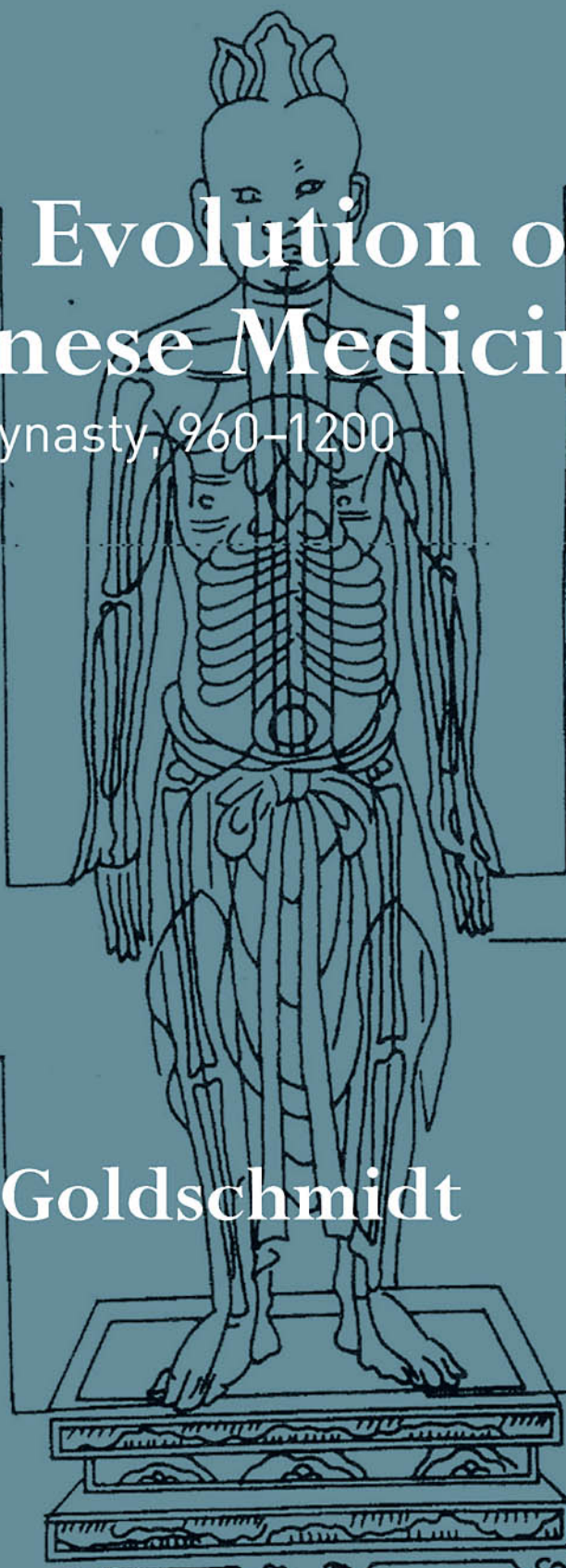


The Evolution of Chinese Medicine

Song Dynasty, 960-1200



手厥阴心包经起于
中冲穴终于天池穴

手少阴心经起于
少冲穴终于极泉穴

足少阴肾经起于
涌泉穴终于腓府穴

手太阳肺经起于
少商穴终于中府穴

足阳明胃经起于
厉兑穴终于头维穴

Asaf Goldschmidt

The Evolution of Chinese Medicine

The history of Chinese medicine hinges on three major turning points: the formation of canonical theory in the Han dynasty; the systematization of medicine via the integration of earlier medical theories and practices in the Song dynasty; and the impact of Western medicine from the nineteenth century onwards. This book offers a comprehensive overview of the crucial second stage in the evolution of Chinese medicine by examining the changes in Chinese medicine during the pivotal era of the Song dynasty.

Scholars often characterize the Song era as a time of change in every aspect of political, social, intellectual or economic life. This book contextualizes changes in medicine and medical practice within the wider scope of these transformations. More specifically this book focuses on three narratives of change in medicine:

- the emperors' personal interest in medicine elevated its status in the eyes of the elite, leading to an increased involvement of scholar-officials in shaping medicine;
- government officials systematically revised, printed, and promulgated earlier heterogeneous medical manuscripts belonging to various traditions. Subsequently, they included them in the curriculum of the newly established medical education system, thereby setting new imperial standard for medical knowledge;
- the government established an Imperial Pharmacy and other unique imperially-sponsored medical institutions to handle public health and epidemics.

The second part of the book delineates the consequent integration of earlier medical doctrines and practices into a systematic comprehensive medicine.

As the first book to study the transformation medicine underwent during the Song period this volume will appeal to sinologists and historians of medicine alike.

Asaf Goldschmidt is Senior Lecturer in the Department of East Asian Studies at Tel Aviv University, Israel.

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Introduction

Chinese medicine at the end of the twelfth century was strikingly different from Chinese medicine of the late tenth century. During the intervening two centuries, a profound transformation had reshaped medical theory, medical practice, and even the status of medicine. Some aspects of this sea of change are obvious to the modern observer. For example, during this period, the number of medical books on record increased greatly.¹ Technological advances in printing account for some of this increase; the rest should be attributed to a growing interest in medicine among emperors and the elite, which sponsored projects of book collection, revision, and printing during the Northern Song dynasty. Another aspect, contributing to the increase in the number of publications, was the revival of ancient medical theories, doctrines, and associated practices that had fallen out of use since the third century CE. The availability of these newly reprinted classics created a need to explain them on the one hand and tie them to contemporary medical practice on the other. How did medicine become a field of interest among the literate elite? Why did these doctrines reappear during the Northern Song? Since China faced major interpenetrating changes in culture, society, and environment during this period, these questions call for a more detailed multi-dimensional analysis.

Another oft-noted change is that the number of drugs recorded in materia medica literature (*bencao* 本草) doubled during the Northern Song dynasty. The *Tang Materia Medica* (*Tang benco* 唐本草, also known as the *Newly Revised Materia Medica – Xinxiu bencao* 新修本草, compiled in 659 CE) recorded 850 drugs, whereas the *Zhenghe Reign Newly Revised Materia Medica for Urgent Use, Classified and Verified from the Classics and Histories* (*Zhenghe xinxiu jing shi zhenglei beiyong bencao* 政和新修經史證類備用本草, compiled in 1116) recorded 1,748 drugs.² Expansion in trade, both local and international, can account only for a small portion of the increase. What then caused Northern Song officials and physicians to record twice as many drugs as before in an official materia medica collection? This expansion is tied to a demographic shift to South China that confronted physicians with a new epidemiological frontier. This shift underlies a series of changes in medical theory and practice including drug therapy.

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A final sample change – though not as immediately evident as the previous two but nonetheless equally important – concerns one method of clinical treatment – medicinal ‘formulas’.³ Formulas, which are the most potent and widely used treatment in Chinese medicine, transformed during the Song dynasty. Not only the formula’s components changed, but also the component’s dosages and their hierarchy within the formula changed during this era.

During the late 1970s Miyashita Saburo analyzed the recommended treatment for selected groups of Chinese equivalents of Western disease categories, such as malaria, jaundice, goiter, diabetes mellitus, dysentery, insanity, and even the common cold.⁴ For each disease he compared the recommended medicinal herbal formulas as listed in a number of representative formularies dating from the third to the nineteenth century. He paid special attention to the ingredients of each formula, the ingredients’ hierarchy, and their respective dosage.

Miyashita’s findings are quite telling. He discovered that the medications prescribed for the various disorders changed only *once* in the course of *sixteen* centuries. Both the ingredients and dosages of the formulas remained almost unchanged from the earliest extant formularies until those of the twelfth century. Then, for each disorder he examined, the formulas’ constituents, the dosages, and the internal hierarchy of the ingredients all underwent significant change. Subsequently, the formulas remained, once again, almost unchanged from the thirteenth century through to the most recent formularies.

The above three sample changes are representatives of a profound transformation in medicine that took place during the Northern Song dynasty – a transformation in medical discourse, theory, and practice. Furthermore, medicine was not unique. Other fields, such as mathematics and architecture, underwent similar transformations during the Northern Song dynasty. The renewed interest in ancient classical knowledge, the critical evaluation and standardization of this knowledge, and the critical integration of old and new are all characteristics of the Northern Song dynasty. We have to ask what happened during the Northern Song that catalyzed such a unique and profound rupture in traditional medical practices. In other words, what transpired during the Northern Song dynasty that so radically transformed the field of medicine? I claim that only a multi-tiered cultural manifold approach can begin to explain this transformation.⁵

It was during the Song that all the intellectual habits of what is now thought of as “traditional Chinese medicine” assumed their mature form. Song medical officials produced the definitive version of ancient canonical texts. Song physicians expanded pharmacological healing by basing it on classical cosmological and physiological doctrines similar to the older traditions of acu-moxa. Lastly, they created new models of medical legitimacy based on the scholarly study of medical classics. During the preceding Tang dynasty, *yi* 醫 (“medicine”) was but one of many healing techniques and certainly not a prominent one. During the Northern Song *yi* (“medicine”) took center stage, becoming the focus of political, intellectual, and professional efforts to raise

the status of medicine and doctors and to expand their therapeutic authority. Previously a lowly craft, medicine now became a leading arena for scholarly inquiry and an important tool of benevolent government. While scholars have caught many glimpses of the general outline of these trends, until now there has been no systematic study of their dimensions, causes, and ramifications.

In this study I describe and analyze the transformations that occurred in medical theory and practice during the Northern Song dynasty and the following decades. My goal is to analyze how the major changes in the state, the society, and the environment – such as changes in the civil service and governmental structure, changes in demography, and changes in economy and commerce – played part in the transformation of medicine.

I claim that several interrelated and interpenetrated factors are implicated. First, imperial interest – extending even to personal involvement of emperors in medical theory and practice – led to a rise in the status of medicine and subsequently to the resurrection of ancient medical knowledge. This involvement also gave rise to imperially led projects of collecting medical books and standardizing medical knowledge. Second, the new elite during the Song, the literati scholar-officials who attained their status by successfully passing the imperial civil service examinations, saw in medicine an instrument or a model for managing the state. They began by promoting medical education and examinations, soon leading to the establishment of a medical education and examination system. The scholar-officials' "medical activism" also manifested in establishing an array of imperial offices "to benefit the people" such as an imperial pharmacy, public hospitals, and paupers' cemeteries. Third, social, economic, and demographic changes in Song China created a new epidemiological "frontier" that compelled the imperial government to provide relief. Many imperial officials, including Song emperors themselves, turned to the "lost" medical classics in search of answers to the new medical and public health challenges. Fourth, once the government published newly revived and revised medical texts, literati and physicians alike critically evaluated this ancient knowledge leading them to rethink and reshape medical theory and practice.

This study will argue that these changes were triggered by personal interest in medicine by the Northern Song emperors, by an ecological change that brought about a wave of epidemics, and by the unique new scholar-officials who believed that they could improve their surrounding by institutional action.

