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1912) and *A Treatise on Pneumonic Plague* (Geneva, 1926). He worked for the Chinese government under the Kuomintang (Nationalist) Party until the mid-1930s, establishing the Harbin-based Manchurian Plague Prevention Service (1912), the Chinese Medical Association (1915), the Central Epidemic Bureau (1919) in Beijing, and the National Quarantine Service (1930), and ultimately worked as the Ministry of Health's chief technical expert (1930). He helped to establish seventeen hospitals, including the Peking (now Beijing) General Hospital, and succeeded somewhat in modernizing China's medical education and services. He also lent his expertise to the League of Nations.

When the Second Sino-Japanese War (1937–45) broke out, Wu decided to return to Malaya and leave his position as surgeon-general to the Republic of China's President, Chiang Kai-shek (1887–1975). He survived the Japanese occupation (1941–45) and for the next two decades ran a private practice at 12 Brewster Road, Ipoh. After the war, he was invited to enter politics as Malaya struggled for independence and also faced a Chinese-led communist insurgency. He declined and continued with his private practice, known as the doctor who dispensed free medical services to the deserving poor. At the age of eighty, he decided to retire and purchased a new house in Penang. Barely a week after moving in, he died.

### Visions and Ideals

Wu decried the materialism of private practitioners in Malaya and Singapore. Patients dissatisfied with their treatment changed doctors, and practitioners proceeded with treatment without bothering to consult their predecessor. He felt the ideal of family physicians, with long-standing relationships to their patients, was lacking. He envisaged a less complicated and more economical national health service, like that of Britain. In such a system doctors would have regular and sufficient earnings, reasonable working hours, and sabbaticals for study and travel. He described his utopian model in 'Prospects of Social Medicine in Malaya,' published in the *Medical Journal of Malaya* (1948): 'Medicine will be available to all . . . given by doctors of various nationalities to suit the particular type of people, so that the latter may learn how to keep themselves and their families well, to take the proper kind of food, to submit to regular health examination by specialists in their profession, to have defects . . . repaired before these become serious' (Wu, 1959, p. 577). His profile of an ideal medical doctor was one ' . . . keen to do [his] share of lecturing, treating patients, supervising laboratories, performing needed operations, none overworked or over-rich, proud of team work and anticipating the time when [he] may enjoy a holiday, and every five years undertake postgraduate studies in Europe or America with a view to becoming more efficient and useful to the community on [his] return' (Wu, 1959, p. 577).

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Ooi Keat Gin

**WU, YOUXING** 吳有性 (aka **WU, YOUKE** 吳有性) (b. Dongting mountain 又可, Wu county, Jiangsu Province, China, 1582; d. Wu county, Jiangsu Province, China, 1652), *Chinese medicine, epidemiology*.

Wu Youxing is respected among Chinese medical historians as a proto-epidemiologist whose contagionist epidemiology prefigured the germ theory of Koch and others. A Chinese contemporary of Thomas Sydenham (1624–89), Wu similarly wrote on epidemics, fevers, and specific remedies for specific diseases. He also argued for the use of purgatives such as saltpeter and rhubarb, placing him among his contemporaries in the 'Attack and Purge' (*gongxia pai* 攻下派) style of practice attributed to the twelfth-century physician Zhang Congzheng 張從正 (1156–1228). He later became known as the founder of the 'Warm Factor Epidemics' (*wenyi pai* 瘟疫派) medical current and as an influential author in the 'Warm Factor Disorders' (*wenbing xuepai* 溫病學派) current of medicine.

Scant biographical evidence, however, exists about his life. He did not receive a *jinshi* 'elevated scholar' or any other official degree. He published only the *Treatise on Warm Factor Epidemics* (*Wenyi lun* 瘟疫論, preface 1642, two volumes, with an appendix *buyi* 補遺, one volume). 'Warm factor' (*wen*) refers to both the perceived cause in Warm or Hot *qi* and the observed fevers of epidemics. The earliest biographical entry in a Wu county history (*Wumen bucheng*, 1803) simply states that he came from Dongting mountain village and wrote the *Treatise on Epidemics* in two volumes with an appendix. Besides the *Treatise on Epidemics*, from his lifetime there is only a stela that lists his name among benefactors commemorating the establishment in 1644 of the Temple of Pure Resolve (*Jing zhi an* 淨志庵). The stela remains in the ruins of the Temple of the Pond of Geese (*E tan miao* 淨志庵) in modern-day East Mountain, a village on the southeast side of Lake Tai about 100 kilometers southwest of Suzhou. An unofficial title as head patriarch (*zuzhang* 族長) follows his name and indicates that he represented the Wu lineage as a patron for the new temple.

