiene and medicine. On theriac production and debates in sixteenth century Italy, see Paula Findlen, *Possessing Nature: Museums, Collecting, and Scientific Culture in Early Modern Italy* (Berkeley, 1994), 241-245 and 266-287. Findlen emphasizes the role of vipers in early modern Italian theriacs.

37) J. Flahaut, "La Thériaque Diatessaron ou Thériaque des Pauvres," *Revue d'Histoire de la Pharmacie* 46.318 (1998), 173-82. The composition of "la thériaque diatessaron" apparently remained constant for several centuries. Interestingly, some of the components were difficult to obtain in France, so this drug did not enter into pharmacopoeias for the lower-classes in the seventeenth and eighteenth centuries, instead being replaced by alternative theriacs that used only French plants.

now expensive and difficult to obtain from Brazil) with locally grown herbs.[38]

Clearly, theriac had become an extremely important commodity throughout Europe by at least the sixteenth century. Commercially and pharmacologically, this was a type of remedy (or, more properly, a name used for a variety of remedies) widely produced and sought after, whatever its actual efficacy in counteracting poisons might have been. At roughly the same time that theriac was enjoying pan-European popularity it was also making its way across East Asia, and accounts of theriac were recorded in Japanese, Chinese, and Tibetan texts.[39] Though descriptions of *diyejia* in medieval and early modern Chinese texts were sparse, the initial account of *diyejia* from the *Xinxiu bencao* recurred with commentary through the Yuan, Ming, and Qing (1644-1912) dynasties.

Bile and Error

Decidedly not a beauty (recall that its shape resembled "long-spoilt pills"), *diyejia* was consistently interpreted as the product of a beast. The product was grouped with other animal by-products in the pharmacological system of *Xinxiu bencao*, and continued to be classified this way in each work that discussed the substance thereafter. This seems to have stemmed from the initial description of the medicine in terms of viscera: according to reports provided to the author of the Xinxiu bencao, theriac was largely composed of gall bladder (*dan* 膽).

---

38) See Pereira et. al., "Triaga Brasilica," 511-516. This recipe was apparently fine-tuned over the course of two centuries, its precise composition remaining a closely guarded secret until its publication by a Portuguese priest in a 1766 manuscript. Nine of the plants recommended in the preparation of Triaga Brasilica are still reportedly used to make antidotes to snake venom in Brazil today.

39) On Tibetan theriac, see Christopher Beckwith, "Tibetan Treacle: A Note on Theriac in Tibet," *The Tibet Society Bulletin* 15 (1980), 49-51. The Waseda University Library in Japan holds a manuscript copy of the *Teriaka shinpo yakuko* 底野迦真方訳稿, a late eighteenth or early nineteenth-century text that chronicled the translation of theriac into Japanese via Dutch texts and included Chinese accounts from the *Xinxiu bencao*.

Li Shizhen took a break from considering the properties of Arabian honey-men to record *diyejia* in his own text, essentially copying the *Xinxiu bencao* account while adding corroborating evidence from a Song *bencao* author: "Su Song 蘇頌 (1020-1101) said: In the Song period the Southern Seas also were known to have this drug."[40] Li grouped *diyejia* with beasts like previous authors had done, but his account differed from the previous oft-cited description in one important respect that brings into relief how deeply the history of medical knowledge is rooted in the language used to transmit it. The initial description of *diyejia* had it looking simply like "varied" gall bladder (*zhudan* 諸膽). Thanks to a misreading or mis-rendering of the first character in Su Jing's description, Li Shizhen instead recorded the phrase as "pig" gall bladder (*zhudan* 豬膽) and this porcine quality held up in subsequent descriptions.[41] Theriac in its *diyejia* form was ever the product of a creature, but it became pig viscera thanks to scribal error.

Regardless of how the character *zhu* was written, *diyejia* was classified in canonical Chinese medical compendia as simple animal gall rather than a complicated mix of Western exotic ingredients. Deliberate or not, this classification brought a powerful foreign drug, one that was understood as a composite panacea elsewhere in the world, under the control and into the terms of the Chinese medico-natural world. Theriac was typically recorded as a compound medicine in other texts, but was transformed into a medical simple in standard compendia of *materia medica* in China. Reducing the description of theriac to an animal by-product conveyed the message that "Western" (*xirong* 西戎) medicine was no more powerful than indigenous Chinese remedies. This sense was further strengthened by the image that accompanied several *bencao* entries for *diyejia*: a foreign man bowing, kneeling, and presenting his medicinal product to a Chinese man from a position of subservience.