Setting the stage: the Northern Song context

Before we discuss changes in medicine *per se*, we need to overview the broader social and environmental context of the Northern Song era. This was a time of great changes, as Jacques Gernet described it:

There is not a single sector of political, social, or economic life in the eleventh to thirteenth centuries which does not show evidence of radical

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change in comparison with earlier ages. It is not simply a matter of a change in scale (increase in population, general expansion of production, development of internal and external trade) but of a change of character. Political habits, society, the relations between classes, the armies, the relations between town and country, and economic patterns are quite different from what they had been in the aristocratic, still half-medieval Tang Empire. A new world had been born whose basic characteristics are already those of the China of modern times.⁶

One of the most striking features of Song China was the sharp increase in population. Between the eighth and eleventh centuries, China's population nearly doubled. At the end of the Northern Song, it stood at over 100 million people, having peaked at approximately 50 to 60 million during the preceding Tang dynasty. This demographic explosion was not only a phenomenon of magnitude but also of location. During the Northern Song, the main concentration of China's population shifted from the North – the traditional heartland of Chinese civilization – to the South, where, by the end of the Northern Song period, 1102 CE to be specific, approximately 67 per cent of the population lived.⁷ In other words, the population of South China at the end of the Northern Song dynasty eclipsed in number that of the Tang dynasty. These changes in population size and concentration created a new epidemiological frontier as the increasing Southern population encountered endemic southern diseases and epidemics. This change had direct bearing on medicine as shown in the epidemiological study presented in Chapter 3 of this book.

The changes in population began during the second half of the Tang and the Five Dynasties era in a process of migration from the north, torn by war and disorders, to the south. Rice cultivation, which provided abundance of food in the south, fueled the migration process further. In a sense, the rise of rice production laid the basis for a whole series of economic and social changes that shaped Chinese society in the Northern Song and after.⁸ The most important change probably was the shift of the economic center of vitality to the South. It should be noted that the term “South China” itself was changed. Prior to the Song, the population in the South concentrated predominantly in the lower Yangzi valley. During the eleventh century, the “South” extended to much further regions covering Fujian, Guangdong, Jiangxi, and Hunan.

The concentration of population and economic strength away from the political center of gravity stimulated large-scale, long-distance trade and the rise of the first large-scale cities of a nonpolitical character. The growth of commerce affected the social distribution of wealth, which in turn changed the avenues of access to power and influence. With the emergence of a new and relatively tolerant attitude toward trade and merchants, commercially generated wealth became a legitimate means of access to education, which in turn enabled success in civil service examinations and admittance to official positions. The social mobility, which this change engendered, served

to reinforce the linkage between government and society and consequently shaped imperial policy.⁹ This change provides the background for the evident phenomenon of scholar-officials focusing on medical institutions to promote the health of the people.

During the Song we see a peak in another transformation that began during the middle to late Tang dynasty. The older system of government-controlled markets and state-regulated trade in the capital and in larger population centers slowly gave way to the growing importance of a private commercial tax-base for state revenues. Because the new capital was far from the economic center in the Yangzi delta, taxes in the form of goods had to be shipped from far away. Specialized economic functions replaced self-sufficiency and the market transformed from regional trade to national. As commerce expanded, cash became more important, and the government issued paper money for the first time. People got used to thinking of the value of goods and services in terms of money. By the mid-twelfth century, the periodic services required of commoners were largely transformed into monetary taxes, lowering the boundaries between classes. The state could thus weigh the cost of labor against that of goods, instead of having to make do with what was available in a given time and place.

The expansion of population and trade provoked major social change. Not only was there the unprecedented growth of cities, but there was also a proliferation of smaller “market-centers” throughout the countryside. G. W. Skinner has argued that the unprecedented level of urbanization reached in the Song was most likely not exceeded until the late nineteenth or early twentieth centuries.¹⁰ Shiba Yoshinobu, who offers an economic analysis of the process, has argued that the development of the cities and the market-centers was an orderly self-organized process resulting in hierarchical and differential urban centers graded by size and specific marketing functions.¹¹

The growing network of cities, countryside markets, and production centers, enabled secondary industries to spring up or, where already in existence, to grow enormously to serve the urban and the rural markets. Traditional industries such as silk, lacquer, and ceramics reached to peak levels of technical perfection. Heavy industry, especially iron production, grew astoundingly. Additionally, the iron industry during the Northern Song reached a level of sophistication, apparently unequalled in Europe before the seventeenth century.¹² During the Song we see for the first time the emergence of mass-production techniques and other evidence of incipient industrialization.

With the rise in demand for books, documents, paper money, and wrapping paper, paper-makers flourished. Advances in printing techniques, especially the introduction of movable type, enabled the reproduction and publication of books in greater quantities and at lower cost. Consequently, during the second half of the Northern Song we see, for the first time, the emergence of a true book industry. At first, most publications were government-sponsored reproductions of classical texts. Once private publishers established their business a great variety of books on topics such as agriculture, medicine,

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astronomy, divination, and geography, were written or reproduced on an unprecedented scale.¹³

Concurrent with these demographic and economic changes was the emergence of one of the most distinctive features of Chinese civilization. The scholar-official class, certified through competitive literary examinations, formed a meritocratic elite unlike that of any other major civilization before the nineteenth century. This new meritocratic elite differed from its predecessors in several aspects. The ancient aristocracy of “great clans” gave way to a much broader, more fluid class. The examination system, used only on a small scale in the Sui (589–618 CE) and the Tang (618–907 CE) dynasties, played a central role in the fashioning of this new elite. To prevent the domination of the government by military men from the old, aristocratic class, the early Song emperors greatly expanded the civil service examination and the government school systems.¹⁴ The number of those passing the highest examinations soon averaged four to five times the number during the Tang. The material covered in the generalist examinations consisted mostly of Confucian classics. The Song emperors’ ambitions stimulated a renaissance-like approach to all knowledge, from philosophy to the sciences and to medicine, which focused on revising and rethinking the classics.¹⁵ With the increasing social mobility and the prospects of becoming a civil servant, literacy during the Northern Song dynasty increased. Many of the new scholar-officials were interested in all sorts of practical affairs that well-born people in earlier times would have considered beneath them. Beside attaining a civil service position based on their merit and ability to study, this group of people, in the leisure time, indulged in amateur study of anything in the universe including technical and scientific matters that earlier were considered fit only for clerks and artisans.

The above changes are interrelated and influenced one another. For example, the population shift to the South along with its growing wealth gradually increased the proportion of southerners among those who successfully passed the civil service examinations. According to some scholars these radical transformations brought Song China to the verge of an industrial revolution.¹⁶ Regardless of where one stands on this well-worn counterfactual, there is no doubt that these transformations were the context in which medicine changed.

Medicine in China prior to the Song

Medicine in China throughout history, as in many other cultures, was composed of multitude medical practices along with varying genres of medical literature presenting different underlying medical doctrines. Some of the medical practices shared a doctrinal basis while others did not. Some targeted similar groups of patients while others treated only patients from a certain social or official status. I will sketch below a few of the historical circumstances of medicine prior to the Song.¹⁷

We have very limited sources regarding medicine in China during its early stages – the Shang (1600–1050 BCE) and Zhou (1050–256 BCE) dynasties. Surviving records attributed pain and diseases to an injury caused by discontent ancestors, spirits, or demons. These early records do not discuss or depict the body, its physiology, or pathology. It was not until the last decades of the Warring States (403–221 BCE) that we begin to find references to the body and its functions.¹⁸

During the early Han dynasty (206 BCE–220 CE) we find the first detailed references to the body and its functions. Han writers depicted the body, which was perceived as a microcosm of a larger cosmos, as composed of visceral systems of functions associated to and interconnected via circulation tracts. Han physicians believed that the body functioned analogically and in accordance to cosmological patterns and changes in the universe, such as changes in weather, that may cause illnesses. In other words, the body and the outside world functioned according to the same cosmological patterns and corresponded to one another.¹⁹ This perception of the body is further discussed below.

The cosmological perception of the body fell out of favor after the third century CE, following the collapse of the Han Empire and its central administrations. Thereafter, only a handful of physicians and scholars had access to relevant literature, which passed down only in few master-disciple lineages. During the era of disunity (220–589 CE), religious medicine and empirical proven-remedies medicine took center stage. Different and often incompatible perceptions of the body also became dominant. For example, one such perception can be found in sections of the Daoist religion, where the body is perceived as an image of the country's landscape or an image of social or religious bureaucracy of gods. Sickness is perceived as a failure to manage the body's energy and functions or as a moral failing of the patient. The treatment, in this case, was to enhance the body's vitality by exercises, meditations, and nutrition, all attaining the unification with the Dao or the way.²⁰ The unification of China by the Sui dynasty and the following Tang dynasty did not radically change the medical scene. Even though some of the Han-dynasty's texts were revised during the Tang, their impact was limited due to the fact that they had only a very limited readership.²¹

The goal of every physician is to cure his patients, but first he has to find what is wrong with them. Physicians often begin by examining their patients for noticeable symptoms. Some stop here and prescribe the treatment according to the observed symptoms. Others, according to surviving medical documents, group these symptoms under distinct categories – drawing on their understanding of the body's physiology and pathology, and finally prescribe the treatment regimen. Different medical systems offer physicians different classification strategies to categorize the plethora of existing diseases and symptoms – to separate the “signal” from the “noise.” In modern medicine, physicians distinguish the ideas of symptom, syndrome, and disease. In Chinese medicine physicians had used, and still do, similar terms for

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symptom (*hou* 候 and *zheng* 症) and disorder or disease (*bing* 病 or *ji* 疾, respectively).²² Nevertheless, in traditional China we can roughly divide physicians according to two approaches – symptom-centered and patient-centered. The first needs no further elaboration as the healer attempted to cure or alleviate the patient’s symptoms. The second, however, attempted to formulate a pattern of symptoms to differentiate the underlying disorder as it is manifested in a particular patient.

Above I briefly described some ideas about the body and medical practices before the Song dynasty, on the basis of the diverse pre-Song sources. During the Northern Song dynasty, with the advancements in printing technology, textual knowledge became widespread as never before, catalyzing changes in medicine. In order to simplify the discussion of changes in medicine during the Song, acknowledging the obvious and unavoidable risk of oversimplification, I will classify written medical genres that existed prior to the Song into three broad and relatively distinct groups. The largest and most inclusive genre of medical literature is the “Prescription Medicine” or symptom-complex medicine. This body of literature defined disorder based on its combination of symptoms. It consisted predominantly of texts delineating formulas, either made of drugs or points on the body to be stimulated, designed to treat these disorders. The second literary genre I term “Classical Medicine” or patient-centered medicine. This genre defined disorder as a whole-body dysfunction or an unbalanced body state, in which symptoms are indicators but not the disorder itself. Therapy was designed to correct the dynamic imbalance and restore normal body functions. The last genre is Cold Damage Disorders, which was much narrower in scope – dealing only with one type of disorder – and not as prevalent as the other two. This genre of medical literature attempted, in a limited fashion and over a limited time frame, to integrate the other two genre of medicine into a new one.