From mid-August to mid-September of 1642, Wu Youxing wrote the preface to the *Treatise on Epidemics* in his *Dandan zhai* 淡淡齋 ('insipid studio'). *Dandan* literally means without flavor or tasteless. Wu may have chosen this studio name to suggest his book's central argument: the deadly

epidemics of 1641 that swept through Shandong and Hebei in the north to the lower Yangzi provinces in the south had an imperceptible, invisible, yet knowable cause. In classical Chinese medicine, epidemics arose from anomalies in the yearly cycle of six climatic configurations of *qi*: Wind, Cold, Summer Heat, Damp, Dry, and Fire. Wu used the occasion of the 1641–42 epidemics to criticize this configurationist conception of epidemics in favor of a new contagionist perspective. Instead of aberrant configurations of seasonal *qi* (*shiqi* 時氣), he posited formless, invisible, and imperceptible heterogeneous *qi* (*zaqi* 雜氣) as the cause of epidemics. For Wu, heterogeneous *qi*, or deviant *qi* (*liqi* 戾氣), caused the sore throats, fevers, diarrhea, poxes, boils, and rashes of epidemics and ordinary illnesses attributed to seasonal *qi*. Instead of entering through the pores, as did seasonal *qi*, deviant *qi* entered through the mouth and nose. He criticized other physicians for killing their patients with erroneous therapies from the 'Cold Damage' (*shanghan pai* 傷寒派) and 'Warming and Restorative' (*wenbu pai* 溫補派) currents of practice. Wu's conception of pathogenic *qi* challenged the convention of a universal correspondence among cosmic seasonal cycles, the human body, and illness.

In an 1870s report of the medical officers to the Chinese Imperial Maritime Customs service, even the British Surgeon-General, C. A. Gordon, noted Wu's understanding that 'the "poison" of epidemic fevers is taken in at the mouth and nostrils, and is communicable'. Although this new conception of invisible pathogenic *qi* resembled later Western medical concepts of microorganisms and germs, it nevertheless remained embedded in a cosmology in which all phenomena were manifestations of *qi*. Within Chinese medical history, however, Wu's contagionist challenge to traditional configurationist epidemiology represented an indigenous trend of medical skepticism two centuries before Western science compelled Chinese physicians to reevaluate their medical traditions according to imported standards.

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Marta E. Hanson

**WUCHERER, OTTO EDWARD HENRY** (b. Porto, Portugal, 7 July 1820; d. Salvador, Brazil, 7 May 1873), *tropical medicine, public health, helminthology*.

Wucherer was born in Portugal, the son of a German trader and a Dutch mother. Between 1828 and 1830 he lived with his family in the city of Salvador, an important commercial center, the port and capital of Bahia, a province in the northeastern part of what was then the Empire of Brazil (1822–1889). There were many slaves and Afro-descendants. He did his secondary studies in Hamburg (1831–35) and studied medicine at the University of Tübingen (1836–41) with Wilhelm Griesinger, who had a great and permanent influence on Wucherer's career. Wucherer's medical background was influenced by parasitology, by the laboratory medicine then emergent in Germany, and by the social medicine ideas of Rudolf Virchow. He started his professional life working as medical assistant at St Bartholomew's Hospital in London. He then practiced medicine in Lisbon, where his family lived, and went to Brazil in 1843. He worked in small towns in Bahia's inland regions, such as Nazaré and Cachoeira, the latter having a significant concentration of German citizens and an area of cigar manufacturing.

Wucherer settled in Salvador city in 1847, where he attended the German community as a physician and started an important trajectory in medicine and in research. He became the most outstanding and recognized representative of a group of Brazilian and foreign physicians who had settled in Bahia, and which from the 1860s onward, with no formal links to the Schools of Medicine of Bahia and Rio de Janeiro or with the medical establishment of the Empire, was dedicated to studies on the hygiene, anatomico-clinical manifestations, etiology, and parasitology of the tropical diseases that affected the Brazilian population. Wucherer was the most distinguished among the group of physicians who contributed to reformulating the model that had been accepted until then regarding the nosology and etiology of Brazilian diseases, to questioning the rudimentary background of local physicians, and to addressing the lack of European knowledge about public health problems in Brazil. An important characteristic of Wucherer's and his associates' trajectory was that their medical practices attended to the less privileged sectors of the population of Salvador, and not simply to the elites and immigrants' communities.

