

# TRANSMISSION OF PERSIAN MEDICINE INTO CHINA ACROSS THE AGES

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## I Travellers, Traders and Texts

Cultural exchanges between China and Persia have a deep-rooted history, the earliest traces of which date back to the Warring States, Qin and Han Dynasties (550 BCE–220 CE). Berthold Laufer's *Sino-Iranica* (1919), Aly Mazahéri's *La Route de la Sole* (1983) and other works have shown the close links between the two cultures. Medicine provided an important element in Sino-Persian exchange. Song Xian's 宋峴 *Gudai posi yixue yu Zhongguo* 古代波斯醫學與中國 (Ancient Persian medicine in China) seems to be the sole book-length work devoted to the subject. However, the transmission of Persian medicine into China is extremely complex, and warrants more intensive research.

In the thirteenth year of He Di's 和帝 Yongyuan 永元 reign (101 CE), King Pacorus II (*Manju* 滿屈, Pers. *Manūchihir*) of the ancient Persian Kingdom of Parthia (*Anxi* 安息) sent envoys to China bearing tribute of one lion and 'a great bird', an ostrich, constituting the first reliable record of contacts between China and Persia (*Houhan shu*, 88.2909–34). After the end of the Eastern Han (9–220 CE) a number of disciples associated with Persia arrived in China, following the north-western route of Buddhist transmission from India into China. The most well-known of these was the first translator in the history of the translation of Buddhist scripture into Chinese, An Shigao 安世高, style name Qing 清. He was a Buddhist from Parthia who, because of family and political troubles, came to China at the end of the second century to spread the teachings. According to biographical information in the *Chu sanzang jiji* 出三藏記集 (Compilation of Notes on the Translation of the *Tripitaka*) T.2145 by the monk Sengyou 僧祐 (445–518), and the *Gaoseng zhuan* 高僧傳 (Biographies of Eminent Monks) T. 2059 by Hui Jiao 慧皎 (497–554), An Shigao was widely learned, and possessed a refined understanding of foreign classics, and many other forms of knowledge, extending to the seven heavenly bodies,<sup>2</sup> medical recipes and other arcane arts. Moreover, his medical skills were excellent; his prescriptions could be relied upon to effect a cure, and he was skilled at needling the vessels and diagnosing illnesses by observing the complexion, and by many other such methods. Looking at his intellectual background, it is undoubtable that the medical arts he studied included those from Persia and India and that, through the display of his breadth of knowledge and talent, he had gained great esteem in the countries west of China. The Buddhist scriptures that An Shigao translated included new medical knowledge

from outside the region. Chapter 5 on ‘Five Kinds of Success and Failure’ in the *Daodi jing* 道地經 (Skt. *Yogācāra-bhūmi*, Sutra of the Path of Stages of Cultivation) T.607.232a–235b, translated by An Shigao, and Chapter 1 of the *Xiuxing daodi jing* 修行道地經 (Sutra of the Path of Stages of Cultivation) T.606.183b–189b, entitled ‘Number 5: Categories of Success and Failure produced by the Five Skandhas’ (*Wuyin chengbai pin diwu* 五陰成敗品第五), translated by Dharmarakṣa (Zhu Fahu 竺法護, 230?–316), are variant translations of the same text. Both contain descriptions of Indian medicine, and thus it can be said that An Shigao made a contribution to the transmission of Indian medical knowledge to China.

The Jin, Southern and Northern Dynasties (265–589) saw a gradual increase in exchanges between China and Persia. Official histories of China began to contain extensive accounts of Persia, describing Persian local customs and social conditions, while frequently referring to Persian products, including a number of *materia medica*. The section on ‘Western Regions’ in the Records of the Wei (*Weishu: Xiyu zhuan*, 102.2270–1) mentions materials from the sixth century, including minerals like tuff (*toushi*, MC *thuw dzyek* 鑰石, Pers. *tutiya*),<sup>3</sup> great pearl (*dazhenzhu* 大真珠), cinnabar (*zhusha* 硃砂), mercury (*shuiyin* 水銀), verdigris (*yanlü* 鹽綠/碌 Pers. *zinjar*), and orpiment (*cihuang* 雌黃), as well as plant drugs such as frankincense (*Xunlu/ruxiang* 熏陸/乳香), saffron (*yujinxiang* 鬱金香), storax or oriental sweetgum (*suhe xiang* 蘇合香), slender Dutchman’s pipe root or *Aristolochia debilis* Siebold & Zucc. (*qing muxiang* 青木香), black pepper or *Piper nigrum* L. (*hujiao* 胡椒, Skt. *marica*), *pippali* or long pepper (*bibo* 葷撥), dates (*qiannian zao* 千年棗, Pers. *khurma*), nutgrass galingale root (*xiang fuzi* 香附子), yellow myrobalan or *Terminalia chebula* Retz. or (*helile* 訶黎勒, Skt. *haritāki*) and Aleppo gall, produced by wasps on *Quercus infectoria* G.Olivier (*wushizi/meishizi* 無食子/沒食子). A number of healing practices and beliefs from Persian religions also entered the Chinese cultural field through a variety of means. A tomb of Anjia 安伽 in Xi’an city, Shaanxi province, which was constructed during the Northern Zhou dynasty, was found to contain a number of very fine screens and a stone funerary bed, decorated with Zoroastrian murals from Persia. The lintel to the stone door at the entrance to the tomb was decorated with a mural, with scenes of two sacrificiants wearing gauze masks on their faces in the midst of a Zoroastrian sacrifice, including images of the sacred plant *haoma*. An image of the plant can be found on the headboard of the stone bed, now stored in the Miho museum in Japan. These testify to the adherence of foreigners to their Zoroastrian faith, while in China, and their transmission of immortality beliefs around *haoma* in the central Chinese plains.

Although the Sassanid Empire of Persia was superseded in the seventh century by the Tajiks (*dashi* 大食, Pers. *tāzīk*), throughout the Tang and Five Dynasties, China never discontinued her exchange with Persia. On the contrary, they became much closer than in the Six Dynasties through increased trade along both the Silk Road and sea routes. Impressions of the Islamic world can be found in what remains of Du Huan’s 杜環 (fl. eighth century) *Jing xing ji* 經行記 (Records of Travels and Experiences) in the Tang dynasty *Tongdian* 通典 (Comprehensive Institutions) by Du You 杜佑 (735–812). The lost portions of this work possibly contained further descriptions by Du Huan of customs and habits originating from Persia. *Juan* 971.11408a of the *Cefu yuangui* 冊府元龜 (Models from the Archival Bureau) records that in the first lunar month of the year 730, the Persian prince Ji Hu Suo 繼忽娑 came to Chang’an, to pay tribute of incense, rhinoceros horn and other ritual items. Among the foreigners coming from outside China, who included traders, doctors, soldiers, envoys, and disciples of the ‘three foreign teachings’ (that is, Nestorianism, Zoroastrianism and Manicheism), there were many who hailed from Persia. Along the rivers of Guangzhou 廣州 during the Tang dynasty (628–907) were anchored countless boats trading with India, Persia and southeast Asia, teeming with cargos of incense and treasures. There are many records

of Persian exports in historical literature. The ‘Biography of the Western Regions’ (*Xiyu zhuan* 西域傳) of the *Xin tangshu* 新唐書 (New Tang History 221–2.6213–65) records that Persian products such as Aleppo gall, nutgrass galingale root, yellow myrobalan, black pepper, *pippali*, dates, graphite (*shimo* 石墨) and sweet-dew peaches (*ganlu tao* 甘露桃) could all be used in medicine. *Juan* 193 of the *Tongdian* 通典 (*Comprehensive Institutions*) records these Persian exports: incenses such as mastic resin (*xunlu* 薰陸), turmeric (*yujin* 鬱金), storax, slender Dutchman’s pipe root (*qingmu* 青木), black pepper, evaporated cane juice (*shimi* 石蜜, Skt. *śarkarā*), dates, nutgrass root, *Terminalia bellirica* fruit, Aleppo galls, verdigris, orpiment and even the beautiful Queen of the Night flower, *Epiphyllum oxypetalum* (*youbotan* 優鉢曇).