Classical Medicine

Classical Medicine – a refined, cosmological, doctrine-laden, patient-centered medicine – evolved during the last two centuries BCE. It is represented by the medical canons of the Han dynasty (206 BCE–220 CE), especially the *Yellow Emperor’s Inner Canon* (*Huangdi neijing* 黃帝內經, in short: *Inner Canon*) and the *Yellow Emperor’s Canon of Eighty-one Problems* (*Huangdi bashiyi nanjing* 黃帝八十一難經, in short: *Canon of Problems*). This medical genre or approach explained the working of the human body in terms of concepts derived from Warring States and Han dynasty cosmological doctrines, namely Microcosm-macrocosm, Yin-yang 陰陽, and Five Phases (*wuxing* 五行). Classical Medicine was also influenced by the prevailing philosophical tradition of that era, Confucianism.²³

According to Classical Medicine, much in line with traditional Chinese cosmology, opposing yet mutually dependent forces, conceptualized under

the categories of Yin and Yang, animated the body. Integrated into this two-part schema was another web of relations, articulated in terms of Five Phases – Wood, Fire, Earth, Metal, and Water, which engendered and checked one another in specified ways. When applied to medicine, these “systems of correspondence” provided an intellectual framework for understanding human growth, generation, physiology, pathology, and decay. These systems of correspondence also explained how the different visceral systems of functions (*zangfu* 臟腑) and vital essences/fluids (not necessarily liquids) of the human body (especially *qi* 氣 and *xue* 血) interacted with one another, and how the outside environment, as well as its changes, affected human health and illness.²⁴

The canons of Classical Medicine describe the body as a balanced, dynamic system while disease is an imbalance in that system. The body, according to Classical Medicine, is composed of visceral systems of functions. Most of these ensembles of functions were associated with and named after viscera but with little reference to anatomy.²⁵ Circulation tracts (*jingluo* 經絡) interconnect the system of functions and traverse the body connecting them to the limbs and to the head. *Qi* and *xue* flow within these tracts enabling the normal function of the body. Symptoms are merely an indication of an existing imbalance in the body – that is, in the visceral systems of functions. They are not unique to the disorder but only a manifestation of it. In this sense Classical Medicine is similar to the humoral medicine of pre-modern Europe. This patient-centered approach aimed to classify symptoms into general categories of imbalance, or ‘manifestation types’ (*zheng* 證). The manifestation types, the abstract schematic characterizations of the patient’s condition, determine the treatment strategies hence translating many symptoms into a small number of dynamic categories. This process is termed “manifestation type determination” (*bian zheng* 辯證).²⁶

The preferred treatment technique of Classical Medicine was acu-moxa therapy (*zhenjiu* 針灸). Acu-moxa is a general term encompassing various clinical techniques all designed to stimulate acu-points located on the body along the circulation tracts in order to either alleviate local symptoms or, more generally, to affect the visceral system of functions and treat the underlying imbalance causing the symptoms. Acupuncture and moxibustion are the most popular but not the only techniques in this therapeutic approach. Acupuncture (*zhen* 針/鍼) is based on inserting needles of various gauges and lengths into the skin at specific acu-points. Moxibustion (*jiu* 灸 or *ai* 艾) is based on burning tinder made of Chinese mugwort (*Artemisia argyi* or *Artemisia vulgaris*) next to a locus or on it.²⁷

The canons of Classical Medicine, including those discussing acu-moxa therapy, were written during the Han dynasty. In the centuries following the fall of the Han, only a handful of physicians read these canons and were aware of the doctrinal system delineated in them. Although, the *Inner Canon* was revised during the Tang dynasty, its circulation was limited.

Prescription Medicine

Prescription Medicine, a pragmatic symptom-centered disease-specific medicine, is an umbrella term embracing diverse medical literature. The two predominant genres of this broad category, for our purpose, are materia medica collections (*bencao* 本草) and formularies (*fangshu* 方書). The common denominator for this genre is the application of a variety of treatments to alleviate the exhibited symptoms without reference to classical doctrines or for correcting the imbalance causing them. The texts discuss treatments such as formulas (*fang* 方), single drugs (*yao* 藥), and even stimulation of a pre-designated set of points on the body to treat disorder based on visible symptoms.²⁸ Some of these texts even recommend other therapies such as prayer, amulets, or rituals.

Prescription Medicine existed in China from the dawn of culture. The first textual evidence we have dates back to the third century BCE.²⁹ Over the centuries, this genre evolved by drawing mainly from the accumulated experience of practitioners and common people. During the Han dynasty this medical approach functioned side by side with the patient-centered Classical Medicine. Following the disintegration of the Later Han dynasty (25–220 CE), it became predominant. Accordingly, the literature we find is abundant and diverse. During the centuries that followed the Han this umbrella term includes Daoist, Buddhist, and other miscellaneous literature discussing medicine and medical treatment.

Cold Damage Disorders

The third genre of medical literature actually concentrates on only one type of disorder originally discussed in the *Inner Canon*; namely “Cold Damage” (*shang han* 傷寒) disorders. Cold Damage refers to both a category of disorders and to a specific disorder caused by cold factor (*han* 寒). The particular disorder Cold Damage, in its early stages, is defined by a vague group of symptoms that may correspond to anything from common cold to typhoid, if we use Western terminology.

The general category of Cold Damage Disorders can be defined as a group of diseases that manifest acute symptoms at their onset with hot sensations (*re* 熱) being the prominent symptom. If not treated, this type of disorder could eventually lead to the death of the patient. In Western medical terms, Cold Damage Disorders (which have nothing to do with chilly temperature or cold climate) correspond to certain exogenous, acute infectious febrile disorders. Epidemics and highly contagious diseases are also included in this category. Since this group of diseases always impose a burden on governments and physicians alike, it is clear why Cold Damage Disorders occupied a prominent position in Chinese medicine. Cold Damage Disorders draw its doctrinal basis from one chapter in the *Inner Canon*, but its theoretical development remains only implicit in the canon. The main

therapeutic technique in Cold Damage Disorders is a formula composed of several drugs.³⁰

The origin of the Cold Damage doctrine dates to the Later Han dynasty. Its basic doctrines are presented in the *Treatise on Cold Damage and Miscellaneous Disorders* (*Shanghan zabing lun* 傷寒雜病論, in short, the *Treatise*). This work, compiled around 206 CE but not widely disseminated before the late eleventh century, is considered one of the classics of Chinese medicine. It should be noted, though, that during the third and fourth centuries it was not considered such an important work.

Studies on the history of medicine during the Song dynasty

Studies on the history of medicine during the Song dynasty were almost non-existent in Western languages until recent years. For example, in his history of medicine in China (1985), Paul Unschuld devotes a chapter to the Song dynasty in which he focuses on Neo-Confucianism with only a scanty discussion on its impact on medicine. According to his discussion in the chapter, the most important transformations in medicine occurred during the Jin-Yuan era (1115–1368) when the Four Masters of Medicine flourished, implying that medicine during the Northern Song did not experience major changes.³¹ In recent years a handful of scholars published works in Western languages discussing several aspects of medicine during the Northern Song, but most of them concentrate on a specific topic such as a certain drug, a certain doctrine, or the transformation in medicine during the transition from the Song dynasty to the Ming dynasty.³² The only study that tackles the Song dynasty as a whole is T. J. Hinrichs' recent PhD dissertation. In her study, she focuses on the interaction between government and local, mainly southern, customs of healing, disease perceptions, and local practices of dealing with disease, especially during times of epidemics.³³

In non-Western works, mostly Chinese, the literature discussing medicine during the Northern Song dynasty is more extensive. Here we find two types of study. The first is the general history of medicine that devote a chapter or two to the Song dynasty. These studies usually list the significant institutions related to medicine, name the important physicians, and list the noticeable texts. These works rarely attempt to explain the changes or contextualize them.³⁴ The second type of studies consist of articles that concentrate on specific changes in institutions or in texts related to medicine. For example, various authors discuss the contribution of the Bureau for Revising Medical Texts to the availability of medical books and medical knowledge.³⁵ Others discuss at length the Imperial Pharmacy: its establishment in 1076, its transformations, and the significance of it being the first government-sponsored pharmacy in the history of medicine.³⁶ Some studies focus on the Song medical education and its contribution to raising the status of medicine in the eyes of the elite.³⁷ Additional topics such as changes in materia medica collections have also been covered.³⁸

There are two works that deserve a closer look. The first, by Yan Shiyun whose title can be translated as “A Study on Skills and Thought of Song dynasty Physicians”, sounds very promising, as it claims to provide a study of Song dynasty medical thought.³⁹ The contents, however, live up only partially to the promise. This work provides the reader with many details on Song medicine, including the most noteworthy figures, books, and doctrines. But there is little beyond information; the analysis does not attempt to explain the changes in the doctrines and theories. The second study, by Chen Yuanpeng, whose title can be translated as “‘Elites who Esteemed Medicine’ and ‘Literati Physician’ in the Two Song Dynasties,” describes the elite’s growing interest in medicine and medical practices and analyzes the interactions between the Song elite and medicine.⁴⁰ Chen goes beyond presenting the elite perceptions of medicine and claims, building on Robert Hymes’ work on the physician’s status, that the rise in the status of medicine and physicians began during the Song.⁴¹

Traditionally, historians of Chinese medicine were, and some still are, concerned with documenting notions such as the achievements of great doctors, the contents of important canons, and the establishment of institutions. In contrast, recent studies are taking new approaches, seeking to understand Chinese medicine as a cultural product, shaped by constant negotiation between sufferers and healers, by demarcation of and negotiations among different groups of healers, and by adaptation of doctors to changing social, political, and economic environments.⁴²

Objectives of this study

Attempting to answer the questions raised at the beginning of this Introduction is a daunting task. How can we offer a causal explanation to multifold transformations embodying a much deeper change, especially Miyashita’s startling finding that Chinese medicine shifted only once in 1,600 years? Originally, this study began as an attempt to explain what brought about what I call the “Mayashita break.” Initially, the answer I came up with was a change in the patterns of epidemics that triggered a cascade of events. This answer, though important and significant in causing change as detailed in Chapter 3 of this book, seemed too simplistic. The continued pursuit of the topic brought me to the conclusion that only a multi-faceted analysis may come close to the answer.

This study presents an approach that may be classified as a generalist approach. In a recent commentary on the state of history of science, Robert Kohler suggests that we should focus on the process of knowledge making as means of providing a more general history of science.⁴³ My analysis attempts to follow this proposal, to delineate the process that created, by the end of the Northern Song dynasty, after amalgamating ancient and contemporary knowledge and practices, a much more comprehensive medicine. In this multi-tiered analysis of the changes in medicine, I show how both external and

internal factors influenced the development and change in medicine during the Northern Song dynasty. This study is not limited to only social, intellectual, institutional, or environmental analysis. In turn, it tries to weave these themes together to present a more complete depiction of the changes during this time frame.