---

40) See *Bencao gangmu*, *juan* 50, *shou bu* [Beasts], *diyejia* [Theriac], 1838.

41) On the switch from "varied" to "pig," see T. Nakamura and J. Endo, "Introduction of Theriac into China," *Nihon Ishigaku Zasshi* [Journal of Japanese History of Medicine] 46 (2000), 358-59.

Figure 1. *Diyejia* in a manuscript of the Bencao pinhui jingyao. Image courtesy of Prof. Paul Unschuld and Prof. Zheng Jinsheng.

Indeed, the major component in this medicine that foreigners living in China were reportedly clamoring to buy was described by Chinese authors as nothing more complicated than pig gall, a common material from a common animal. The story, however, is not that simple; though theriac was brought into the classificatory system of Chinese natural history and medicine, it retained its foreign identity (all subsequent *bencao* explicitly described *diyejia* in terms of *hu* medicine) and was never fully naturalized into the medical canon. As soon as it was recast as primarily animal gall, *diyejia* was effectively transformed: instead of an unknowable medical compound, it effectively became a Chinese pharmaceutical ingredient.

The preceding account narrates a case in which exotic elements were naturalized into canonical Chinese collections of *materia medica*, pharmaceutical collections that were often sponsored or recognized

by the imperial court and that were self-consciously engaged in a tradition of intertextual *bencao* literature.[42] However, these texts were not the only conduits through which exotica influenced Chinese medicine. As a result of the early modern drug trade, theriac had actually been transliterated into Chinese in a number of ways and in different types of non-canonical text.[43]

Though the *Huihui yaofang* (the aforementioned *Islamic Formulary*) may not have been known to later bencao authors like Li Shizhen, it is critical to the study of Arabic and Persian drugs in China, and to theriac in particular. Theriac was mentioned in the extant portions of the *Huihui yaofang* several times in at least two forms: *ta'er yaji* 他而牙吉 and *da'er yaji* 荅兒牙吉. The former probably also represented a phonetic transliteration of the Arabic form *tiryaq*; the latter represented the form *daryaq* or *diryaq*. Rather than describing theriac as a single medicine, as previous Chinese medical works had done by transliterating it simply as *diyejia* and including it alongside and in the same rhetorical terms as other medical simples, the *Huihui yaofang* preserved the notion that theriac was a *category* of drugs in the Arabic and Persian texts from which the Chinese is derived. Additionally, there were many subspecies of *tiryaq* described in the *Huihui yaofang*. Here we have transliteration doing some heavy epistemic lifting. The text actually makes theriac *as a concept* much more coherent within the Chinese medical canon by treating it as a category of antitoxin. Rather than describing and classifying it as "pig gall," the *Huihui yaofang* classified theriac as an Islamic cure for poison, a category well known to Chinese doctors and which permeated the Chinese medical canon. What's more: the original text actually included recipes for making *ta'er yaji* and *da'er yaji*.[44] Interestingly, these were not taken up in later Chinese

---

42) The *Bencao gangmu*, *Xinxiu bencao*, and *Haiyao bencao*, were all members of this class of pharmaceutical text.

43) *Diyejia* 底野迦 was by far the most common Chinese transliteration for theriac or *tiryaq*, likely due to its use in the aforementioned widely cited *bencao* tradition. Several renderings of the term *diyejia* can be found in Ming and Qing texts, often with variations in the last element (rendering *jia* as 加 or 伽).

44) Though the original recipes have since been lost, the extant Table of Contents lists several "*fang* 方" for theriacs, the ingredients of which would ostensibly have been

medical texts: when the medical role of "theriac" or "*tiryaq*" in China is discussed, it is usually in the form of *diyejia*, which was not incorporated into, nor do descriptions of it include, a recipe.

The idea of an ingredient is thus central to understanding the textual life of both transliterated manifestations of theriac in China. *Diyejia* (as transliterated in the *Xinxiu bencao*) was consistently described as both (a) foreign, and (b) as a kind of ingredient (from variegated gall bladder, to pig gall bladder, to opium). The latter is crucial in explaining why, despite its constantly being described as "foreign," it became a vital part of Chinese collections of *materia medica*. Similarly, the *Huihui yaofang* transliterations of theriac terminology were made sense of (though they did not persist in later Chinese *materia medica*) by conceptualizing them as the names of recipes.