They developed original works that obtained an international audience, especially their discoveries related to ancylostomiasis, filariasis, and ainhum (a disease that affects black people and is characterized by the strangling of the smaller toe), thus contributing to the debate on the etiology

Tōken's eldest son, started the study of the Confucian classics; by age thirteen, he could compose prose in classical Chinese. Soon after this, he began studies with Yamawaki Harunaga, who quickly recognized Tōyō's promise. Harunaga was himself the son of a distinguished physician, Yamawaki Harunaka, who had treated the Empress Tōfuku during the previous century and consequently achieved renown. Harunaga, however, lacked a successor, and adopted Tōyō when he reached the age of twenty-two. In this way, Tōyō inherited one of Kyoto's most prestigious medical practices.

The Yamawaki family's medical practice had been based on the theories of Manase Dōsan and his successors, giving it a highly theoretical bent based on the metaphysics of the Chinese Song dynasty (960–1279) Confucian thought. Tōyō, however, had become intrigued by current ideas in Confucianism that emphasized reading the Chinese classics directly, without the interpretations of later thinkers. Soon after the death of his adoptive father, Tōyō started to study under Gotō Konzan (1659–1733), one of the fathers of the Kohōha, or 'Ancient Method School'. Like its contemporaries in Confucian philosophy, this school of medical thought also emphasized the interpretation of classical Chinese texts without the interpretative framework of later medical thinkers. Konzan advocated the close study of the *Shanghanlun* by Zhang Zhongjing (Jp. *Shōkanron* by Chō Chūkei, 196–220), and this work became an important influence on Tōyō's own approach to medicine.

However, it was in Tōyō's own reading of the ancient Chinese classics that he found inspiration for his greatest achievement. His perusal of the *Book of Rites* and the *Book of History*, among other ancient classics, led him to question the veracity of the Chinese traditional anatomy that depicted the human body as being made of up five organs (liver, heart, spleen, lungs, and kidneys) and six viscera (stomach, large intestine, small intestine, gall bladder, bladder, and 'triple burner' or *sanshō*). Instead, he found reference to a nine-organ theory, which included the heart, lungs, liver, gall bladder, bladder, stomach, kidneys, spleen, and intestines; this scheme did not, in other words, differentiate between small and large intestines and dispensed with the abstract triple burner. Moreover, the Kohōha emphasized not only going back to the ancient classics, but also experimentation and verification of theory through empirical means.

Tōyō thus set out to substantiate the nine-organ theory of the body through dissections, but since human dissections were taboo at the time, he dissected river otters instead, based on a then-current assumption that the internal structure of its body was somehow identical to that of the human body. But Tōyō did not accept this assumption without qualification, and he pressed the authorities to allow him to dissect a human body. He succeeded in 1754, when he was allowed to dissect the corpse of a decapitated criminal in Kyoto. While he watched the body opened in

front of him, Tōyō had in hand both a traditional anatomy that illustrated the five-organ and six-viscera theory and an illustrated European anatomy text. Based on his observations, he concluded that the dissection clearly demonstrated the validity of the nine-organ theory and wrote the illustrated *Zōhi* [Record of the Organs] to record and explain his observations.

Although Tōyō did not succeed in making the nine-organ theory the accepted anatomical standard, he did start a trend in which physicians conducted a growing numbers of dissections. It was one of these subsequent dissections, conducted by a group led by the physician Sugita Genpaku (1733–1817) that in turn became the stimulus for the first translation of a European medical text into Japanese. In this way Tōyō indirectly contributed to the Japanese adoption of Western medical ideas from the late eighteenth century.

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William Johnston

**YE, GUI 叶桂** (aka **TIANSHI 天士, XIANGYAN 香巖, XIANGYAN 香岩, NANYANG XIANSHENG 南陽先生**) (b. Wu county, Suzhou, Jiangsu Province, China, 1667; d. Suzhou, China, 1746), *Chinese medicine*.