Despite this tall order, this study is not without many limitations. First, it deals only with relatively well-documented aspect of medicine which concerns educated, literate physicians and scholar-officials who compiled or authored medical works. The reason for that is simple, most of the surviving literature concentrates on this cohort. Given the fact that we do not know enough on this medicine it is worth the effort. We should keep in mind that concentrating on popular healers could be speculative as the literature is limited. The surviving literature is confined, by and large, to official documents or documents by scholar-officials, which depict, arguably, a biased perspective of these healers. A second limitation of this study has to do with the source literature, as I rely mostly on official historical compilations, on imperial documents, and on medical books. This may create a bias in the data as the writers are mostly imperial officials or aspire to be ones. This limitation is true for most studies of this era since the number of private compilations by non-officials is limited. I point out this problem in the source material wherever necessary. A third limitation of this study arises from the fact that it is not concerned with patient's perceptions of medicine nor with some important changes in the field of non-government-sponsored private writing, the most important of which is the launching of specialized writing, as for example, pediatrics.⁴⁴ This topic deserves dedicated study.

In summary, this study provides a multi-faceted analysis of the changes in elite medicine within a number of contexts, to provide the reader with as broad a picture as possible of the transformations in medical theory and practice during the Northern Song dynasty and the factors that brought them about. In other words, below I narrate how external forces, such as the imperial government's policies, dissemination of knowledge, and environmental epidemiological changes, compelled physicians to adapt medical theory and practice to the changing frontiers of what they perceived to be reality. The result of this adaptation was a significant step toward the integration of three earlier medical genres or approaches into one comprehensive systematic medicine.

A bird's-eye-view of the study

This study claims that a number of factors contributed to the changes in medicine during the Northern Song dynasty. First, emperors' interest in medicine triggered the revision, printings, and promulgation of medical literature in unprecedented scope and variety. The imperial interest was followed by scholar-officials actively promoting medical policies including the establishment of medical education and examination systems as well as

charity and public health institutions. Second, a wave of epidemics and their probable southern origin triggered interest in an old and almost forgotten medical genre – Cold Damage Disorders. The government published three books on the topic creating interest in it. Lastly, the shift in population during the Song to South China created havoc in drug markets and a need for medications that treated southern disorders. Consequently, the government standardized information about drugs while the number of listed drugs nearly doubled. All these changes created a new medical environment in which medical treatises from different genres presented incompatible views of medicine, namely medical doctrines and practices. This compelled physicians to rethink the situation and to gradually bridge the gaps of incompatibility creating a new comprehensive systematic medicine by integrating ancient doctrines and practices. By the end of the process, during the last decades of the twelfth century, we find a medicine that resembles what is now thought of as “traditional Chinese medicine.”

Structure of the study

This study consists of six chapters. The first four analyze changes in medicine in light of broader changes during the Northern Song dynasty. The last two chapters concentrate on the consequences of the above changes: The integration of the doctrines of Classical Medicine into both the empirical and clinical knowledge of Prescription Medicine and the practices and doctrines of Cold Damage Disorders.

Chapter 1 analyzes how interest in medicine and even in medical practice among the Northern Song emperors elevated the status of medicine. Prior to the Northern Song, medicine was a lowly art, generally despised by the elite. Following the change of heart by the emperors, the government invested in revising and publishing medical literature belonging mostly to Classical Medicine. Additionally, the government commissioned a new treatise on acu-moxa therapy. This book, along with a life-size bronze model that depicted the acu-points and the circulation tracts, standardized the practice of acu-moxa therapy.

Chapter 2 discusses how the scholar-officials' interest in medicine impacted the field. Scholar-officials promoted policies that bureaucratized medicine. During the decades of the mid-eleventh century, the government established a medical education and examination system as means of disseminating medical knowledge and training “good doctors” if we borrow the term used by the official who initiated these reforms, Fan Zhongyan. By the last decades of the Northern Song, the government established medical institutions bearing on public health such as shelters for the poor, public hospitals, paupers' cemeteries, and even an imperial pharmacy (discussed in Chapter 4). Following the government's printing of the canons of Classical Medicine and their inclusion in the curriculum of the medical schools, this genre regained its prominence in medical discourse.

Chapter 3 follows the revival of a long-forgotten genre of medical literature – Cold Damage Disorders. The first part of the chapter consists of a historical survey of epidemics during the Northern Song. One conclusion from this survey is that a wave of epidemics struck the empire during the years 1045–1060. The government, in reaction to the epidemics, established a unique bureau to revise and print medical books. The plot takes an interesting twist due to personal knowledge of three of the most prominent editors with Cold Damage Disorders. The result was that out of the ten books this bureau published, three focused solely on Cold Damage Disorders and another three were linked, to a certain degree, to this medical genre.

Chapter 4 focuses on drug therapy. Drug therapy literature includes two genres, materia medica collections discussing the raw materials of drugs, and formularies discussing the combinations of simples to be applied in practice. This chapter concentrates on materia medica collections since they exhibit the most significant changes, namely that the number of listed drugs doubled. The trigger for this increase probably lies in the shift of population to the south and expanding trade that led to growth in the availability and variety of crude drugs. As medical authors compared ancient records with the newly available drugs, they began to standardize drug therapy. The second part of this chapter discusses a unique imperial institution – the first public pharmacy that produced and sold drugs, and later prepared compound prescriptions. The Imperial Pharmacy, which included dozens of branches at its peak, transformed the way physicians and patients obtained drugs and prescriptions.

Chapters 5 and 6 make the second part of this study, where I discuss the impact of the transformations delineated in the first four chapters on medicine. In Chapter 5 I analyze the impact of the revival of the literature discussing Cold Damage Disorders on physicians and on medicine. Physicians, due to the new epidemiological frontier created by the population shift to the south and by the epidemics, had to integrate the practices of Cold Damage Disorder doctrines discussed in the texts into their clinical practice. At first they settled for integration at the level of diagnosis and treatment. After a number of decades, the focus switched to bridging the doctrinal gap between Cold Damage Disorders and Classical Medicine.

Chapter 6 focuses on the integration of classical doctrines into drug therapy literature during the twelfth century. Medical practice up to the Song focused on prescribing the suitable medication to alleviate the exhibited symptoms with little regard to the underlying physiological and pathological conditions of the patient. This was at least in part due to the inaccessibility of the canons of Classical Medicine. The revival of the latter emphasized the doctrinal lacuna of drug therapy literature. This new environment created a need to rethink and reevaluate medical practice and its underlying doctrines. During the twelfth century we see how physicians gradually bridged this gap by adopting the classical doctrines and adapting their discussion of drugs and formulas.

Part I

1 Emperors and medicine

The revival of Classical Medicine

One of the most noticeable changes in medicine during the Northern Song dynasty was its rising prestige. For the first time in Chinese history, members of the imperial family and the scholar-official elite took personal interest in medicine, compiled medical treatises, and even took practice in treating patients. Prior to the Song dynasty, elite families did not consider medicine a desirable occupation for their sons.¹ The Tang dynasty (618–907 CE) serves as a good example for the lowly status of medicine. For example, when discussing possible career paths for the sons of the elite the famous Tang scholar, Han Yu 韓愈 (768–824 CE) grouped together physicians, spirit-mediums, and musicians. He stresses that both the common people and the gentlemen despised these arts and regarded them as an unworthy.²

Han Yu was not alone in this perception. The official *New History of the Tang dynasty* grouped “astronomers, diviners, physiognomists, and physicians” together under one category, saying that these “were all artisans.” The authors continued by saying that the sages of the past did not take such crafts as their teachings.³ The fact that medicine during the Tang dynasty was a lowly art did not escape the eyes of Song scholar-officials. Gao Baoheng 高保衡 (fl. 1050–1065), a Song scholar-official serving as an editor at the Bureau for Revising Medical Texts (*Jiaozheng yishu ju* 校正醫書局), commented in the preface he wrote to the *Yellow Emperor’s Inner Canon* saying, “It is a pity that the Tang-dynasty statutes classified medicine among crafts. As a result, men of the official class rarely spoke of it.”⁴ The best account on the status of medicine during the Tang comes from Sun Simiao 孫思邈 (581–682). Sun was probably the most famous and important physician of his era.⁵ In the preface to his book, *Essential Prescriptions Worth a Thousand, for Urgent Need* (*Beiji qianjin yao fang* 備急千金要方, in short: *Essential Prescriptions*), he scolds gentlemen who are unable to treat their relatives during their illnesses. In Sun’s mind this behavior does not conform to Confucian filial norms but rather follow the vulgar customs of the common people. He further expounds that due to the conventional elite’s emphasis on the moral (rather than the therapeutic) dimension of medicine and the incompetence of uneducated doctors,

Gentlemen in and out of office consider a reputation for medicine shameful. Many of them have their sons memorize little books and write little essays [to pass the civil service examinations] as a means to a livelihood. As for the curative arts, they ignore them. How aberrant! How sad it is that they violate the intentions of the sages and worthies!⁶

Setting the stage: change in perception of medicine

During the Northern Song dynasty perceptions about medicine changed. To disseminate medical knowledge, the Northern Song emperors commissioned the collection, revision, and printing of ancient medical canons as well as innovative medical manuals. With the help of the officials they also established a medical education and examination system. They further complemented these enterprises by establishing imperial institutions that aided the common people – or, in modern terms, they engaged in public health initiatives (see Chapter 2). During this period, we witness two interrelated phenomena. First, for the first time in Chinese history we see emperors and members of the literate scholar-official elite showing genuine interest in medicine as a worthy field of study. Second, and tightly linked to the former, we find government activism in medical theory, practice, and education. It should be noted that this government activism was not limited to medicine; it affected many other fields of knowledge.⁷

Probably the best representative of the changing perceptions of medicine was Emperor Huizong (r. 1100–1126), who wrote a preface to the most comprehensive medical formulary to that date – *Medical Encyclopedia: A Sagely Benefaction of the Zhenghe Reign Period* (Zhenghe sheng ji zong lu 政和聖濟總錄, in short: *Medical Encyclopedia*).⁸ There, Huizong stresses the importance of medicine as well as his personal interest in this field:

When Zhang Zhongjing of the Han dynasty wrote the *Treatise on Cold Damage Disorders*, he interpolated formulas. When Sun Simiao of the Tang dynasty compiled the *Essential Prescriptions*, he followed it with a supplement [i.e., the *Qianjin yifang* 千金翼方]. One might say that otherwise [i.e., without the formulas included in these books] their successors would have been unable to make use of their skill and knowledge. While these two scholars explored the art of prescription, they also had exceptional insights outside this art. But only when they looked down at the followers of Qi Bo and debated them can we speak of their knowing the Dao [of medicine].⁹

I have written the *General Register* to meet an urgent need of this world and to be used in curing the people's diseases.¹⁰ But it is no more than a “fish trap and rabbit snare” designed to catch the Way of medicine.¹¹ Let future generations throughout the realm focus on forgetting the trap and the snare and obtaining [mastery of medicine] themselves. As quickly and easily as nodding the head or changing the expression on

one's face, let them master the constant [relations] of the Five Phases and manipulate the changes of the Six Climatic Configurations of Qi 六氣.¹² Thus they can physiognomize heaven and earth and nourish the myriad things. And if they can succeed to the extent of returning souls and reviving all those who should live, surely that is no small matter. In the future it will come!¹³

Huizong chose to put himself at level with two of the most famous doctors in Chinese history, Zhang Zhongjing 張仲景 of the late Han dynasty (206 BCE–220 CE) and Sun Simiao 孫思邈 of the Tang (618–906 CE). Like them, he wrote a book of medicinal formulas that was intended to serve as the basis for treating disorders in clinical practice or, in Huizong's words, as the means for attaining the "Dao or Way of medicine." The comparison Huizong makes between his work and that of the two ancient famous physicians is odd; even more puzzling is the fact that Emperor Huizong himself raises this comparison. It seems that he did it to stress the importance of medicine and to entice the scholar-official gentlemen to become involved with medicine and medical practice.