## II Importing Knowledge Through Translations and Tales

As part of the continuous expansion of the professionalisation of Chinese pharmacology, not only were foreign *materia medica* absorbed into the corpus, but foreign pharmacological works were also translated into Chinese. The *Xinxiu bencao* 新修本草 (Newly Revised Pharmacopoeia), edited in the early Tang by Su Jing 蘇敬 (599–674) *et al.*, included 850 entries, of which 114 were newly added. During the Kaiyuan 開元 reign (713–741), Chen Zangqi 陳藏器 (687–757) compiled the *Bencao shiyi* 本草拾遺 (Supplement to the Pharmacopoeia), incorporating foreign-derived medicinals, recording hundreds of *materia medica* that were missing from the earlier work, including many foreign imports. After the Kaiyuan reign period, more texts describing foreign pharmacopoeia emerged, such as Zheng Qian’s 鄭虔 (691–759) *Hu bencao* 胡本草 (Western Pharmacopoeia). In these Chinese pharmacological works, many Persian *materia medica* are to be found. According to statistical measures, the *materia medica* appearing in the *Newly Revised Pharmacopoeia*, such as verdigris, lead oxide (*mituoseng* 密陀僧), shellac (*zikuang* 紫礦), dragon’s blood or resin of *Calamus draco* Willd. [*Arecaceae*] (*qilin jie* 麒麟竭), sal ammoniac (*naosha* 硃砂), Euphrates poplar or *Populus euphratica* Oliv. (*hutonglei* 胡桐淚), Aucklandia root or *Aucklandia costus* Falc. [*Asteraceae*] (*muxiang* 木香), asafoetida or latex *Ferula narthex* Boiss. (*awei* 阿魏, Skt. *hingū*), amber (*hupo* 虎魄), Chinese eaglewood or *Aquilaria sinensis* (*chenxiang* 沉香, Skt. *aguru*), storax, benzoin (*Anxixiang* 安息香 lit. ‘Parthian aromatic’, *Styrax tonkinensis* (Pierre) Craib ex Hart.), Chebulae Fructus, Aleppo gall, theriac (*diyedia* 底野迦, Pers. *diryaq*), evaporated cane juice, Parthian pomegranate (*anshiliu* 安石榴), were all more or less closely related to pre-Islamic Persian culture, and greatly augmented Chinese pharmacopoeic knowledge. The recipes collected in Wang Tao’s 王燾 (670–755) *Waitai miyao fang* 外臺秘要方 (Recipes based on the Secret Essentials of the Imperial Archives), and those from works such as Sun Simiao’s 孫思邈 (581?–682 CE) *Qianjin yaofang* 千金要方 (Essential recipes worth a Thousand Gold) and the *Jinxiao fang* 近效方 (Quick-Working Recipes, auth. unknown), used Persian ingredients such as: white evaporated cane juice (*baishimi* 白石蜜), Persian verdigris (*Bosi yanlü* 波斯鹽綠), Persian salt (*bosi yan* 波斯鹽), true Persian indigo (*zhen bosi qing dai* 真波斯青黛), Carpesium fruit Persian *Carpesium abrotanoides* L. (*Bosi heshi* 波斯鶴虱), and imported *pippali* among others. Apart from being used as a cosmetic, Persian indigo, also known as *Murex trunculus* indigo (*luozi dai* 螺子黛), also had medicinal applications for smallpox-like diseases, such as *tianxing fachuang* 天行發瘡 and *wandou paochuang* 豌豆炮瘡. Persian verdigris was used for many kinds of eye problems. The section entitled ‘Recipes for drinking milk, which energises listlessness and breaks *qi* [stagnation] (*Fu niuru buxu poqi fang* 服牛乳補虛破氣方)’ in the Sun Simiao’s *Qianjin yifang* 千金翼方 (Supplementary Prescriptions Worth a Thousand Gold Pieces) uses cow’s milk and *pippali* to remove all kinds of *qi* [stagnation]. This recipe, sometimes known as ‘*pippali* fried in milk’ (*rujian bibo fang* 乳煎畢撥方), was highly regarded in Persia and

Byzantium: Chinese sources refer to it as a ‘decoction from *Bei* (which could mean Persian) powder’ (*beisan tang* 悖散湯). According to tradition, this recipe was used by the Tang emperor Taizong 太宗 (598–649), and was so renowned that Hu Sihui 忽思慧 (fl. fourteenth century) included it in *j.* 2 of his *Yinshan zhengyao* 飲膳正要 (Proper and Essential Things for the Emperor’s Food and Drink), entitled ‘Dietary cures for all illnesses’ (*Shiliao zhubing* 食療諸病), where it is called ‘Method for sauteeing *pippali* in milk’ (*niunai zi jian bibo fa* 牛奶子煎葷撥法), testifying to the broad influence of the recipe. Medical and religious texts from the Chinese central plains frequently contain laudatory statements about medicinals like ‘Persian ones are of good quality’, ‘Persian ones are superior’ or ‘Its nature is not as good as Persian ones’, emphasising their reliability and efficacy.

Chinese translations of Buddhist scriptures record many drugs or products of Persian origin, including white Persian evaporated cane juice, glass and glass objects, alfalfa or *Medicago sativa* L. [Fabaceae] (*muxuxiang* 苜蓿香), root of *Triarrhena sacchariflora* (Maxim.) Nakai (*digeng* 荻根), Persian dates and other items which could all be used as *materia medica*. Persian white evaporated cane juice also appeared in ritual instructions for esoteric Buddhist rites. The translations also include Persian *materia medica*. Commenting on a Chinese translation for juice from the wild Persian date (*keshuluo* 渴樹羅, Skt. *kharjūra*, Pers. *khrma*), the Buddhist monk and master translator Yi Jing 義淨 (635–713) made the following observation: ‘It is shaped like a small jujube, it is astringent and sweet, and comes from Persia. It is also found in the central regions of India, but its flavour is slightly different. The tree grows singly, resembling a palm tree, bearing lots of fruit. When one is about to arrive in Fanyu 番禺 (modern-day Guangzhou), people call it Persian date. It tastes very similar to dried persimmons’.<sup>4</sup> Buddhist dictionaries also include Persian medicines, such as the *Yiqie jing yi yinyi* 一切經音義 (Sounds and Meanings [of all words in] the Scriptures) by Hui Lin 慧琳 (737–820), which states: ‘*Biba* 葷苳: Pronunciation of the first Chinese character is *bi*, Sanskrit *pippali*, name for drug from Western country, originally from Persia and India, it looks like mulberry fruit, thin and long, it is extremely acrid and spicy’.<sup>5</sup> Chan Buddhist masters from the central Chinese plains are also recorded as using phrases such as ‘Persians eat black pepper’ in answer to questions raised by their disciples.