Recipes for Exchange

The space of the page was a crucial locus for the evolution and movement of natural knowledge in early modernity. In particular, the recipe form was a major mode of exchange for medical and culinary knowledge in this context, mediating cultural transmission and functioning as spaces of translation. This medium functioned not simply as a set of rules and objects, but also as an important

---

included in chapters that are no longer extant. See the following instances from Song, *Huihui yaofang kaoshi*, vol. 2: (1) From a section of recipes for curing animal and insect poisons: 100, line 5: "*you ta'er yaji fang* 又他而牙吉方" and line 9: "*xiao da'er yaji* 小荅兒牙吉"; 101, line 5: "*ta'er yaji fang* 他而牙吉方"; 102, line 8 and 12 both: "*ta'er yaji fang* 他而牙吉方"; and 103, line 1: "*ta'er yaji fang* (*er fang*) 他而牙吉方 (二方)". (2) From a section of recipes for curing myriad poisons: 104, line 8: "*huang ni da'er yaji* 黃泥荅兒牙吉", 105, line 10: "*ta'er yaji fang* 他而牙吉方". (3) From another section of recipes for curing animal and insect poisons: 108, line 1: "*da'er yaji nei you lingshezhe* 荅兒牙吉內有靈蛇者", with further names for theriac recipes on line 4: "*shuozhi jiu ta'er yaji* 說製九他而牙吉" and "*you ta'er yaji fang* 又他而牙吉方"; line 5: "*you ta'er yaji faluji fang* 又他而牙吉法盧吉方" and "*ta'er yaji fang* 他而牙吉方"; line 7: "*shuo ta'er yaji yaoli de xiao* 說他而牙吉藥力的效"; line 9: "*ta'er yaji a'er ba'a fang* 他而牙吉阿而八阿方"; and line 10: "*ta'er yaji sama niya fang* 他而牙吉撒馬尼牙方". (4) From a discussion of drug qualities: 111, line 2: "*you shuo da da'er yaji* 又說大荅兒牙吉".

meeting-space for different modes of medical argument.[45] In general, a recipe can be construed as a set of directions for the repetition or recreation of a substance or process. In food and medicine, it often includes a list of ingredients that may be accompanied by the amount of each ingredient prescribed. Another way to conceive of a recipe is as a manipulative technique for bringing about certain results, or more simply put, a statement as to how we can bring something about.[46] In short, we can think of a recipe as a set of elements (ingredients) related through a series of rules that, if followed, are supposed to bring about a result if certain conditions are met.

Recipes had been a basic part of medical literature from the earliest extant medical records in China. Compendia of *materia medica* were full of recipes indicating how the materials described should be prepared for use as medical drugs, from chicken to saffron to types of fire. Authors of Ming medical instruction manuals placed special emphasis on the importance of learning and memorizing medical recipes as a fundamental and critical part of medical education.[47] Chinese culinary and medical generally included a number of features: a list of substances (possibly accompanied by prescribed amounts of each ingredient), rules for combining or cooking the

---

45) Recent work that brings together computer science and medical theory has posited a series of modes of reasoning that operate at several levels of a medical system: diagnostic, anatomical, and causal modes of medical reasoning are among them. The reasoning involved in the clinical inference process, as well as the role of statistical reasoning in medicine, have also been widely studied. Indeed, the increasing use of the term "evidence-based medicine" to describe modern bio-medicine further supports the positing of a notion of "medical reasoning." Here, I am interested in the medical reasoning inherent in formulating and making sense of a medical recipe, especially when an alien element (a foreign drug, possibly with a foreign name) must be reconciled with the use of a host medical recipe.

46) R. J. Haack, "Recipes and Causes," *Mind* 76.301 (1967): 98-102. Haack's article was written as a reply to Douglas Gasking, "Causation and Recipes," *Mind* 64 (1955), 479-487. On the recipe as a literary form in German literary history, see Joachim Telle, "Das Rezept als literarische Form," *Berichte zur Wissenschaftsgeschichte* 26 (2003), 251-274. Telle recounts the use of (often versified) recipes in the service of varied literary ends, including humor, satire, alchemy, astrology, and politics.