Ye Gui is one of the most famous clinicians of eighteenth-century Suzhou, in large part because works attributed to him focused on the vicissitudes of clinical practice and emphasized the individual physician's observations, experience, and flexibility. A collection of his medical case histories (*Linzheng zhinan yi'an* 臨證指南醫案, preface 1766), including an essay on febrile disorders (*Wen re lun* 溫熱論) in a later edition, remain as popular today in Chinese medical practice as they were when first posthumously published. Chinese physicians consider Ye to be one of the main innovators in etiology, diagnosis, and therapy in the Warm Factor Disorder (*wenbing xuepai* 溫病學派) current of medicine developed through the work of Wu Tang 吳塘 (1758–1836), Wang Shixiong 王士雄 (1808–90), and Zhang Nan 章楠 (fl. 1835) in the nineteenth century. Following the lead of predecessors such as Liu Wansu 劉完素 (1120–1200?), Zhu Zhenheng 朱震亨 (1281–1358), and Wu Youxing 吳有性 (1582–1652), Ye made further distinctions between Cold Damage and Warm Factor disorders. He focused on the hot and damp illnesses prevalent in Suzhou, advocated aromatic stimulants for epidemic fevers instead of conventional Cold Damage treatments, and argued that Warm Factor illnesses do not

follow the Six Warps (*liujing* 六經) stages of Cold Damage disorders. They instead transform following the Four Sectors (*sifen* 四分) division of the body from the exterior and more superficial Defensive (*wei* 偉) and (*qi* 氣) sectors to the relatively interior and more serious Constructive (*ying* 營), and Blood (*xue* 血) sectors of the body.

Ye was sufficiently famous as a physician during his life that one of the most prolific poets and literary critics in his region, Shen Deqian 沈德潛 (1673–1769), wrote the eulogy inscribed on his tombstone, which is the earliest and fullest account of Ye's genealogy, medical views, and reputation. The Ye family moved from She county in Anhui Province to Suzhou city in Wu county, possibly with Ye Gui's great-great-grandfather Ye Fengshan 葉封山 or his great-grandfather Ye Longshan 葉龍山 (also a physician), during the early seventeenth century. Planning to pursue a career in government, Ye Gui studied the classics from a tutor and medicine from his father Ye Chaocai 葉朝采 (d. 1679) until his father passed away unexpectedly when Ye was about twelve (thirteen *sui*) years old. To secure a livelihood he turned to medicine, studying first with one of his father's disciples and then allegedly working through another seventeen physicians until he turned eighteen. Following in his grandfather and father's path, Ye became the third generation in a new line of hereditary physicians in Suzhou.

Although a small cottage industry of over forty published texts attributed to Ye Gui developed after his death in 1746, no credible evidence indicates that he published even one medical text during his lifetime. Only two texts published while he lived printed his name on the title page. *Explanations of the Essentials of the 'Treatise on Materia Medica'* (*Bencao jing jie yao* 本草經解要, pr. 1724) lists Ye Gui as the author on the title page and in the two prefaces, but it is more likely that his disciple Wang Yuetian copied the text under Ye's tutelage and used his family's influence to publish it. As a senior disciple of the Suzhou physician Wang Zijie 王子接 (b. 1658) in the early 1730s, Ye collated the *Jiangxueyuan gufang xuan zhu* 絳雪園古方選注 [Crimson Snow Garden Annotations on a Selection of Ancient Formulas] (1732), which Wang Zijie annotated. About twenty years after Ye's death, two of his followers, Hua Nantian 華南田 (1697–1773) and Li Guohua 李國華 (n.d.), compiled the collection of his case records—*Linzheng zhinan yi'an* 臨證指南醫案 (1764) [Medical Case Records as a Guide to Clinical Practice]—that made him famous. Later collections of his medical case histories include the *Zhongfutang yi'an* 種福堂醫案 [Medical Cases of the Hall of Cultivated Fortune] and the *Ye an cunzhen* 葉案存真 [Preserved Genuine Cases of Ye]. These medical case histories have inspired generations of Chinese physicians ever since with their candor, clarity, and range.

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Marta E. Hanson

**YEN, JAMES YANG-CH'U** (b. Bazhou, Sichuan Province, China, 26 October 1893; d. New York, New York, USA, 17 January 1990), *public health*.

'Jimmy' Yen was born into a gentry family. He was educated in missionary schools, briefly attended Hong Kong University, and transferred to Yale University in 1916. There he met his future wife, Alice Huie (Xu), whom he married in 1921. On graduation in June 1918, Yen went to France under the auspices of the International Committee of the YMCA to assist with the thousands of coolies in the Chinese Labor Corps recruited by the Allies in World War I. His experiences with these illiterate workers inspired him to develop a simplified system for teaching and writing Chinese. He started with the most basic 1,000 characters and then provided reading materials that used only those.