To Huizong, as to many of the Northern Song elite, the art of medicine went beyond prescribing drugs. According to him, in order to attain the Dao of medicine or the right way of medical practice, physicians have to understand the doctrines of the *Inner Canon* (*Huangdi neijing* 黃帝內經). That is, physicians must assimilate both cosmological and medical doctrines and incorporate them with clinical drug therapy till they become second nature.

Huizong, in his preface to the *Medical Encyclopedia*, touches upon many of the themes running through the transformation in medicine during the Song dynasty. First, he presents medicinal formulas as a prominent therapeutic choice, but one that is worthless without the classical doctrinal foundation of the *qi* and the Five Phases. He advocates for the integration of the doctrines of Classical Medicine into prescription therapy, a process that began during and following his reign. Second, Huizong claims that in order to be able to practice medicine one has first to understand the interaction between cosmological changes, changes in the natural world, and the human body; only then apply them in medical therapy. This emphasis of cosmological doctrines found its way back into medicine during the second half of the Northern Song dynasty. Lastly, Huizong's example of how the two doctors debated with the followers of Qi Bo may allude to the need, increasingly felt during the Song dynasty, to critically evaluate ancient knowledge handed down through the ages.

In this chapter I concentrate on how emperors' interest in medicine facilitated the revival of Classical Medicine during the Northern Song dynasty. The Song government's involvement with medicine had three evident facets. First, it collected books, then sponsored collating, revising, editing, printing, and disseminating them, thus filling gaps in knowledge. The need to treat epidemics motivated the state to establish a new bureau to expand this

project. Second, it established medical schools and enforced an examination system, both on the pattern used to prepare and select conventional officials. Third, it promoted the classical canons, which were all but out of use. The most important were the *Inner Canon*, the *Canon of Problems*, and the *Treatise on Cold Damage Disorders*. As part of this effort, the government promoted the use of acu-moxa therapy.

The Song emperors' personal interest in medicine

Convictions about medicine began to change with the ascent to the throne of the founding emperor of the Song dynasty, Zhao Kuangyin 趙匡胤 (r. 960–976), better known by his posthumous title, Taizu 太祖.¹⁴ Taizu was fond of medicine. It is unclear whether he received training in medicine, but he evidently possessed therapeutic skills. When his brother, the heir apparent Zhao Guangyi 趙光義, posthumously referred to as Taizong 太宗, became ill, Taizu returned to the capital to treat his brother using the technique of “moxibustion.”¹⁵ The record also mentions that after cauterizing his brother, Taizu treated himself as well. This was not the only manifestation of Taizu’s interest in medicine. He also collected information about popular medical knowledge and healing techniques. For example, during his campaigns of conquest in south China, he questioned commoners about the drugs they used, and their effects. When he conquered Guangzhou prefecture, for example, he summoned local medical officials to inquire whether statements about local practices in an early compendium of materia medica collections were accurate.¹⁶

While the first Song emperor was proficient in acu-moxa therapy, which included needling and moxibustion, and showed interest in medicines, the second emperor, Taizong 太宗 (r. 976–997), seems to have been fond of drug therapy. According to his own account, before ascending the throne, while serving for a number of years as a governor in remote regions, he collected many local medicinal formulas. His private collection of over 1,000 formulas eventually found its way into a government-sponsored formulary, the *Imperial Grace Formulary*, published in 992.¹⁷

The third emperor, Zhenzong 真宗 (r. 997–1022), unlike his predecessor, did not focus on collecting medicinal formulas or texts, but was proficient in prescribing medications. It is recorded in various sources that Zhenzong himself mixed and prepared medications for high-ranking officials on a number of occasions.¹⁸ Shen Gua 沈括 (1031–1095), who was one of the most prominent scholar-officials of the Northern Song, mentions the following incident involving Zhenzong:

The Defender in Chief Wang Wenzheng’s *qi* was weak and he was often sick. When [Emperor] Zhenzong met him face-to-face he gave him a bottle of a medicinal drug with alcohol. He told Wang to drink it on empty stomach. This [medicine], he continued, can harmonize the *qi* and

the *xue* [blood] and expel external pathogens. Wenzheng drank it. He felt wide awake, peaceful, and healthy. He thanked the emperor for that. The emperor said: This is the alcoholic extract of Oriental sweatgum [Liquidambar Orientalis] 蘇合香酒 . . . it harmonizes the five *zang* visceral system of functions. It expels various disorders of the stomach.¹⁹

According to Shen's account, Emperor Zhenzong showed understanding of the functional physiology of the body and accordingly prescribed a successful medication.

The fourth Song emperor, Renzong 仁宗 (r. 1022–1063), was, according to surviving records, proficient in both acu-moxa therapy and drug therapy; but apparently he preferred acupuncture. It is recorded that

In the year 1056, Renzong became ill and was confined to bed. [He] himself inserted needles [into a location] on the back of his head. As soon as the needles were removed, he opened his eyes and said, 'it is good to be clear-headed [*xingxing* 惺惺]'. The following day, the emperor felt well. He decided to name the acu-point he needled 'head-clearing' or *xingxing*.²⁰

This record, once again, mentions an emperor who shows proficiency in medical therapy, namely acupuncture, this time in self-treatment.²¹ It may well be an attempt to promote the status of acupuncture by attributing its usage to the emperor. This suggests that either Renzong's skill was substantial or that the official who wrote this anecdote wanted the reader to believe in the emperor's unique needling skills. The mere fact that this technique is recorded as done by an emperor is telling.

The historical evidence about the first four Song emperors' interest in medicine indicates a turning point in the status of medicine. We do not know if these are accurate testimonies, but the fact that imperial officials recorded these instances in different documents points to an increased emphasis on medicine at the highest levels. The imperial interest in medicine did not cease here; quite the opposite. A later Song emperor, Huizong, epitomizes imperial involvement in medicine (see Chapter 6). He had the most significant and long-lasting influence on medicine. He compiled an innovative medical canon, revolutionized medical education, and promoted charity institutions to enhance public health, as discussed later in this book.

Song emperors contributed to the status of medicine in another way. The majority of them devoted time to write prefaces to medical books commissioned and published during their reign. In these prefaces they stressed the importance of medicine to the state and to the society. Some even stressed the need to raise the status of medicine in order to attract better candidate to the field. All these actions did raise the status of the field and drew interest from other members of the elite. By the end of the Northern Song dynasty, medicine was no longer a lowly art.²²

Reviving medical literature: the early Northern Song dynasty

Once the empire reunited under the Song dynasty, the provision of medical relief was among the issues on the government's agenda. However, the long decades of disintegration experienced by China during the second half of the Tang dynasty (755–906), followed by the disunity of the Five Dynasties era (906–960), greatly depleted the imperial libraries and archives. A contemporary scholar commented that

Following the Five Dynasties era, definitive editions of texts were damaged and [the surviving ones] contained errors. [The books were] scattered all over [the empire] and [the imperial archives were] nearly emptied. During the first three years of the Song, the Three Institutes collected [existing] books, adding up to 10,000 chapters [*juan* 卷].²³

Civil unrest and the lack of central ruling entity for all China during the tenth century led to deteriorating public health, making the lack of medical texts only more evident.

Taizu, the first Song emperor, considered the lack of books and structured education as one of the reasons for the demise of the Tang dynasty.²⁴ Consequently, he and his successors stressed the importance of education. In 1060, the fourth Song emperor, Emperor Renzong, referred to Taizu: "Once he pacified and established order in the land, he turned his attention to collecting books and literary works."²⁵ It is not surprising that Taizu, fond of medicine, and faced with large-scale public health problems, promoted the collection of local medical knowledge. In an edict from 971 he pledged to rectify the office of the Palace Physician (*taiyi* 太醫). The first step was an order to collect privately owned medical manuscripts with due compensation to the owners.²⁶

Once the initial project of book collection had been concluded, Taizu ordered in 973 the compilation of a pharmacognostic manual, a *Bencao*. This was the first government project of compiling a medical manual since the middle of the seventh century. The first attempt was pronounced a failure by the emperor. Following a year-long revision, the government published it in 974 under the title *Re-Determined Materia Medica of the Kaibao Reign* (*Kaibao chongding bencao* 開寶重定本草). Taizu personally wrote the preface for the book stating that it rectified many errors about the usage of drugs.²⁷

Taizong, the second Song emperor, continued Taizu's initiatives. In 981, he offered incentives to encourage commoners and officials to donate books to the court. The imperial edict read:

As for the formularies of the Imperial Medical Service, what matters most is their completeness. As for the drugs listed in the *Divine Husbandman's Materia Medica*, they are classified according to three ranks.²⁸ Discussions of this topic [drug therapy] over previous dynasties are indeed

numerous. Saving people's lives depends on correct understanding of this topic. Before [the government] decree to collate and compile [formularies], many had shortcomings. Accordingly, it was fitting to use collected and purchased literature [to correct the errors]. In order to express our intention regarding public health care, it is appropriate to order the Fiscal Commission officials of various circuits to travel through all the prefectures governed by their office. They should permit those officials and commoners whose households contain ancient medical texts to visit the imperial court and donate their texts. If the donated texts are over two hundred chapters, those who do not serve in an official post will be granted one. If they already serve they will be promoted. If the texts they donate add up to less than two hundred chapters, they will be generously rewarded in cash. If people go to the palace for the purpose of donating medical books, they are permitted the use of the imperial courier stations [to stable or change horses]. Furthermore, I order the districts [in which these people] pass en route to supply food to them.²⁹

That same year, 981, the Imperial Court issued an order to compile the first government-sponsored formulary. A group of editors headed by Jia Huangzhong 賈黃中 (941–990) worked on this project for five years. In 986, the editors completed a gigantic manuscript entitled the *Divine Doctor's Formulary for Universal Relief* (*Shenyi pujiu fang* 神醫普救方). This enormous work consisted of 1,000 substantive chapters, the table of contents alone comprising ten chapters. Here again, Taizong himself wrote the preface to the text, indicating once more the Court's high regard for medicine. However, for unknown reasons, perhaps because of this work's magnitude, it was not printed, and the manuscript did not survive for long.³⁰

In 982, Emperor Taizong issued a decree instructing Wang Huaiyin 王懷隱 (fl. 978–992), who was a medical official of the Hanlin Academy and the Chief Steward of the Palace Medical Service 尚藥奉御, to compile a new formulary.³¹ After ten long years, Wang and his associates completed work on what had become one of the largest government-sponsored medical compilation projects, the *Imperial Grace Formulary of the Great Peace and Prosperity Reign Period* (*Taiping sheng hui fang* 太平聖惠方; in short: *Imperial Grace Formulary*). It consisted of 100 chapters and included 16,834 different formulas. Again Taizong wrote the preface to the book, which included his own personal collection of formulas.