Narratives in Tang dynasty biographies record a number of stories of Persian merchants, describing them as skilled at differentiating precious stones, and as superior in the medical arts. For example, ‘Essence of red cornetfish (*shaoyu* 鮫魚)’ was renowned for its miraculous effects; simply pasting it on a patient’s abdomen could reduce abdominal masses. Although these miracle tales and stories are not reliable as historical data, at the least they reflect the high regard people of the time held for foreign Persian products. Tang dynasty literati enjoyed reading pharmacopoeia and other encyclopaedic works, in order to increase their knowledge, expand their written works and increase their quality of life. Authors of Tang encyclopaedias also enjoyed writing about exotic foreign cultural products, thereby increasing the transmission of foreign medical products in the central plains. The most important Tang encyclopaedia is the short work, the *Youyang zazu* 酉陽雜俎 (Miscellaneous Morsels from Youyang). The first eighteen *juan* record twenty-two different plants from the same territories and regions, among which are included the following Persian medical products: Borneo camphor wood *Dipterocarpaceae* (*longnao xiangshu* 龍腦香樹 – from which borneol is produced), benzoin, Aleppo gall, shellac (*zima* 紫釧), asafoetida, *poso* tree 娑娑樹, Persian dates, sweet almonds or *Prunus persica* (L.) Batsch (*piantao* 扁桃), the *pannuse* tree 槃怒檣樹,<sup>6</sup> *qitun* wood 齊墩樹, *bie qi* 齋齊, Persian honey locust or *Gleditsia caspia* Desf. (*zaojia* 皂莢), myrrh trees, jasmine (*yeximi* 野悉蜜),<sup>7</sup> and *di'er* fruit 底欄實. The incorporation of foreign *materia medica* in the *Youyang zazu* 酉陽雜俎, is predominantly due to the Grand Councillor’s

son, Duan Chengshi 段成式, style name Kegū 柯古 (803–863), who, relying on his family's social status, mingled with the educated classes and foreign dignitaries in Chang'an. The *Youyang zazu* records five foreigners' names, the Persian emissaries Wuhai 烏海 and Shalishen 沙利深, the Chenla<sup>8</sup> emissary and Commandant of the Assault-resisting Garrison, the monk Shanibato 沙尼拔陀, the Byzantine monk Wan 彎, and the monk Deva (*Tipo* 提婆) from Magadha, ancient India. There is no record of the religious background of Wuhai and Shalishen, they may well have been Zoroastrian. The culture and lifestyle of Persia, including its religious customs, had a profound impact and influence on Tang society. The Persian *materia medica* entering China was highly valued, and was frequently used by officials and the affluent.

Among the medical manuscripts and fragments unearthed from Dunhuang are records of the Persian *materia medica*, sulphur and shellac. The remnants of the *Shilliao bencao* 食療本草 (*Materia Dietetica*) from Dunhuang S076R describes evaporated cane juice (Pers. *sarkara*; Skt. *śarkarā*) as being cold, and primarily governing hot swelling in the upper and lower abdomen and thirst. It emphasises that among all the extant varieties, the Persian was of the highest quality, and that those from Shu (modern Sichuan) and Eastern Wu (modern Jiangsu and Zhejiang) along the coast were not equal to it. Not only documents in Chinese, but also Tibetan-language manuscripts from Dunhuang (S.756) attest to the use of Persian materials in medical practice, such as Persian brocade, Persian paper and so on. In chapter 91 of the earliest extant Tibetan medical work, the 'Medical Method of the Lunar King' (Tib. *sman dpyad zla ba'i rgyal po*, skt. *somarāja*),<sup>9</sup> one also finds descriptions of theriac (Tib. *dar ya kan*), the famed product of ancient Greece, brought via Persian traders and passing through the Tibetan kingdom of Zhang Zhung. One 'Recipe for Massaging the Crown of the Head' from the Sui dynasty ophthalmological text, *Longshu pusa yanlun* 龍樹菩薩眼論 (Nagarjuna's Discourse on the Eye),<sup>10</sup> uses theriac from Western regions in the shape of a camel's gall bladder, which could also be a Persian product.

### III Local Texts and Uses of Western Drugs

During the Five Dynasties (907–960), the single most influential work of Persian medicine was the *Haiyao bencao* 海藥本草 (*Overseas Materia Medica*) by Li Xun 李珣, style name De Run 德潤 (?855–930?).<sup>11</sup> Li Xun was a 'local-born Persian' in China. His ancestors were Persians, who accompanied the Tang emperor Xi Zong 僖宗 (r. 873–888) in his flight from Chang'an into the province of Shu in 874, at one time occupying the post of Commandant of the Eastern Palace Guard Command. Living in the ninth and tenth centuries, Li Xun's talent as a scholar made him stand out among his peers and led to his achieving office in the Former Shu dynasty (907–925), after which he travelled through or resided from some time in Guangzhou. Li Xun was among the representative poets of the 'Amidst the Flowers' school, penning *ci*-style poems such as the *Nanxiang zi* 南鄉子 (Southern Lad) and other renowned works. His poems describe strange landscapes, a disdain for fame and glory, and his artistic style was clear and limpid, sparkling with wit. One depiction by Li Xun of a southern landscape painting transformed it from an object of beauty to an image of a wild desert riddled with miasmatic plagues. Li Xun is one of the foreign-born figures of great importance in medieval Chinese literature, his greatest contribution to which was his descriptions of southern scenery, which expanded the scope of the *ci* poetic genre. Li Xun's younger brother, Li Xuan 李珣 inherited the characteristics of Persian merchants, taking up selling incense for a career. He also had a liking for the Chinese strategic board-game *weiqi* 圍棋, as well as for *yangsheng*, in particular the arts of Daoist inner alchemy. In his later years he spent his entire

family fortune on alchemical products. Li Xun's little sister, Li Shunxian 李舜絃, is the only recorded foreign-born female poet of the period, leaving works such as *Shugong yingzhi shi* 蜀宮應制詩 (Commissioned Poems for the Shu Palace), *Diaoyu bude shi* 釣魚不得詩 (A Poem on Fishing Unrequited) and *Suijia you Qingcheng shi* 隨駕遊青城詩 (A Poem While Riding to Qingcheng Mountain). Li Xun's family personifies Sino-Persian cultural exchange.

Li Xun's greatest contribution to medical history is his *Overseas Materia Medica*. This work is a pharmacopoeia which focusses exclusively on drugs imported into China along the maritime routes, but the framework and style of writing are completely modelled on native Chinese pharmacopoeic literature. The *Overseas Materia Medica* relies on the style and structure of the *Xinxiu bencao* (Newly Revised Pharmacopoeia) and explains foreign-derived drugs according to the progressive descriptions traditional in Chinese medicine. This is an example of cultural fusion, and reveals the reception and transformation of foreign materials within Chinese medicine.