After the war, Yen returned to Beijing and then went to work in a district of Hebei Province called Dingxian (Ting-hsien). This was to be a 'social laboratory' for what came to be known as the Mass Education Movement (*Zhonghua pingmin jiaoyu cijin hui*), founded by Yen in 1923. Dingxian had a population of about 400,000, or about one-thousandth of the population of China at that time. Yen and his colleagues first set up a school, then started to teach agriculture and public health. They received assistance in the United States from the Milbank Memorial Fund, the Rockefeller Foundation, and the YMCA. Their public

for Military Medicine at the Reich Research Council and simultaneously joined the Academy for Military Medicine, linked closely to the military health inspection (Heeressanitätsinspektion). During World War II Zeiss functioned as consultant hygienist in Bulgaria and Greece. Shortly after the war, on 2 November 1945, he was arrested in the Russian part of Berlin. On 10 July 1948 he was accused of espionage against the Soviet Union and was sentenced to twenty-five years of imprisonment. When Zeiss died on 31 March 1949 at Vladimir, USSR, after a chronic infection, he was suffering severely from Parkinson's disease.

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Wolfgang U. Eckart

**ZHANG, JIEBIN 張介賓 (aka HUIQING 會卿, JINGYUE 景岳, TONG 通)** (b. Shaoxing, Shanyin county, Zhejiang Province, China, 1563; d. Shaoxing, 1640), *Chinese medicine*.

Originally from the southwestern province of Sichuan, Zhang Jiebin's family moved to modern-day Shaoxing in Zhejiang Province, where the Ming government posted his father as a Guard Commander. When he was thirteen *sui* (about twelve), he went to Beijing with his father, who was on official business as an advisor to a high military official. During the late 1570s in Beijing, Zhang began studying medicine with a physician named Jin Ying 金英 (Mengshi 夢石), who advocated restorative formulas for strengthening one's constitutional *qi* (*dabu yuanqi* 大補元氣). Zhang's later emphasis on warming and restorative formulas (*wenbu* 溫補), especially for the kidneys, may well have formed during his early tutelage with Dr Jin.

Following a rather peripatetic life of traveling between Beijing and northeastern China to Korea as well as practicing medicine in Beijing, Zhang moved back to Shaoxing in 1620 (in his late 50s); there he lived his remaining twenty years. In 1624 the Suzhou publisher Tong Yongquan 童湧泉 (c. early seventeenth century) helped Zhang publish his first medical book, an innovative reorganization of chapters in the *Inner Canon of the Yellow Emperor: Basic Questions and Divine Pivot* (c. first century BCE) titled simply the *Leijing* 類經 [Classified Canon]. In the same year, he published two related volumes: the *Leijing fuyi* 類經附翼 [Supplementary Commentary of the Classified Canon] and the *Leijing tuyi* 類經圖翼 [Illustrated Commentary of the Classified Canon]. His commentary on the *Inner Canon* differed from all previous scholarship in that he reorganized the canon along more practical lines and

went beyond commentary and diagrams to refine, change, and develop its myriad concepts. In the earliest biography of Zhang Jiebin, the prolific early-Qing scholar Huang Zongxi 黃宗羲 (1610–95) commented on how popular and erudite the *Classified Canon* was during his time. Zhang wrote two other medical texts, both posthumously published: a comprehensive medical treatise on all diseases titled the *Jingyue quanshu* 景岳全書 [Complete Works of Jingyue] (1700) and a collection of essays on various medical issues titled the *Record of Zhiyi lu* 質疑錄 [(Things) Called into Question] (1688).

Zhang reorganized and created diagrams for the *Inner Canon* in response to a broader medical debate on how limited the *Inner Canon* was for dealing with new contemporary illnesses and regional variations in morbidity. Contemporary scholarship in Han learning that sought to recover the authentic texts of Chinese antiquity from later corruptions inspired some Ming physicians to apply philological methods to separate the authentic Han passages of the *Inner Canon* from later interpolations and revisions. Zhang Jiebin supported the relevance of the *Inner Canon* for present medical practice, yet criticized physicians who oversimplified it and promoted their own biased perspectives. In contrast to his literal-minded contemporaries, who sought a solution to the controversy through recovery of the original passages and structure of the *Inner Canon*, however, Zhang thought that revering the *Inner Canon* was not the same as rigidly adhering to it. He instead reorganized, refined, developed, and diagrammed complex concepts in the *Inner Canon* to facilitate its practical use. He had a ready audience among physicians writing on the *Inner Canon* in south China and literate men purchasing texts on the 'medical canons' (*yijing* 醫經). The emphasis among physicians in the urban centers of Hangzhou and Shaoxing of Zhejiang province during the late Ming was on the classical medical canons of antiquity, especially the *Inner Canon*. Zhejiang province, where Zhang grew up and later returned to practice medicine, was the regional focus of a surge in publications on the *Inner Canon*. Zhang's text was just one of twenty-three new Ming medical texts on the *Inner Canon* that other Zhejiang physicians had published. Well ensconced in the Zhejiang medical community, Zhang Jiebin was a key player in these contemporary debates on the *Inner Canon* and an influential author in the attempt among physicians in his region to recast the *Inner Canon* for the current age.