Only a handful of private medical compilations were published during this period but none survived. Perhaps the intensive effort by the government to collect existing medical texts, and then reconstitute and republish them, was so successful that it drained private holdings of medical texts, but also obviated the need for privately-sponsored publications.

Prior to the Song, materia medica collections and formularies focused primarily on treatment, devoting only limited space to theoretical discussion about the causes of the disease and its pathology. It is possible that the

collection and dissemination of these books was motivated by the need to provide immediate relief to the populace. It is also possible that these were the texts collected in the imperial projects, therefore the first to be revised and printed.

Government officials, whether intentionally or not, did not publish even a single text belonging to the Classical Medicine genre, indicating that it was not part of existing medical discourse. It is worth noting that not many physicians had access to the canons of Classical Medicine prior to the Song. This situation changed once the fourth emperor, Renzong, ascended the throne in 1023.

The revival of Classical Medicine began during the reign of Renzong. This revival had three aspects – standardization of acu-moxa therapy the preferred treatment technique of Classical Medicine, printing of books including canonical works, and establishment of education system to transmit this knowledge. During the first years of his reign, Renzong ensured that acu-moxa therapy regained its prominence by commissioning a work to standardize the location of acu-points and the course of the circulation tracts. Additionally, Renzong implemented the first step of reviving Classical Medicine by ordering the revision and printing of its ancient canons – the *Inner Canon* (*Huangdi neijing* 黃帝內經) and the *Canon of Problems* (*Huangdi bashiyi nanjing* 黃帝八十一南經).³² During the latter years of his reign, the Bureau for Revising Medical Texts (*Jiaozheng yishu ju* 校正醫書局) published a handful of ancient medical canons including several of Classical Medicine and acu-moxa therapy (see Chapter 3).

It is unclear why Emperor Renzong focused on Classical Medicine and its acu-moxa therapy. If we consider both his personal inclinations and the changes in the empire during this period, especially with regard to the education and examination system, we can probably better understand his preferences and actions. However, we must first briefly recount the history of Classical Medicine up to Renzong's reign.

History of Classical Medicine to the early Northern Song dynasty

During the Han dynasty (206 BCE–220 CE), physicians and scholar-officials began to focus on the body as a microcosmic representation of macrocosmic cosmological doctrines such as Yin-yang and Five Phases. Subsequently they systematized the doctrine of circulation tracts and the physiology of the visceral system of functions, which served as the theoretical basis for acu-moxa therapy. The first surviving texts mentioning tracts, dating to the late third or early second century BCE, were unearthed in 1973 from a second-century BCE tomb located at Mawangdui 馬王堆, Hunan province. Two of the excavated texts concentrate on the doctrine of circulation tracts and cauterization (moxibustion) as a treatment, without, however, specifying acu-points or needling. The texts also rarely mention the concept of *qi*, which, according to later texts, flows in the circulation tracts.³³ The first archeological evidence

of the practice of acupuncture are gold needles which date back to the second century BCE, discovered at the tomb of the Han prince Liu Sheng 劉勝 at Mancheng 滿城, present-day Hebei province.

During the last two centuries BCE, Chinese physicians began to formulate the doctrines of Classical Medicine, most importantly its conception of the body. This conception of the body relied on a macrocosm–microcosm analogy and correspondence. The human body was perceived as a microcosm from a number of perspectives including astronomy, topography, and human society. Thus we find analogs of parts of the body to asterisms, topographic features, and social ranks. What unified all of them was the circulating *qi*. For instance, just as waterways enable agriculture and transportation, the circulation of *qi* enabled the bodily processes.³⁴

The first canonical work representing a fully-developed doctrinal framework for medical practice was the *Inner Canon*. This work was probably compiled during the first century BCE by an unknown number of authors. The book conveys the fundamental cosmological, metaphysical, and medical doctrines, including spiritual and moral doctrines, which constitute the foundation of medical practice. Although setting the doctrinal foundation of medicine, medical authors in China throughout history perceived the *Inner Canon* and other canonical works as meant to be applied in clinical practice rather than serving as a basis for scholastic debates.³⁵ Chunyu Yi 淳于意, a first-century BCE physician, serves an example of how a physician used canonical works to determine the diagnosis and the treatment best suited to his patients according to Classical Medicine.³⁶

The *Inner Canon*, the most complex cosmological and medical treatise of the Han dynasty, was considered as the founding canon of Classical Medicine. The canon's authority arose from the belief that the text had been revealed by the mythical Yellow Emperor, deep in Chinese prehistory. The anonymous compiler or compilers used sources written over the course of approximately one century. Accordingly, the book contains many inconsistencies which later books attempted to correct.³⁷

The second canonical work of the Yellow Emperor's tradition, representing the fully developed classical doctrines and their application in treatment, is the *Canon of Problems*, compiled during the second century CE. The format of the contents – questions from a disciple followed by his teacher's explanation – gave the book its name. Unlike the *Inner Canon*, a single author probably wrote this canon. It was the first of many books to impose straightforward statements on the heterogeneity, vagueness, and frequent internal contradictions of the *Inner Canon*. The *Canon of Problems* played a significant role in shaping subsequent understanding of Classical Medicine and of the *Inner Canon*.

Another such work, focusing on therapeutics, was Huangfu Mi's 皇甫謐 acu-moxa manual, the “A–B” *Canon of the Yellow Emperor* (*Huangdi jia yi jing* 黃帝甲乙經) published in 282 CE.³⁸ Huangfu synthesized clinical and doctrinal knowledge in a systematic clinical acu-moxa manual. The text

standardizes the number of acu-points, their location, and their association with circulation tracts. Later physicians referred to it as the classical authority for acu-moxa therapy.³⁹

The last canonical work of the Han era was the *Canon of the Pulse* (*Mai jing* 脈經), authored by a Jin dynasty official, Wang Shuhe 王叔和 (265–316 CE). This text, consisting of ten chapters, was the first book that discusses the most important diagnostic tool in Chinese medicine, palpating the radial pulse.⁴⁰ This book drew upon all previous literature to provide a comprehensive handbook of diagnosis and therapeutics. In other words, this work was the first systematically-organized discussion on the circulation tracts and how to use the doctrinal knowledge in clinical practice.

Following the disintegration of the empire during the late third century CE, most of the canonical works were lost. However, some copies survived in private hands and were passed from masters to their disciples. We have little historical evidence about the state of Classical Medicine and acu-moxa therapy from the end of the third century until the Tang dynasty (618–907).

During the Tang dynasty, following the re-unification of China under one rule, we find two revisions of the *Inner Canon*. In 666 or 683, Yang Shangshan 楊上善 revised a version of the *Inner Canon* titled the *Yellow Emperor's Inner Canon: the Grand Basis* (*Huangdi neijing taisu* 黃帝內經太素, in short: the *Grand Basis*).⁴¹ Yang compiled it from fragments of a post-Han recension of the original version of the *Inner Canon*. This compilation or revision was the first during the Tang. In 762, Wang Bing 王冰 revised, annotated, and published extant editions of the *Basic Question* volume of the *Inner Canon*.⁴² These revisions mark a short-lived renaissance for Classical Medicine. The reunification of China encouraged scholars to revive some of the ancient writings. More than anything else, the existence of an imperial library and the establishment of a small medical school at the Tang court helped the approximately century-long revival of Classical Medicine.

One of the most important acu-moxa books that were revised during the Tang dynasty is the *Yellow Emperor's Canon of the Hall of Light* (*Huangdi mingtang jing* 黃帝明堂經).⁴³ The author and the date of compilation of this Han dynasty text are unknown. What we do know is that during the early Tang dynasty (seventh century), Yang Shangshan revised this work. Yang expanded the scope of the work to include thirteen chapters, one for each of the twelve cardinal tracts and one discussing the eight extraordinary tracts. At the present all we have is the preface and the first chapter, which survived in Japan.⁴⁴

The information we have on acu-moxa during the Tang dynasty comes in the form of several chapters in two formularies.⁴⁵ The first, Sun Simiao's *Essential Prescriptions*, includes mostly clinical information relating to acu-moxa.⁴⁶ In Chapters 29 and 30, Sun presents various disorders and suggests acu-points to treat them. Sun does not systematically present and discuss acu-points as the "*A-B*" *Canon of the Yellow Emperor* had done. This suggests he assumed that his audience was already familiar with the acu-points,

their location, and general usage. The second text, the *Arcane Essentials from the Imperial Library* (*Wai tai bi yao* 外臺秘要, in short: *Arcane Essentials*), was compiled by Wang Tao 王燾 (670–755) in 752. The work consists of forty chapters, of which Chapter 39, titled “Moxibustion Methods of the Hall of Enlightened Rule” (“Mingtang jiufa” 明堂灸法), is devoted to acu-moxa therapy.

Unlike the *Essential Prescriptions*, the *Arcane Essentials* supplied a systematic list of acu-points listed according to the twelve circulation channels.⁴⁷ For each acu-point, the text provides the channel and the main symptoms and disorders it treats. The reintroduction of circulation tracts into discussion of acu-points may be another indication of the brief renaissance of Classical Medicine during the Tang dynasty. The renewed importance of the circulation tracts in acu-moxa therapy was, however short-lived.

Wang strongly advocated moxibustion and opposed acupuncture, probably due to the greater risk of injury associated with inserting needles to wrong locations. Wang’s preface to the acu-moxa chapter begins with a stern warning,

acupuncture can kill healthy people, and cannot revive those who are dead. If one desires to adopt this technique, I am afraid he will harm life. [Therefore] at this present compilation I do not adopt [the technique of] the *Acupuncture Classic*, I only adopt moxibustion.⁴⁸

Since the application of moxibustion by definition does not require locating the acu-point in a precise manner as required for acupuncture, it is possible that the lack of detailed descriptions of the acu-points’ anatomical location led to this shift from acupuncture to moxibustion.⁴⁹

Another work, though compiled during the tenth century in Japan, reflects the state of acu-moxa during the Tang dynasty – the *Prescriptions at the Heart of Medicine* (*Ishinpo* 醫心方). A Japanese scholar, Tanba Yasuyori 丹波康賴, compiled this formulary between the years 982 and 984. The thirty chapters were based entirely on 204 Chinese medical books.⁵⁰ Most of the quoted texts have not survived to the present. The text discusses a total of 660 acu-points, arranged according to regions, not according to the circulation tracts. Moxibustion is the preferred method of treatment, although needling techniques are mentioned. In other words, the authors of the original texts that made up this book seem to have valued the acu-points and the symptoms they treat while ignoring the circulation tracts, signifying the diminishing role of Classical Medicine in this text.