According to statistics in Shang Zhijun's 尚志鈞 edited *Overseas Materia Medica*, the products referred to as produced in Great Qin 大秦國 (Eastern Roman Empire) include these five items: Persian alum (*Bosi fan* 波斯礬), *wufeng duyao cao* 無風獨搖草, nutmeg (*roudoukou* 肉豆蔻), fragrant rosewood (*jiangzhen xiang* 降真香) and seeds of the large-fruited elm, or *Ulmus macrocarpa* Hance (*wuyi* 蕪荑). Those related to Persia include seventeen items, such as: gold-streaked alum (*jinxian fan* 金線礬), silver shards (*yingxie* 銀屑), green salt (*liuyan* 綠鹽), Euphrates poplar, betel pepper fruit (*jujiang* 蒟醬), dill (*shiluo* 蒔蘿), benzoin, myrrh (*moyao* 沒藥), Aleppo gall, marking nut or *Semecarpus anacardium* L. (*poluode* 婆羅得, *poluole* 婆羅勒, Skt. *Bhallātaka*, Pers. *Balādur*, Tocharian B *Bhallātak*), litchi (*lizhi* 荔枝), white Persian alum (*Bosi baijan* 波斯白礬), frankincense (*rutou xiang* 乳頭香), resin of Persian pine (*bosi shuzhi* 波斯樹脂), pistachio (Pers. *ayuehun*, *wumingzi* 無名子), *Semen Ulmus macrocarpa* Hance or Persian elm seeds (*bosi wuyi* 波斯蕪荑), bark of *Lithocarpus glaber* (*keshu pi* 柯樹皮) and haritaka (*helile* 訶梨勒). One text cited within the *Overseas Materia Medica*, the *Bie bao jing* 別寶經 (Classic on Distinguishing Treasures) was probably a surviving trace of foreign Persians, and their traditional specialisation in identifying gemstones. The betel nut recipe in the *Overseas Materia Medica* described as coming from Great Qin is one rarely seen in native Chinese sources. Together with this work, the *Nanhai yaopu* 南海藥譜 (Treatise on Drugs from the Southern Seas) and the *Haiyao lun* 海藥論 (Discourse on Overseas Drugs) all deal with the importation of foreign drugs. The *Overseas Materia Medica* was lost earlier, and is mostly recorded in Song period Chinese works on *materia medica* and, together with common folk lore, complemented the accumulated knowledge within traditional Chinese medicine in this way gradually influencing the East Asian region.

Within China there were many Persians who worked in medicine. The Persian Li Miyi 李密醫 who made the journey across from China to Japan in 736, the twenty-fourth year of Tang Emperor Xuan Zong 唐玄宗, may well have been a medical doctor.<sup>12</sup> In 812, the seventh year of the Yuanhe reign, the ship's captain Li Mohe 李摩訶 who made an offering of a recipe for *Psoralea corylifolia* or babchi (*buguzhi* 補骨脂) to the Prefect of Guangzhou, was also likely to have been a Persian merchant. The *Beimeng suoyan* 北夢瑣言 (Fragmentary Sayings of a Northern Dream), an important tenth-century historical record, describes the Persian Mu Zhaosi 穆昭嗣, who as a child was fond of medicinal arts, and who, because his drugs were effective, took up a position in his local government. It is possible that this 'Persian' Mu Zhaosi was in fact from the land of Mu 穆 in the Sogdian states. One document from Dunhuang, S.1366, contains a late tenth-century mention of which local government donated comestibles, such as flour and oil, to a Persian monk (perhaps a Nestorian) who had contributed medicine to local authorities. The Collected Essays of Li Deyu 李德裕, towards

the end of the Tang dynasty, records one ‘monk from Great Qin, who was a specialist in treating the eyes’ and also a Nestorian, as active in Chengdu (in modern-day Sichuan) (*Li Wenrao wenji*, ch.12). In his tenth-century *Kitāb al-Fihrist* (Categorical Index of Collected Writings), Ibn al-Nadim records a Chinese youth from Baghdad who learnt Galenic medicine from the Persian doctor Mohammad-e Zakariā-ye Rāzi. Using rapid mnemonic methods, he memorised the Galenic classics in six months before returning to his homeland. However, the work does not leave us this Chinese student’s name. Nevertheless, it indicates that medical scholars travelled far into Baghdad and wider Persia to learn Islamic medical knowledge.

Along with Persian food culture travelling East came Persian wines, jams, honey, candies such as rock sugar, dates, almonds, *qitun* bark, figs (*wuhuaguo* 無花果), Parthian pomegranates, dill (*shiluo* 蒔蘿), beetroot (*tiancai* 甜菜, also *junda* 軍達 or 著蓬), spinach (*lit.* Persian greens, *bosi cai* 波斯菜), which became part of the categorical records (*pulu* 譜錄) of common Chinese people, and were ingredients frequently employed in Chinese food and drink. The term *zhujunda* 諸軍達, encountered in the Dunhuang text *Zaji shiyao yongzi* 雜集時要用字 (Miscellany of Important Terms Used in Daily Life) P.3391, originally derives from the New Persian term *čugundur* or *čugonder*, and refers to the plant used to make sugar, beetroot, which formed an important commodity of cultural exchange between China and Samarkand (Yu Xin 2013). Because medieval Persian and Indian cultures were closely linked at this time, Indian medicaments and their use were also transported to Persia, and thence into China, and in this way Persian medicine exerted a particular type of influence in medieval China. The juice of *triphalā* (Skt. for ‘three fruits’, *sanle jiang* 三勒漿) was a fruit-based liquid imported from Persia, but originally sourced from India, made from yellow myrobalan or *Terminalia chebula* Retz. (*helile* 訶梨勒, Skt. *harītāki*), beleric myrobalan or *Terminalia bellirica* (*pilile* 毗梨勒, Skt. Vibhitaka), and emblic myrobalan or *Phyllanthus emblica* L. (*anmole* 庵摩勒 Skt. *amalika*). Following the fashion in the higher echelons of Tang society, during the Song dynasty related medicinals from southern regions, such as yellow myrobalan decoction (*hezi tang* 訶子湯) and beleric myrobalan decoction (*yuganzi tang* 余甘子湯), enjoyed widespread fame in the north. The Yuan dynasty doctor Xu Guozhen 許國禎, style name Jinzhi 進之, temporarily renewed the fashion for *triphalā*, which had declined in the Ming dynasty to the extent that it was hardly made any more. However, texts containing related knowledge were passed down the generations, so that people today still attempt to replicate it in memory of the historical Tang type. The three fruits held an important place in Indian medicine and cuisine, and there exists matching mythography concerning them. Persian and Arabic medical texts and the Mongolian *Huihui yaofang* 回回藥方 (A Collection of Muslim Prescriptions) describe the use of the ‘three fruits’ in both medicine and drink, and mention their higher popularity in Persian and Arabic regions as quite different from their dissemination in the central plains of China, because of the difference between Persian, Chinese and Indian cultures. Acting as a midway point, Persian trade routes not only made for a secondary mechanism of external migration of Indian dietary custom, but cloaked them in Persian-style cultural trappings when entering Chinese soil. In this way, the customs of food and drink of China, India and Persia embodied variety, difference and mutual exchange between the cultures and religions of the three regions.