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**ZHANG, YUANSU 張元素 (aka JIEGU 潔古)** (b. Yishui, Hebei Province, China, 1151; d. ?, 1234), *Chinese medicine, pharmacology*.

Zhang Yuansu was born in turbulent times, as the Jin 金 armies invaded the north of China in 1115 and drove the reigning Song court to the south, where they established their new capital in Hangzhou. Despite having read the Confucian classics at an early age, at twenty-seven he failed the Jinshi 進士 [presented scholar] degree, which would have allowed him entry to the civil service. He did not pursue an official career but focused on studying medicine.

According to medieval and contemporary medical writers, Zhang is credited with important medical innovations during the Song dynasty. He brought the 'empirical' traditions of pharmacotherapy together with the medicine of systematic correspondence and channel theory conceived in the context of acupuncture a millennium before his time. However, his innovations should be understood in the context of a universal effort for the integration of Buddhist and Daoist thinking into the reconfiguration of Confucianism, known as the Neoconfucian movement in the West.

New technologies made possible the printing of 'corrected versions' of canonical texts in large editions. The first two emperors of the Song dynasty actively promoted the compilation of collections of formulas, and official sponsorship of big collections characterized the period. An enhanced level of quality control was met by the introduction of pictures of plants into pharmacological works, thereby fulfilling the standards of a new practical rationalism.

In this spirit Zhang created new formulas on the basis of classical prescriptions, e.g., *Jia jian baitong tang* 加減白通湯 [Scallion Yang-Freeing Variant Decoction] based on the classical *Baitong tang* 白通湯 [Scallion Yang-Freeing Decoction] and *Lizhong tang* 理中湯 [Center-Rectifying Decoction]. His innovative prescriptions followed a system he had devised to categorize herbs according to the Five Agents, describing how each herb had an affinity to, and could exert a strong influ-

ence on, a specific acupuncture channel. He also established the concept of the so-called shiyao 使藥 [messenger herb], an ingredient in a complex prescription that could help introduce other herbs into a channel (e.g., *notopterygii rhizoma* for the hand and foot taiyang 手足太陽 channel). He believed that a herb had a very specific affinity to a channel and could also replenish or drain different organs; thus a sour herb such as *paeonia radix alba* had an astringent effect on the lung but also drained the liver in conditions of excess.

The *Yixue qi yuan* 醫學起源 [The source of medicine], Zhang's magnum opus of 1186, summarized his theory of medicine in three chapters: the first contained a theoretical treatise on the Five Agents and the six *qi*; the second was a commentary on the *Huangdi Neijing* 黃帝內經 [Yellow Emperor's Inner Canon]; the third a systematization of materia medica. Forty-three formulas are traditional, and thirty-eight are prescriptions composed by Zhang himself or by his teacher Liu Wansu 劉完素 (1110 or 1120–1200), who is known as the founder of the *hanliang xuepai* 寒涼學派 [cooling school].

Among the eminent physicians of the *Yishui xuepai* 易水學派 [the school of medical thought named after Zhang Yuansu's birthplace] the outstanding student Li Gao 李杲 (1180–1251/2) created an influential Yishui tradition, the *piwei xuepai* 脾胃學派 [Spleen-stomach-school], his *leitmotif* being, 'The inner damage of spleen and stomach is the cause of all [kinds of] diseases.'

Taking into account the political situation in which Zhang formulated his integrated theories of pharmacology, his viewpoint can be interpreted as a stand for political unity faced with the threat of the dissolution of the empire.

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**ZHU, LIAN 朱琏** (b. Liyang, Jiangsu, China, 1909; d. Nanning, Guangxi, China 18 May 1978), *acupuncture, public health*.

Zhu Lian was a doctor trained in Western medicine who joined the Chinese Communist Party in 1935 and served the Party as deputy leader of the General Health Department of the 129th Division of the Eighth Route Army (八路军一二九师卫生部). During the time of Yan'an (1935–47), Zhu Lian served as deputy director of the Yan'an China Medical University (延安中国医科大学), head of the General Health Department outpatient section of the