47) See Angela Ki Che Leung, "Medical Instruction and Popularization in Ming-Qing China," *Late Imperial China* 24 (2003), 130-152, 133.

substances, and directions for consumption. The recipe might also include a statement of the conditions that the recipe would bring about: it might cure deafness, for example, or it might ensure a long and virile life. Arabic and Persian medical recipes, especially those from medieval pharmacopoeia that collectively had the most impact on Chinese pharmacy, had a similar form.[48] The typical recipe in an Islamic formulary included the name of the medicine, its indications, ingredients, directions for preparation, and recommended use. To what extent a foreign product circulated through medical contexts, and how readily it was naturalized (in some cases, re-named or equated with pre-existing names from the host language) depended in part on how easily the product could be assimilated into a recipe.

The recipes translated from Islamic pharmacy in the *Huihui yaofang* represent an excellent case of the transmission of medical knowledge being shaped by the recipe form. The extant recipes represent an attempt to translate what the authors considered to be important knowledge from Islamic medical texts and practice into Chinese terms. Most of the ingredients included in the *Huihui yaofang* were exotic drugs: some were known to Chinese *materia medica* and were translated into Chinese in the text, while some were left merely with transliterations of the accompanying *huihui* script. Recipes typically listed ingredients using Chinese measures. While major disease categories were recognizable within the Chinese medical tradition, and many were in fact common, several of the names of diseases, practices, and medicines within the text were more typically from Persian or Arabic medicine.[49] For example, the abundance of compound poison antidotes, many with specific names, reflects a quality of Islamic medical texts more than Chinese.[50] The compendium

---

48) On the general form of medieval Islamic medical recipes see Chipman, "Islamic Pharmacy," 265-66. For a translation of the formulary of a ninth century Nestorian physician, see Kahl, *Sabur ibn Sahl*. For the dispensatory of a twelfth-century Nestorian physician, see Oliver Kahl, *The Dispensatory of Ibn at-Tilmid* (Leiden, 2007).

49) Buel, "How Did Persian," 286-287 provides an English translation for one of the *Huihui yaofang* recipes.

50) See Kahl, *Sabur ibn Sahl*, and Kahl, *The Dispensatory of Ibn at-Tilmid* for many examples of what I mean, namely classification of the text at a macro-level. It is much more common to see named recipes for anti-poisons occupying a major categorical

represents a hybrid medicine with elements from both Islamic and Chinese medical contexts.

The form of the medical recipes themselves enabled this hybridity. These were typically *huihui* recipes that followed the order of elements common in Arabic and Persian medical compendia, but were written in Chinese script. Ingredients were given in lists, with alternate names provided next to each other. Chinese measures were listed as subtext below the *huihui* ingredient names, visually juxtaposing the Chinese metric with a *huihui* product. Importantly, the fact that the typical recipe forms in Islamic and Chinese formularies (and so many elements within each form, such as lists of ingredients and stacks of alternate names) were so modular allowed for intermingling of exotic with familiar elements in a way that made both make sense to an educated Chinese reader, or to a Persian doctor living in China who could read Chinese script.[51] Either of these readers would learn something new from the text, would meet with familiar ideas, and would come away with a new sense of what was medically or pharmaceutically possible. My premise is that textual form (here, the form of the recipe) both shaped and reflected a way of thinking about the material encoded in the form. It both mediated cultural exchange and helped determine how the exchange played out.

An early modern Chinese medical recipe encoded a great deal of information that would have been assumed knowledge by a skilled and knowledgeable doctor. Patient bodies were not identical, and the most effective recipes for treating any given illness might differ depending on sex, age, class, body type, lifestyle, or the region in which an individual lived. Medical recipes did not exist in a clean, one prescription-one illness set of rules, and plurality was a critical feature of early modern medical theory and practice. The responsibility of the doctor, then, was to bring his experience, learning, and

---

level in Islamic texts. In Chinese formularies, although poison is a common concern, it is rarely the case that a named, compound drug will be listed as its own entry. More commonly, recipes are given within the individual drug monographs.

51) For another take on the importance of modularity in generating innovation, see Lothar Ledderose, *Ten Thousand Things: Module and Mass Production in Chinese Art* (Princeton, 2000).

knowledge of the qualities and natural history of medical simples to bear in negotiating among the several possible remedies available for any patient's physical complaint, and this was implicit in the construction of medical recipes themselves. In reading a recipe and putting it into practice, a doctor was expected to understand the elements (or ingredients) combined, the principles and rules behind their combination and processing, and the suitability of each particular recipe for use in a particular context. Because part of the mandate of a skilled drug-prescribing doctor was an understanding of the ingredients or simples at his disposal, the identification of natural substances that could be used as drugs was critical. An ingredient had a number of qualities: it was at least in principle obtainable, it was nameable, and it existed in a relationship with other substances according to patterns of correspondence. In a Chinese pharmaceutical text, most of these ingredients were fully explicated; the reader was presented with an ingredient's textual history, its place within systems of correspondence, its potential toxicity or efficacy, and its relationship to other substances. Each ingredient also had a name, or possibly several alternate names.