In the pursuit of longevity, medieval alchemists and experts in the Daoist arts looked to Western merchants dealing in drugs from Western regions. Persian drugs were frequently used by Chinese alchemists, as described in the work by the Late Tang and Five Dynasties Li Guangxuan 李光玄 from Bohai 渤海 (modern-day Binzhou in Shandong), the *Jinye huan-dan baiwen jue* 金液還丹百問訣 (Explanations of the ‘Hundred Questions’ on the Cyclically

Transformed Elixir of Liquefied Gold, DZ 266). He writes: ‘That referred to as Numinous Elixir is not from here, it is said the ultimate drug is produced overseas, one should look to the interior of Persia, and from there seek white alum (*baifan* 白礬) and purple alum (*zifan* 紫礬). Or turn to the Uighur lands, and ask for diamonds and shards of jade’. Of the foreign drugs that could be used for refining elixirs referred to in alchemical texts in the *Daoist Canon*, many came from Persia, India, Khotan, Nanhai 南海 (modern-day Guangzhou), Silla, Beiting 北庭 (modern-day Ürümqi). These were primarily mineral drugs, and plant drugs were in the minority. Frequently mentioned minerals from Persia include: Persian chalcopyrite (*Bosi toushi* 波斯鑰石), ‘true superior Persian brass with the hue of a horse tongue’ (*zhen Bosi mashe se shang tou* 真波斯馬舌色上鑰), Persian aurichalcite (*Bosi zhetou* 波斯折鉛), Persian lead (*Bosi qian* 波斯鉛), Persian Verdigris, white lead powder (*hufen* 胡粉), borax (*da peng sha* 大鵬砂), lithargyrum or lead oxide (*mituoseng* 密陀僧), sulphur ore (*shiliu huang* 石硫黃), naphtha (*shinao* 石腦), iron sulphate (*jiang fan* 絳礬), ‘chicken dung’ alum (*ji shi fan* 雞屎礬),<sup>13</sup> heaven’s brilliance sand (*tianming sha* 天明砂), yellow floriate ore (*huang hua shi* 黃花石), asbestos (*buhui mu* 不灰木), rock salt, sulphur imported by sea (*boshang liuhuang* 船上硫磺), northern calamine (*bei lüqanshi* 北盧甘石, Pers. *tütiya*), pyrolusite (*wumingyi*, 無名異), Persian alum, Persian white alum, potassium chrome alum (*zi fan* 紫礬), Persian refined lead (*Bosi qian jing* 波斯鉛精), Persian red salts (*Bosi chiyan*, 波斯赤鹽), Persian silver ore (*xigezhi*, 悉恪脂), indigo (*qingdai* 青黛) and *Carpesium abrotanoides* (*heshi* 鶴虱).

#### IV Chinese Institutions and Markets

From the Song dynasty onwards, the unimpeded commerce along the maritime silk route accelerated trade in foreign drugs, so that Persian traders in Quanzhou, Yangzhou, Siming (modern-day Ningbo) and other such places continued their trade in incense and drugs. Early in the Song dynasty, at least forty-four varieties of ferula incense are recorded as being imported, but by 1133 they rose to more than two hundred types. The record of goods on trading vessels in the *Siming Zhi* 四明志 (Siming Gazetteer) during the *Baoqing* period (1125–1228) describes numerous ‘fine goods’ such as ferula resin, myrrh, Aleppo gall, aloe (*lühui* 蘆薈), rosewater (*qiangwei shui* 薔薇水), shellac and others, many of which originated in Persia. Song dynasty pharmacological texts included many more foreign products than earlier works. The *Kaibao bencao* 開寶本草 (*Materia Medica* of the Kaibao Reign), the *Bencao tujing* 本草圖經 (*Tujing bencao* 圖經本草, *Illustrated Materia Medica*), the *Bencao yanji* 本草衍義 (Further Discussion on *Materia Medica*) and Tang Shenwei’s 唐慎微 (fl. eleventh to twelfth centuries) great compendium the *Zhenglei bencao* 證類本草 (*Classified Materia Medica*) all included many foreign ingredients. The main ones in the *Classified Materia Medica* include indigo, aloe, babchi, pistachios, myrrh, *cile* resin (*yuancile* 元慈勒), dates (*wulouzi* 無漏子), gold-streaked alum, sulphur ore, lead oxide, coral (*shanhu* 珊瑚), ferula resin and *pippali*. In the main, it can be said that they definitely became integrated as important components in Chinese pharmacology.

Following the westward march of Mongolian armies and the entry of Muslim scholars from Central Asia and the Middle East, the trade in Chinese and Persian medicine in the Yuan dynasty was in an unprecedented situation. For the most part, the upper echelons of Yuan society mainly used officially recommended medicines, approved by institutions such as the Medical Bureau, the Imperial Pharmacy, the Office of Broad Grace (*Guanghui si* 廣惠司), which provided West Asian medical service, the Islamic Pharmaceutical Bureau (*Huihui yaowu yuan* 回回藥物院), the Islamic Pharmaceutical Dispensary (*Huihui yaowu ju* 回回藥物局) and the Pharmaceutical Dispensary of Gracing the People (*Huimin yaowu ju* 惠民藥物局),



otherwise Persian doctors offered their services. They not only brought medicinal products with them, they also translated a number of Persian and Islamic medical texts into Chinese. The Yuan dynasty Director of the Palace Library preserved the *Tebi yijing shisan bu* 忒畢醫經十三部 (Classic of Tibb Medicine in Thirteen Volumes), because it was the most practical and important translation of this Islamic medical work. During Kublai Khan's *zhiyuan* 至元 period (1264–1295), he collected medical classics from around the world, and had the *Dayuan bencao* 大元本草 (Pharmacopoeia of the Great Yuan) compiled. Although this work has since been lost and it is difficult to know what it contained, it is very likely that it would have included Persian and other foreign medicinals. In *juan* seven of *Nancun chuogeng lu* 南村輟耕錄 (Records from the Southern Hamlet of Setting the Hoe Aside) in the Yuan dynasty, Tao Zongyi 陶宗儀 records a variety of Persian gems and minerals, such as corundum (Pers. *yakut*, *yagu* 鴉鶻) under the term 'Muslim minerals' (*huihui shitou* 回回石頭), some of which had medicinal applications. The most prominent foreign drink was sherbet (*shelibie* 舍利別, *shelibai* 攝里白, Pers. *šarba*, *šarbat*), a concentrate made from high-grade fruit mixed with sugar or honey and then diluted with water,<sup>14</sup> and there were also similarly named fruit wines such as *šarāba* (*shelibie* 舍利必) and grape wine. As sherbet entered the local market, it became known as 'slake-thirst drink' (*jiakeshui* 解渴水), and developed into ten or more different varieties. The *Yinshan zhengyao* 飲膳正要 (Important Principles of Food and Drink) by Hu Sihui 忽思慧 (fl. 1314–1330) is among the most important works on dietetics and medicinal curing (Buell and Anderson 2000). This work not only refers to the successes of Chinese and Mongolian folk dietary cures, but also contains elements of Persian and other Western dietary cultures.