Classical Medicine during the early decades of the Northern Song dynasty

In 978, the second Song emperor, Taizong, commissioned the compilation of a large-scale formulary, the *Imperial Grace Formulary*, to include the most

important information of the medical texts collected during his reign.⁵¹ The formulary concentrated mostly on drug therapy, but also included discussion about acu-moxa therapy in its last two chapters, 99 and 100, titled respectively “Needling Canon” (*Zhenjing* 針經) and “Hall of Light” (*Mingtang* 明堂). These chapters seem to originate from three different acu-moxa texts of the middle-to-late Tang dynasty.⁵²

Song scholars often considered the “Needling Canon” as much more valuable and applicable than the “Hall of Light.” For example, the set of master answers for questions appearing in official medical examinations, provided by the Imperial Medical Service (*Taiyi ju* 太醫局) for the use of official graders during the eleventh century, relied on the “Needling Canon” more than on any other acu-moxa text. For example, in some cases, the instructions given to the examinees regarding certain questions required them to answer according to the *Illustrated Canon of Acu-moxa* (published in 1026), but the supplied master answers still followed the “Needling Canon.”

The state of Classical Medicine and acu-moxa therapy during the first decades of the Song dynasty did not differ from that of the later Tang. None of the canonical works was in wide circulation, and practitioners largely shunned needling. Furthermore, the Imperial Medical Service also recommended using moxibustion over needling.⁵³

Reviving Classical Medicine and its therapy: acu-moxa

Classical Medicine remained almost out of use until the reign of Emperor Renzong (1022–1063), who, according to surviving records, was personally interested in acupuncture. As mentioned above, it is recorded that at one time he treated himself for some type of headache using an innovative acu-point. Renzong also trusted physicians who practiced acupuncture, even someone like Xu Xi 許希, who did not attain the rank of imperial physician.⁵⁴

Xu Xi was registered in Kaifeng. His profession was medicine and he was appointed as a student in the Hanlin Academy.

[Sometime] during 1034, Renzong did not feel well. His attending physicians repeatedly administered drugs but to no avail. The people’s hearts filled with worry and fear. The Princess Supreme of Hebei recommended Xu Xi [for the emperor’s treatment]. Xu examined the emperor said: “If I needle between the lower aspect of the heart and the cardiac envelope junction tract, then recovery will be rapid.” The observers in the room contended saying it cannot be so. Several Palace Gentlemen begged to use their bodies to test the treatment. Xu needled them and there was no harm whatsoever. Subsequently, Xu needled Renzong, and the emperor’s disease was cured. He then ordered Xu made an official at the Medical Institute, gave him a red robe, a decoration of official rank, goods, and money.⁵⁵

A patient willing to be needled in the chest was not common during that time. Even if this is not a record of actual events, the caution about needling, especially an acu-point on the chest, was genuine. The fact that the official who recorded the event claimed that Renzong agreed to have a needle inserted into his chest strongly suggests that this official believed Renzong approved of this art and trusted its practitioners. This is especially noticeable if we remember that many Tang dynasty practitioners rejected acupuncture due to the risk of causing injuries, as mentioned above.

By the time Renzong ascended the throne, the state examination system was well-entrenched as the main avenue for entering officialdom. As an advocate of acupuncture, Renzong could have ordered medical officials to compile and print clinical manuals based on time-tested books such as Sun Simiao's formulary or Wang Tao's. Instead, he chose to order the revision of two ancient canonical works on the foundations of Classical Medicine, which justify acu-moxa. He also launched an unprecedented project of standardizing the location of loci and tracts of acu-moxa therapy. This choice of revising the classical canons and standardizing acu-moxa stems not only from Renzong's personal inclinations but also from wider social developments. The rise of the meritocratic examination system during the Song stressed classical knowledge. It is likely that this general atmosphere of stressing ancient canonical knowledge also influenced Renzong into choosing these books over others.

The Illustrated Canon of Acu-moxa

The changes in the Chinese world during the early decades of the Northern Song dynasty, including the increasing emphasis on studying the Confucian canons, led to analogous changes in medicine. These changes had two facets – the compilation of an innovative acu-moxa manual, and the collation, revision, and printing of some of the classical medical canons. In 1023, a year after his ascent to the throne, emperor Renzong ordered Wang Weiyi 王惟一 (c. 987–1067), who served as the Chief Steward of the Palace Medical Service, to compile a systematic work on acu-moxa therapy.⁵⁶ This book was intended to replace the lost Tang acu-moxa work titled the *Yellow Emperor's Canon of the Hall of Light*, and to serve as a standard manual for locating acu-points. The project lasted almost four years, concluding with the publication of the *Illustrated Canon Explaining Acu-moxa Therapy Using the Bronze Figure and its Acu-points* (*Tongren yuxue zhenjiu tujing* 銅人腧穴針灸圖經, in short: *Illustrated Canon of Acu-moxa*) in 1026.⁵⁷ Besides compiling the book, Wang also cast bronze human model to accompany and supplement his book.

The *Illustrated Canon of Acu-moxa* was the first Song dynasty medical work fully devoted to acu-moxa therapy. The original book consisted of three chapters each beginning with a quotation from the *Inner Canon*. The book discusses the circulation tracts, their paths along the body, their physiology and pathology, acu-points along them, and treatment of common disorders associated with the tracts. Wang's compilation was regarded so highly that

in 1029 the emperor ordered it to be carved on stone stele (Figure 1.1) to preserve its contents.⁵⁸ The stone carvers had extra space left on the tablets, so, attempting to maintain the symmetry of the text, they added two short chapters, presumably also authored by Wang. One chapter listed all the points according to their order of appearance in the text. The second chapter listed distances between points and contraindications for some points.

Wang was a distinguished doctor, proficient in both drug and acu-moxa therapy. Besides serving as the Chief Steward of the Palace Medical Service in the Palace Administration (*Dianzhong sheng* 殿中省), He was a retired Hanlin medical official (*Hanlin yiguan* 翰林醫官) who also served at the Imperial Academy of Medicine (*Taiyi yuan* 太醫院).⁵⁹ Wang obviously knew both the classical canons and clinical practice.

The available acu-moxa literature at Wang Weiyi's disposal was limited to the sources collected during the first four decades of the dynasty, the same literature available to Wang Huaiyin when he compiled the two chapters on acu-moxa therapy in the *Imperial Grace Formulary* during the years 978–992. However, the goals of these scholars and the character of their

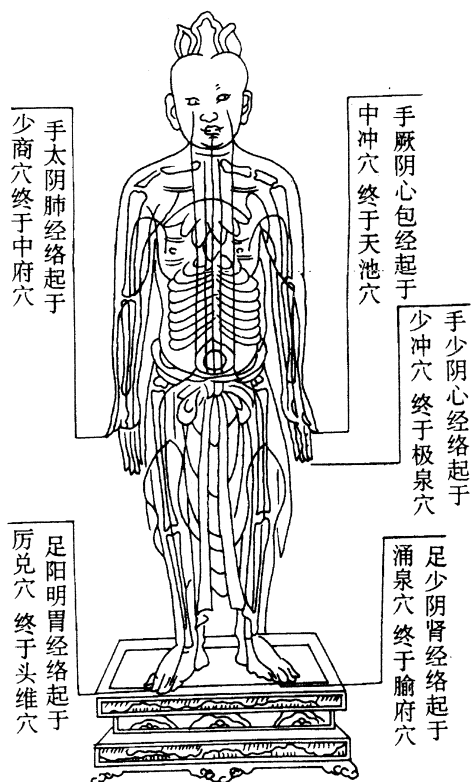


Figure 1.1 Drawing of the body as appeared in the *Illustrated Canon of Acu-moxa*, carved on a stone stele

Source: Huang Longxiang 1996, p. 171.

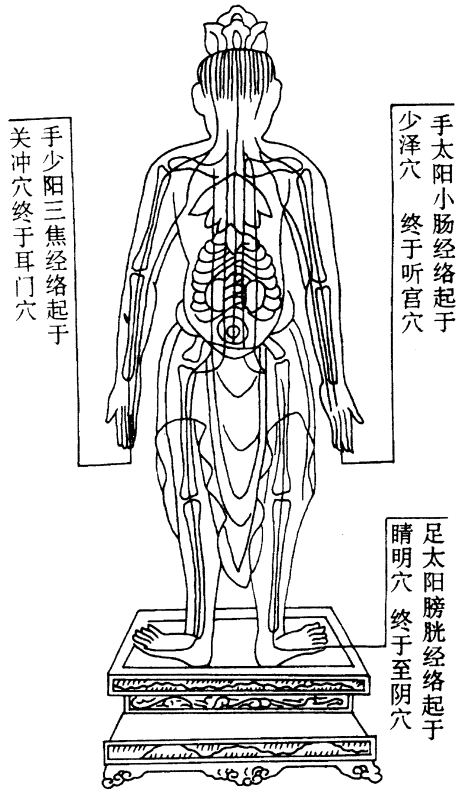


Figure 1.1 (Cont'd).

compilations were different. Wang Huaiyin compiled a therapeutic manual in which acu-moxa occupied only a small part of the book, which paid more attention to symptoms than to doctrine. Wang Weiyi's book, in contrast, was devoted to acu-moxa therapy, focusing equally on doctrine and practice. He aimed to standardize acu-moxa practice.⁶⁰

Xia Song 夏竦, who wrote the preface to the *Illustrated Canon of Acu-moxa*, describes an important reason for compiling such an innovative and detailed book:

Ever since the age of the sages, the study [of acupuncture and moxibustion] has gradually become more and more difficult to master. Even though [acu-points] have been listed in the medical classics and the circulation tracts have been depicted in illustrations, [written] characters have [often] been copied incorrectly and ink can easily be smudged. Therefore, [contemporary] physicians sometimes [erroneously] prescribe moxibustion that could injure the liver, and [erroneously] insert needles in locations that could injure the stomach.

Common people who received injuries [from the incorrect treatment] or those who did not find relief [for their disorders], turned to quacks and spirit-mediums who apply false [regimens of treatment] and have no medical knowledge.⁶¹

In 1027, one year after completing his book, Wang supervised the casting of two identical life-size bronze models of the male body, mapping the circulation tracts and the acu-points discussed in the book.⁶² One was placed at the Hanlin Medical Institute (*yiguan yuan* 醫官院), the other at the Hall of Benign Assistance (*Ren ji dian* 仁濟殿) in the Xiangguo Temple (*xiangguo si* 相國寺) at the capital, Kaifeng.⁶³ The following quotation from an imperial order suggests that the reason behind casting such a model was that textual description alone was not accurate enough to avoid incorrect needling. The imperial edict stated:

Before the compilation of the *Illustrated Canon of Acu-moxa* and the casting of the bronze human acupuncture model, applying the method of needling was according different traditions of skills. Consequently, the specified location of the acu-points was not identical. Needling [these erroneously located acu-points] often harmed people. Thus [emperor Renzong] ordered Wang Weiyi to research the *Mingtang* texts [the general term for acupuncture texts during this period] for the understanding various issues such as *qi*, acupuncture loci, and the circulation tracts. Based on that, he cast a human model from bronze [detailing the acu-points].⁶⁴

The bronze model served as the standard for the location of acu-points on the body. Its size is not specified but a similar model of the Ming dynasty (Figure 1.2) was approximately 1.6 meters high.⁶⁵ The model was assembled from detachable pieces. The metal walls were pierced with small holes corresponding to the 354 acu-points listed in the *Illustrated Canon of Acu-moxa*. Inside were representations of internal organs and on the outer shell the channels were carved with all the corresponding acu-points.⁶⁶

The model was the basis for a new hands-on method of examining medical students, as detailed below. The student was asked to assess a case presented by the examiner and to perform the acupuncture on the model. This exemplifies the level of proficiency required by the medical students of that period. Zhou Mi 周密 (1232–1298), who recorded the experiences of his uncle, gives an example:

Once I heard my maternal uncle, Zhang Shugong 章叔恭, say that formerly, when he was a Sub-Prefect in Xiangzhou, he got hold of a bronze figure for testing [skill at] acu-moxa therapy. The figure was made of fine bronze, and the viscera were complete. The names of the acu-points were inlaid in gold beside each locus. The figure was made in two halves, front and back, which could be fitted together to make a whole body.