Most of these products were simples rather than compound medicines. In effect, most of them were conceptualized as ingredients. In order to properly use these ingredients it was crucial that they were properly identified, and this could be accomplished in various ways. Well-known simples that had long been staples of Chinese *materia medica* provided a relatively unproblematic case: in general, they had long textual histories and their pharmaceutical qualities were matters of record, if occasionally also debate.[52] However, things could become significantly more complicated in cases wherein foreign or previously undocumented ingredients were recorded in a medical text. What illnesses, for example, could a foreign drug (from a different system of medical reasoning and different pharmaceutical context), once adapted into a host recipe, be used to cure? In that case, the name of the drug would be translated or transliterated into Chinese, with its medical qualities ascertained by recording

---

52) Objects in the authoritative *Shennong bencao jing*, for example, fell into this class of well-established drugs. Among these are several tonics still widely used in China today: *gouqi* berries, ginseng, licorice root, etc.

local oral knowledge and/or by analogizing or comparing the unknown material with a more common drug that was local to indigenous pharmaceutical texts. The rare and expensive caterpillar fungus (*dongchong xiacao* 冬蟲夏草), for example, was translated into Chinese medical recipes by comparison with the well-documented ginseng (*renshen* 人參, upon which it effectively absorbed the medicinal qualities of ginseng for the purposes of prescribing this initially little-understood drug. Identification, then, was a critical epistemic device in the practice of early modern Chinese pharmacy and the translation of foreign medical knowledge and theory into Chinese.

The mechanics of this epistemic translation were as follows. Authors of travel accounts and gazetteers wrote about X, a plant found in a newly incorporated or explored region of the empire, or from a foreign land or foreign texts. Alternately, medical authors of projects such as the *Huihui yaofang* read about X, an Islamic medical recipe, term, or drug. Early modern medical authors (or teams of author-translators) translated X into terms germane to Chinese *materia medica* using a number of epistemic technologies: comparison with known objects, identifying with known names, analogizing with known cases, assigning qualities from canonical Chinese medical texts like *qi*, flavor, usefulness in curing particular illnesses or classes of illness, etc. Through these manipulations, X was incorporated into a Chinese pharmaceutical recipe or an Islamic pharmaceutical recipe rendered in Chinese language and metrics. In effect, the recipe itself became a conversation among elements from multiple medical systems. Translation and transliteration were critical to this process, with the recipe acting as a space that shaped and mediated this translation and conversation among systems of medical reason.

Thinking about the recipe as a literary form and technology of exchange can help inform the study of comparative epistemology. Essentially, the recipe functioned as a space for the engagement of different modes of medical reasoning. Translation was required to mediate among these different systems. As new drugs and materials entered the Chinese medical canon, this involved not simply the translation of foreign terminology but also the conceptual translation of elements from one system of illness, healing, and physical manipulation of bodies to another.

Re-Locating Chinese Medicine

The recipe form was both a space and technology of cultural and medical conversation in the early modern world. The translation of medical texts, and the different levels of linguistic and cultural translation happening in the space of medical recipes in Chinese, Arabic/Persian, and hybrid texts like the *Huihui yaofang*, not only helped shape early modern Chinese medicine. The recipe form was a technology that helped re-define what "Chinese" medicine and "Chinese" natural substances were.

This continues to reverberate into contemporary scholarship in the history of Chinese medicine, as nationalist interests in subsuming borderland and colonized peoples under the umbrella of "ethnic minorities" has spurred a renewed interest in the history of foreign medicines and *materia medica* in China. This has become part of a complicated set of negotiations between ideas of "foreign" and "indigenous" medicine in the context of Chinese empire. Historians in China have attempted to re-draw the history of, for example, *huihui* medicine in China to emphasize its existence as part of Chinese knowledge rather than as an independent foreign knowledge-tradition, extending present colonial interests into the historiography of Chinese medicine. When the language of the foreign is too intimately tied up with a drug for such naturalization, however, as in the case of *diyejia*, the pharmacy manual becomes a further space of imperial negotiation. In contemporary China the *diyejia* that was once hailed for curing one hundred illnesses has become a poison, toxic to both body and nation: pharmacological reference books and occasional government documents on drug policy now equate *diyejia* with opium (*yapian* 鴉片), another explicitly "foreign" source of pleasure, danger, and harm.[53] Taking a fresh look at textual