During the early Ming dynasty, *Huihui yaofang* 回回藥方 (A Collection of Muslim Prescriptions) exemplifies Yuan dynasty medical exchange, but this is not an independent work written by some ethnically Hui medical scholars, but is more likely to be an edited translation of an Islamic medical work, including selections from one or more Persian or Arabic medical encyclopaedias, closely drawn from Avicenna's *Canon of Medicine* (Arab. *al-Qānūn fī at-Ṭibb*). The original *Hui Medicinal Recipes* (*Huihui yaofang*) contained thirty-six *juan*, most of which have been lost. Only four now survive, and these are stored in the rare book section of the Chinese National Library. The *Huihui yaofang* contains a number of ancient recipes and the names of medical doctors from Persia. These include one of the three great Persian doctors, Muḥammad ibn Zakariya al-Rāzī (*Mahe made [ben] zakeliya* 馬哈麻的[本]咱可里牙, 864–925/932); the Abbasid doctor of Persian descent from the Arabian empire, Isa ibn Saharbakht (*Sahe'er baheite* 撒哈爾八黑忒); the ninth to tenth-century Nestorian doctor from Baghdad, originally born in the Persian city of Marv, Abu Yaḥyā al-Marwarruzi (*Ma'er waji* 麻而瓦即); together with the famed Persian doctor from Jundi Shahpur, Sābūr ibn Sahli (Shabu'er sanheli 沙卜而撒哈里) and the greatest of the three major Persian doctors, Ibn-Sīnā (*Bu'ali* 卜阿里, Abu alisanna 阿卜阿里撒納). The title *Kelime wenshu* 可里眉文書 refers to *The Complete Book of the Medical Art also known as Kitāb al-Malikī* (Pers. *Kitāb Kāmil al-šīnā'ah al-tibbīyah*) by al-Majūsī (*Maijuxi* 麥朱西). Furthermore, the *Huihui yaofang* acted as a Persian mediator to transmit ancient Greek medical knowledge to China. The *Huihui yishu* 回回醫書 (A Collection of Muslim Medical Works) was translated by Mashayihei Mohamed 馬沙亦黑馬哈麻. This book is similar to the *Huihui yaofang* mentioned above, and was collected in *juan* 1426–1464 of the massive Ming dynasty encyclopaedia, the *Yongle dadian* 永樂大典, including twenty-six *juan* on internal medicine, six on external medicine and seven on drug recipes.

According to preliminary statistics by Song Xian 宋峴, about five hundred foreign drugs are included in Song, Yuan and Ming Chinese medical works, and the majority of these

are recorded in the *Huihui yaofang*. The Western drugs which appear in the *Pujifang* 普濟方 (Recipes for Universal Relief) by Zhou Dingwang 周定王 from 1406 CE include: zinc oxide or tutty (*duotiya* 朵梯牙, Pers. *tutiya*), *anzarout* tree resin (*anzalu* 安咱蘆, Pers. *anzarūt*), gum tragacanth (*ketiela* 可鐵刺, Pers. *kateerā*), opium (*afeiyong* 阿飛勇, Pers. *afyoon*), plum tree gum (*lizi shujiao* 李子樹膠), which refers to gum Arabic (*sanyi* 三亦, Pers. *samgh*), among others. Practical prescriptions from Persia, for example, using wine to disperse toxins and cure bones, blowing through the nose to remove cataracts, using vinegar medicinally to ease childbirth, and distillation methods for producing rosewater and other medicated waters and wines, all appear in Chinese recipe texts or notebooks. There are many large pharmacopoeic works in the Ming dynasty, among which the most important is Li Shizhen's 李時珍 (1518–93) *Bencao gangmu* 本草綱目 (Categorical and Itemised Pharmacopoeia). Apart from the *Huihui yaofang*, which was inaccessible as it was stored within the imperial library, Li Shizhen incorporated all the Persian drug tracts available to him in his *Pharmacopoeia*, including opium which entered China from Western Asia. The two officially compiled major drug compendia, the *Bencao pin hui jingyao* 本草品匯精要 (Collected Essentials of *Materia Medica* Species) and the *Buyi Leigong paozhi bianlan* 補遺雷公炮製便覽 (Supplement to Master Lei's Guide to Drug Preparation), contain beautiful diagrams produced by palace painters, depicting the external appearance of the drugs and of the methods for preparing them. The eight pictures of foreign drugs show examples belonging to foreigners from Persia and elsewhere, and the ways in which they prepared and presented drugs, thus portraying the image Han Chinese intellectuals had of the world abroad (Chen Ming 2018: 305–14).

## V Lasting Influence

Even more deserving of notice are the studies of by Western scholars of the plants used by Persians in their medicine, their treatment methods and customs, the translations of which into Chinese further influenced medicine in China. Although this knowledge only represents a second-hand influence of Persian medicine in China, it should still not be overlooked. The *Manual of Materia Medica and Therapeutics*, co-authored by the English medical doctors John Forbes Royle and Frederick William Headland (1879), recorded quite a few ancient Persian and Arabic doctors, their *materia medica* and related medical knowledge. A number of Persian works are cited in the Chinese edition of the *Manual of Materia Medica and Therapeutics*, the *Xiyao dacheng* 西藥大成, translated by John Fryer and Zhao Yuanyi 趙元益, including references to 'Persian writers', 'Persian *Materia Medica*', 'Persian works on *Materia Medica*', 'F. Gladwin's *Ulfaz Udwieh*' and 'The Persian works on *Materia Medica* in use in India'. The work also refers to numerous ancient Persian, Syrian and Arabic famous scholars, such as 'The ancient botanist Avicenna' (*Afeisena* 阿非色那), 'Rhases, Rhazis/Zakariya al-Rāzī' (*Laxisi* 拉西司), 'the botanist Serapion/Yahya ibn Sarafyun' (*Saila pi'en* 塞拉披恩) and the Arab 'Geber/Jābir ibn Hayyān' (*Qiba* 奇巴) or 'the chemist' (*Qiba* from the Middle East).

Concentrating only on medical systems, Persian *materia medica* were the dominant among all those which found their way into China, although medical theory and practical therapeutic methods had limited influence. What should not be overlooked is that, since the Ming and Qing Dynasties onwards, the strongest source of Persian medicine in China has been Uyghur medicine, which basically relies on Islamic medicine as a model, including ancient Persian medical theories, texts, use of *materia medica*, therapeutic methods and traditional treatments. Quite a few Persian medical works, which have been translated into Chagatai, Uyghur and other languages, continue to be circulated in Xinjiang and neighbouring Central Asian countries. Naturally, Sino-foreign exchange is two-directional. From one aspect,

we can see the historical export of Persian medicine to China; from another, Chinese *materia medica* and related knowledge were also transmitted into Persia. During the Ilkhanate period (1256–1353), Chinese tea (Pers. *tchay*) was used a medicine in the Ilkhan. Until the mid-nineteenth century, tea was commonly drunk by people in Persia for medicinal reasons. A fair number of Chinese *materia medica* (such as cinnamon, ginger, rhubarb root, bodhi seeds, musk and others) were also commonly used by Persian doctors. Even more representative is the work edited by the Ilkhanate minister, Rashīd al-Dīn Faḏl Allāh Hamadānī (1247–1318), the *Tānksūqnāmeḥ* (Treasure Book of the Ilkhan on Chinese Science and Techniques). Rashīd al-Dīn established a centre for technological culture near Tabriz, in the town of Rob'-e Rashīdī, to which came a number of Chinese doctors, who introduced local Iranians to acupuncture and moxibustion, pulse diagnosis, the making of herbal preparations and other traditional Chinese therapeutic methods, as well as a number of medical works by famous Chinese doctors. The *Tānksūqnāmeḥ* was originally arranged in four sections, including such works as the *Maijue* 脈訣 (Explanations of the Pulse) by Wang Shuhe 王叔和 (180–270), a famous literati from Gaoyang 高陽, the *Tongren shuxue zhenjiu tujing* 銅人腧穴針灸圖經 (Illustrated Classic on Points for Acupuncture and Moxibustion on the Copper Man), the *Shennong bencao jing* 神農本草經 (Divine Farmer's Pharmacopoeia) and the *Taihe yijing* 太和易經 (Great Harmony Classic of Changes). A copy of the *Tānksūqnāmeḥ* currently survives in the Aya Sophia in Istanbul, of which only *Wang Shuhe's Explanations of the Pulse* remains, a comprehensive testament to Chinese perspectives on medicine, pulse diagnosis and their explanations of the internal organs.<sup>15</sup> The diagrams in the *Tānksūqnāmeḥ* also show signs of the influence of Chinese painting on Persian painting. Therefore, the mutual connections between Persia and China should be the subject of further research, in order to bring to light the complex and rich history of cultural exchanges between these two lands.

## Appendix: translated terms for Persian *materia medica*

Common name	Pinyin	Chinese	Sanskrit	Scientific	Persian
Aleppo gall	wushizi meishizi	無食子 沒食子		Quercus infectoria G.Olivier	
alfalfa	muxuxiang	苜蓿香		Medicago sativa L.	
aloe	lühui	蘆薈		<i>Aloe vera</i> (L.) Burm.f.	
amber	hupo	虎魄			
anzaroot tree resin	anzalu	安咱蘆		Astragalus sarcocolla Dymock	anzarūt
asafoetida	awei	阿魏	hingu	Ferula narthex Boiss.	anguza
asbestos	buhui mu	不灰木			
Astragalus gum	ketiela	可鐵刺		Astragalus gummifer	kateerā
gum tragacanth				Labill.	
Aucklandia root	muxiang	木香		Aucklandia costus Falc.	

(Continued)

Common name	Pinyin	Chinese	Sanskrit	Scientific	Persian
beetroot	tiancai junda zhujunda	甜菜 軍達 / 蒼蓬 諸軍達		Beta vulgaris L.	čugonder
beleric myrobalan	pilile	毗梨勒	vibhitaki	Terminalia bellirica (Gaertn.) Roxb.	
beleric myrobalan decoction	yuganzi tang	余甘子湯			
benzoin	Anxixiang	安息香		<i>Styrax tonkinensis</i> (Pierre) Craib ex Hart	
black pepper	hujiao	胡椒	marica	Piper nigrum L.	
borax	bie qi da peng sha	翻齊 大鵬砂			
Borneo camphor wood	longnao xiangshu	龍腦香樹		Dryobalanops aromatica C.F.Gaertn.	
carpesium fruit	Bosi heshi	波斯鶴虱		Carpesium abrotanoides L. Persiana	
Carpesium fruit	heshi	鶴虱		Carpesium abrotanoides L.	
chicken dung alum	jishifan	雞屎礬			
Chinese eaglewood	chenxiang	沉香	aguru	Aquilaria sinensis (Lour.) Spreng.	
Chinese tea	cha	茶		Camellia sinensis (L.) Kuntze	tchay
cile resin	yuancile	元慈勒			
cinnabar	zhusha	硃砂			
coral	shanhu	珊瑚			
corundum	yagu	鴉鶻			yakut
dates	qiannian zao,	千年棗	kharjūra	Phoenix	kħrma
Persian date	keshuluo, wulouzi	渴樹羅 無漏子		dactylifera L.	
di'er fruit	di'er shi	底欄實			
dill	shiluo	蒔蘿		Anethum graveolens L.	
dragon's blood	qilin jie	麒麟竭		Calamus draco Willd.	
dried sugar cane, white dried sugar cane	shimi, baishimi	石蜜 白石蜜	śarkarā	Saccharum officinarum L.	
Dutchman's pipe cactus	youbotan	優鉢曇		Epiphyllum oxypetalum (DC.) Haw.	
Queen of the Night					
emblic myrobalan	anmole	庵摩勒	amalika	Phyllanthus emblica L.	

Persian medicine into China

Common name	Pinyin	Chinese	Sanskrit	Scientific	Persian
Euphrates poplar	hutonglei	胡桐淚		Populus euphratica Oliv.	
figs	wuhuaguo	無花果		Fructus Fici	
fragrant rosewood	jiangzhen xiang	降真香		Dalbergia odorifera T.C.Chen	
frankincense	xunlu ruxiang rutou xiang	熏陸 乳香 乳頭香		Boswellia carteri Birdw. Boswellia sacra Flück.	
fruit wine	shelibi	舍刺必			šarāba
fruit-spike of betel pepper	jujiang	蒟醬		Piper betle L.	
gold-streaked alum, fiboferrite	jinxian fan	金線礬			
graphite	shimo	石墨			
great pearl	dazhenzhu	大真珠			
green salt	lüyan	綠鹽			
gum Arabic 'Plum tree gum'	lizi shujiao sanyi	李子樹膠 三亦		Senegalia senegal (L.) Britton	samgh
heaven's brilliance sand	tianming sha	天明砂			
indigo	luozi dai qingdai	螺子黛 青黛		Murex trunculus	
Japanese oak	keshu pi	柯樹皮		Cortex <i>Lithocarpus glaber</i> (Thunb.) Nakai	
jasmine	yeximi suxinhua	野悉蜜 素馨花		Jasminum grandiflorum L.	
juice of three fruits large-fruited	sanle jiang wuyi,	三勒漿 蕪莢	triphalā	Ulmus macrocarpa Hance	
(Persian) elm seeds	bosi wuyi	波斯蕪莢			
lead oxide	mituoseng	密陀僧			
lithargyrum					
litchi	lizhi	荔枝		Litchi chinensis Sonn.	
long pepper	bibo biba	萆撥 萆芡	pippali	Piper longum L.	
marking-nut	polude	婆羅得	Skt. bhallātaka Toch. B bhallātak	Semecarpus anacardium L.	balādur
mastic resin tears of Chios	xunlu	薰陸		Pistacia lentiscus L.	
mercury	shuiyin	水銀			
myrrh	moyao	沒藥			
naptha	shinao	石腦			

(Continued)