---

[53] The *Zhongyao da cidian*, an authoritative encyclopedic reference work on drugs used in Chinese medicine, lists "*diyejia*" simply as an alternate name for opium, or *yapian*. *Zhongyao da cidian* 中藥大辭典 [Dictionary of Chinese drugs] (Shanghai, 2002), 2: 1640-42. In reports on the Chinese National Institute of Drug Dependence (NIDD) website, *diyejia* is explicitly linked with opium and characterized as a product brought into China from foreign countries (*waiguo* 外國). See, for example, "Evolution of China's Drug Control Policy" http://nidd.bjmu.edu.cn/publish/hr/hr3/3-00.

technologies of cultural exchange helps complicate this story by unpacking the history of "ethnic minority" medicine in China to include roots in a hybrid early modern world where glossaries and other forms of exchange mediated conversations among several modes of reasoning, medical or otherwise.

Bolatu's Pharmacy

This paper has attempted to use the case of "theriac" translation in China to bring a fresh perspective to the history of pharmacy, by taking the recipe seriously as a literary form and medium of exchange. In "Plato's Pharmacy," Jacques Derrida also tried to take translation seriously as a force that shapes the way we understand the history of medical drugs. He played with the reading and translation of the term *pharmakon* as a means of marrying the dialogues of medicine and language: according to Derrida's reading, a *pharmakon* was both remedy and poison, both foreign (essentially changing the body in much the same way as an illness) and completely natural.[54]

If we take a moment to consider "Bolatu's Pharmacy" (taking a cue from the Chinese transliteration for "Plato" in the *Huihui yaofang*), this sense of the almost-aromatic emanation of the *pharmakon*, its spread and transformation over time (much as any perfume), invites the notion of theriac as a *pharmakon* and raises the possibility of considering any transliterated-drug in the Chinese medical canon in similar terms. Over the course of its global history, theriac was both poison and antidote.[55] *Diyejia* metamorphosed from

---

htm (Accessed 15 August 2008), which characterizes *diyejia* as the first vehicle of opium use in China.

54) See Jacques Derrida, "Plato's Pharmacy," in Barbara Johnson (tr.), *Dissemination* (Chicago, 1981), 61-172.

55) This multiplicity makes sense also in evaluating the notion of "poison" itself in Chinese medicine. *Du* 毒 indicates both toxicity and efficacy, poison and potentially miraculous cure. For an introduction to the issue of *du* in (particularly Song period) Chinese medicine see Frédéric Obringer, *L'Aconit et l'orpiment: Drogues et poisons en Chine ancienne et médiévale* (Paris, 1997). Drugs in *bencao* works are generally categorized as having or lacking (*wu* 無) *du*. In general the state of having *du* indicates that a substance must be used with caution, that it is quite efficacious, and that it

the remedy for one hundred illnesses to a synonym for toxic opium. Context and environment transformed the medical concept.

And what of the mummy, another early modern *pharmakon*? The *Huihui yaofang* authors and Li Shizhen had both translated this sweet[56] and sinister drug from Islamic contexts into Chinese *materia medica*, ultimately working out in a way comparable to the fate of theriac in both texts.[57] Both were highly sought-after in the global early modern pharmacological trade, and both embodied the crucial place of Islamic medicine and texts in bringing this global market to China. While Li was happy to translate theriac into pig gall, in the case of the mummy-men his readers would have to be satisfied with an injunction that they go out and verify the story of honey mummies themselves to make up for his lack of access to the drug. Hundreds of years since the publication of Li's text, just as theriac retains its exotic aura as a foreign substance in contemporary Chinese medical literature, mummy has become a storied example of an exotic Islamic drug from an exotic time in China's past.[58]

---

ought to be used in moderation. Substances with *du* were likely to be used to induce pronounced effects or for ritual purposes.

56) A note in the *Huihui yaofang* description of mummy noted that some variations were stewed with honey, again identifying a crucial ingredient in both descriptions.

57) The *Huihui yaofang* included mummy as *muminayi* 木蜜納亦, likely a transliteration of *Mumiya*. See Song, *Huihui yaofang kaoshi*, 1: 177-180.

58) See, for example, the account of the Arabian honey-mummy of Chinese medical lore in Mary Roach, *Stiff: The Curious Lives of Human Cadavers* (New York, 2003), 221-222.