Common name	Pinyin	Chinese	Sanskrit	Scientific	Persian
northern calamine tutty	bei lüganishi	北盧甘石			tūtiya
nutgrass galingale root	xiangfuzi	香附子		Cyperus rotundus L.	
nutmeg	roudoukou	肉豆蔻		Myristica fragrans Houtt.	
opium	afeiyong	阿飛勇		Papaver somniferum L.	afyoon
orpiment	cihuang	雌黃			
Parthian pomegranates	anshiliu	安石榴		Punica granatum L.	
Persian alum	Bosi fan	波斯礬			
Persian aurichalcite	Bosi zhetou	波斯折鋤			
Persian honey locust	zaojia	皂莢		Gleditsia caspia Desf.	
Persian lead	Bosi qian	波斯鉛			
Persian pine resin	bosi shuzhi	波斯樹脂			
Persian red salts	chiyan	赤鹽			
Persian refined lead	Bosi qian jing	波斯鉛精			
Persian salt	bosi yan	波斯鹽			
Persian silver ore	xigezhi	悉倍脂			
Persian verdigris	bosi yanlü	波斯鹽綠			
Persian verdigris, verdigris	Bosi yanlü, yanlü	波斯鹽綠 鹽綠/碌			zinjar
Persian white alum pistachio	Bosi baifan wumingzi	波斯白礬 無名子		<i>Pistacia chinensis</i> subsp. <i>integerrima</i> (J.L.Stewart) Rech.f. Punica granatum L.	ayuehun
pomegranate	anshiliu	安石榴			
poso tree	poso shu	婆娑樹			
psoralea fruit	buguzhi	補骨脂	babchi	Cullen corylifolium (L.) Medik.	
purple alum, chrome alum chromium potassium sulphate	zifan	紫礬			
pyrolusite	wumingyi	無名異			
qitun tree	qitun shu	齊墩樹			
red alum	jiang fan	絳礬			
iron sulphate					
red cornetfish	shaoyu	鮓魚			
rosewater	qiangwei shui	薔薇水			
saffron	yujinxiang	鬱金香		Crocus sativus L.	
sal ammoniac	naosha	硃砂			

Persian medicine into China

Common name	Pinyin	Chinese	Sanskrit	Scientific	Persian
shellac	zikuang zimaο	紫礦 紫鈎			
sherbet 'slake-thirst drink'	shelibie shelibai jiekeshui	舍利別 攝里白 解渴水			šarba, šarbat
silver shards	yingxie	銀屑			
slender Dutchman's pipe root	qingmu	青木		Aristolochiae debilis Siebold & Zucc.	
spinach, Persian greens	bosi cai	波斯菜		Spinacia oleracea L.	
storax	su he(xiang)	蘇合(香)		Liquidambar orientalis Mill.	
oriental sweetgum					
sulphur imported by sea	boshang liuhuang	舶上硫磺			
sulphur ore	shiliu huang	石硫黃			
sweet almonds	piantao	扁桃		Semen Prunus persica L. Batsch	
sweet-dew peaches	ganlu tao	甘露桃			
sweetgum oil	anxixiang	安息香		<i>Styrax tonkinensis</i> Pierre Craib ex Hart.	
benzoin					
the <i>panniise</i> tree	panniise	槃努穡樹			
theriac	diyedia	底野迦			diryaq
true Persian indigo	zhen bosi qing dai	真波斯青黛			
true superior Persian brass with the hue of a horse tongue	zhen Bosi mashe se shang tou	真波斯馬舌色上鎰			
turmeric	yujin	鬱金		Curcuma longa L.	
white alum	baifan	白礬			
white lead powder	hufen wufeng duyao cao	胡粉 無風獨搖草			
yellow floriate ore	huang hua shi	黃花石			
yellow myrobalan decoction	hezi tang	訶子湯			
yellow/black/ chebulic myrobalan	helile	訶黎勒	haritāki	Terminalia chebula Retz.	
zinc oxide	toushi	鎰石			
tutty	(MC thuw dzyek)	朵梯牙			tutiyā
Persian chalcopyrite	duotiya Bosi toushi digeng	波斯鎰石 荻根		radix Triarrhena sacchariflora Maxim. Nakai	

## Notes

- 1 Translator's note: For the sake of simplicity, botanical names here refer to the most commonly used, or normative equivalences to the Chinese term. These are listed in the appendix. However, it should be noted that, even in contemporary use, there is a high degree of ambiguity – many Chinese medical plant terms cover multiple species, sometimes dozens, and there is currently no concise way to reference this. The recent volume by botanists Christine Leon and Lin Yulin, based on years of fieldwork, not only attends to Chinese medical functions of the plants, but the botanical variation and habits of substitution in Chinese markets (Leon and Lin 2017). Native Chinese systems of plant identification themselves varied across history (Métailie and Needham 2015). Historical substance and region names were subject to even more ambiguity and change. The term *Bosi* 波斯, for example, here translated ubiquitously as 'Persia', at times referred to a southeast Asian region of unsure identity (Laufer 1919: 486 ff.). While some scholars agree this refers to the thirteenth to sixteenth-century north Sumatran kingdom of Pasai, this cannot account for fifth-century Chinese references to a SE Asian region by the same name (Kotyk forthcoming). It is possible the term refers to colonies of Persian merchants in SE Asia. Thus when considering items like *Anxixiang* 安息香 (lit. Parthian aromatic), derived from the SE Asian species *Styrax tonkinensis* Craib ex Hartwich, we need to consider that these may have been products which came *through* Persia, but were not *from* Persia. For more detailed work on individual products, see the author's other works (Chen 2007, 2013, 2018). Useful sites for this work include the *Global Biodiversity Information Facility* <https://gbif.org>, Kew Gardens' *Medicinal Plant Name Services* <https://mpns.science.kew.org/mpns-portal/>, and *Zhongyi shijia* 中醫世家 <http://www.zysj.com.cn/zhongyaocai/index.html>.
- 2 The *qiyao* 七曜 literally refer to the sun, moon, Mercury, Venus, Jupiter, Mars and Saturn, but broadly refer to astronomy, and often astrology.
- 3 MC refers to Middle Chinese pronunciation. The reference used is from Baxter and Sagart (2014).
- 4 Genben shou yiqie youbu baiyi jiemo 根本說一切有部百一羯摩 (Skt. Mūlasarvāstivāda ekaśataka karman), CBETA, T. 1453, p. 478.a20.
- 5 CBETA, T54, no. 2128, p. 710, c8.
- 6 This item remains unidentified in recent scholarship. For variant names, see Santos (2010: 225–6).
- 7 *Zhonghua bencao* lists this as an alternate name for *suxinhua* 素馨花.
- 8 The Chenla kingdom controlled Indochina prior to the Khmer empire between 550–706 CE.
- 9 On this text, see the unpublished paper by F. Meyer, 'Synchrétisme médical en Haute-Asie d'après un texte Tibétain censé avoir été introduit de Chine au VIIIème siècle', and R. Yoeli-Tlalim (2012) 'Re-visiting 'Galen in Tibet'(1)', *Medical History*, 56.3: 355–65.
- 10 On this work, see Needham (1974: 163 f.) and Deshpande and Fan (2012).
- 11 Now lost, this work has been reconstructed in Shang Zhijun (1997).
- 12 The term *yi* in Li Miyi's name may mean medicine or doctor.
- 13 Translator's note: of unstable identity, this ore was named for its mixed yellow and black colouring, and probably contained various minerals composited over time. See Han Jishao (2011: 69).
- 14 Translator's note: not to be confused with other sweets and ices for which the names 'sherbet', 'sherbet' and 'sorbet' later came to be used in English.
- 15 Cf. Shi Guang (2016).

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