Figure 1.2 Bronze model dating to the fifteenth century
Source: Huang Longxiang 2003, vol. 1, p. 207.

It seems that in old times this was used to examine medical practitioners, the body was covered with yellow wax and the inside filled up with mercury,⁶⁷ so that they could learn how to find the location by measure and try inserting the needle at the [correct] locus. When a needle was put in exactly at the acu-point, the mercury poured out. If there was

even a slight mistake, the needle could not penetrate. This was indeed an ingenious instrument.

Afterwards Zhao Nanzhong 趙南中 returned the figure to the Palace.⁶⁸ My uncle, Zhang Shugong, made two diagrams, and had them carved on wood blocks so that they might be [later] reproduced by printing. Therefore I mention the matter here.⁶⁹

The fact that local officials made diagrams of the body's circulation tracts and acu-points based on the bronze model supports the fact that it served as crude yet probably efficient means to standardize acu-moxa knowledge.

As an imperial medical official appointed to compile the text and cast the bronze model, Wang Weiyi seems to have designed his project as a standard textbook for practitioners and novices. Wang's text also provided a handy application of classical doctrines, such as the body's physiology and pathology and the interaction with circulation tracts, not available to a wide readership before. Wang, in addition to compiling the *Illustrated Canon of Acu-moxa*, participated in the collation, revision, and printing of the official version of two canons – the *Yellow Emperor's Inner Canon* and the *Canon of Problems*. The publication of these canons made classical doctrines more readily available to a wide audience for the first time in centuries. It is only natural that he included doctrines derived from these texts in his acu-moxa manual.

In summary, the *Illustrated Canon of Acu-moxa* is a systematic book for a diverse audience. From the practitioner's point of view, it alleviated the problem of accurately locating acu-points. From the educated physician's point of view, it provided ample information on the doctrine of acu-moxa. The book and the accompanying bronze model also served as a textbook and examination tool.

The impact of the *Illustrated Canon of Acu-moxa*

The *Illustrated Canon of Acu-moxa* reflects changes in medicine beyond the scope of acu-moxa therapy. The book and its accompanying bronze model signify the first attempt to standardize Chinese medicine. The Song government, like other dynasties before it, attempted to standardize weights and measurements in the empire.⁷⁰ However, unlike other dynasties, the Song government also launched projects to standardize medicine. The *Illustrated Canon of Acu-moxa* and its accompanying bronze model set the standard for the location on the body of the circulation tracts and the acu-points. A similar project attempting to standardize drug therapy, most importantly the names and effects of drugs, took place in 1058 when the government commissioned a survey of existing drugs which resulted in the *Illustrated Materia Medica* (see Chapter 4).

In the past, most authors used verbal description of the acu-point locations and sometimes attached a drawing. The drawings were neither

anatomically detailed nor precisely portrayed the body. During the Tang dynasty, this led to the uncertainty in the location of acu-points. Wang Weiyi chose to solve this problem in several ways. First, he standardized the number of tracts and their course on the body. Prior to the Song, scholars were in disagreement regarding the overall number of tracts. Wang, following the “*A-B*” *Canon of the Yellow Emperor*, set the number at twelve regular tracts and two extra ones, which include independent acu-points. This standard continues to the present. Second, Wang set the number of acu-points placed along each tract.

As important as the above standardization may be, the most impressive aspect of standardization came with the casting of the bronze model. This model, unlike earlier texts and models, provided an indisputable means to define the location of the acu-points, since it was life-size and the acu-points were marked as holes on its surface. Furthermore, at least one of the two identical models was sent to different localities to enable local officials and physicians to make drawings to serve as the next to best copy of the original standard.

The *Illustrated Canon of Acu-moxa* also represents a change in the relation between the doctrines of Classical Medicine and the clinical practice of acu-moxa. Many medical works prior to this canon concentrated on the symptoms treatable by stimulating acu-points while limiting the discussion of the tracts to a minimum. Wang’s work expands the discussion of the tracts and thus shows the first signs of integration between the classical circulation tract doctrine and the acu-points.

The last important change that rises from this new canon is the inclusion, for the first time, of detailed anatomical data in the form of drawings and the bronze model. Prior to the compilation of the *Illustrated Canon of Acu-moxa*, acu-moxa texts did not include detailed anatomical data either in the text or in drawings. It is difficult to explain this sudden interest in anatomical knowledge. One explanation may be that Wang realized that only such knowledge could lead to standardization of the location of acu-points. It is also possible that in order to cast the bronze model, Wang had to pursue anatomical information to construct the model’s internal organs.⁷¹

Revising the canons of Classical Medicine

Wang Weiyi’s *Illustrated Canon of Acu-moxa* contributed greatly to the standardization of acu-moxa therapy and thus to advancing its practice. Although it provided a limited exposition of classical doctrines it was a practical manual of acu-moxa therapy. By and large, acu-moxa therapy was still a symptom-oriented therapy as it has been since the third or fourth century CE. In other words, there still existed the lacuna of a theoretical foundation for acu-moxa therapy, since the canons of Classical Medicine were unavailable and out of reach for the majority of physicians. Emperor Renzong, conscious of this problem, searched for ways to resolve it.

Before this [May 1027] the emperor [Renzong] said to his Grand Councillor: “These days there are no excellent physicians. This is why so many people die before their time, which I find very regrettable.”

Zhang Zhibai 張知白 replied: “Although some of the old formularies have survived, on the whole they are badly corrupt, containing errors and mistakes. Furthermore, students of medicine throughout the realm are unable to see them all.”

The emperor then ordered the Medical Institute to collate and prepare a definitive edition of the *Basic Questions* 素問 of the *Yellow Emperor's Inner Canon*, the *Canon of Problems* 難經, and the *Origins and Symptoms of Medical Disorders* 諸病源候論. [These manuscripts] were then to be sent to officials of the academies and institutes for close examination. On June 2nd, the Emperor decreed that the Directorate of Education prepare the blocks, print [the books], and distribute them [when they were ready and approved]. He also ordered the Hanlin Academician Song Shou 宋綬 to write a preface for the *Origins and Symptoms*.⁷²

Renzong appointed a group of scholars, headed by Chao Zongyi 晁宗懿 and Wang Juzheng 王舉正, to revise the three canons mentioned in the quotation – the *Yellow Emperor's Inner Canon – Basic Questions* 黃帝內經素問, the *Canon of Problems*, and the *Origins and Symptoms of Medical Disorders* 諸病源候論.⁷³ The third book (written in 610 CE) was an important diagnostic manual compiled by Chao Yuanfang 巢元方. The editing of the three books was completed in 1027. Renzong ordered an official named Song Shou 宋綬 to compile a preface to the latter book and the Directorate of Education (*Guozijian* 國子監) was instructed to print and promulgate all three books. Although the imperial edict specifies other scholars, based on surviving prefaces and other records we can conclude that Wang Weiyi supervised the revision of the *Canon of Problems*. We cannot be as conclusive regarding the other two.⁷⁴

Printing these three texts along with the *Illustrated Canon of Acu-moxa* recreated a link between the canonical works of Classical Medicine and the practice of acu-moxa. In 1035, emperor Renzong ordered Ding Du 丁度 to conduct a second revision of the *Basic Questions*. This revision was never printed. We have no records detailing the reason for this second revision. It is possible that because the *Inner Canon* was the most celebrated canon of Classical Medicine, Renzong felt the first revision was not adequate.⁷⁵

Second revision of canonical works: the Bureau for Revising Medical Texts

An external event triggered a second revision of medical classics. Following a wave of epidemics during the years 1045–1060, the government established the Bureau for Revising Medical Texts 校正醫書局.⁷⁶ The Bureau's greatest contribution to later changes in medicine probably lies in revising and

printing the three extant versions of the original Han dynasty *Treatise on Cold Damage and Miscellaneous Disorders* (see Chapter 3). The Bureau also revised and printed authoritative editions of three canons of Classical Medicine. The first was the third revision of the *Yellow Emperor's Inner Canon – Basic Questions* compiled during emperor Renzong's reign. This version of the canon survived to the present.⁷⁷ The two other canons of Classical Medicine revised and published by the Bureau were the *Canon of Pulse* 脈經 and the “A–B” *Canon of the Yellow Emperor* 黃帝針灸甲乙經.⁷⁸ These two books represent the fully-developed doctrines of Classical Medicine along with their clinical application. The publication of these canons in conjunction with the *Illustrated Canon of Acu-moxa Therapy* provided medical students and physicians with a thorough overview of acu-moxa therapy. By the end of the eleventh century, the Bureau reprinted the books in a small and much cheaper format to enhance promulgation. In the 1090s, the Song government requested a copy of the *Yellow Emperor's Inner Canon – Divine Pivot* to be made from extant editions in Korea.⁷⁹

In summary, approximately a century and a half after the establishment of the Song dynasty, the Song government published the majority of the ancient canons of Classical Medicine. The availability of these canons coupled with their assignment to the syllabus of the evolving medical education system (see Chapter 2) set the standard for medical knowledge. This began the long process of restructuring and redefining medicine by aligning medical practice based on the doctrines of Classical Medicine.

Acu-moxa literature during Huizong's reign

The last text of the Northern Song to discuss acu-moxa was Huizong's great formulary, the *Medical Encyclopedia: A Sagely Benefaction of the Zhenghe Reign Period* (*Zhenghe sheng ji zong lu* 政和聖濟總錄, in short: *Medical Encyclopedia*). The book is concerned mainly with drug prescriptions but it includes chapters on other types of treatments such as diet, exercise, and acu-moxa therapy. Chapters 191–4 concentrate on acupuncture and moxibustion, borrowing extensively from earlier compilations. For example, the recorded acu-points' descriptions are copied almost verbatim from the *Illustrated Canon of Acu-moxa*. Nonetheless, the acu-moxa section of the *Medical Encyclopedia* also includes significant innovations.

Like the *Illustrated Canon*, this book gives as much attention to the circulation tracts as to the acu-points. The authors present each tract and its branches and discuss their role in the development of disorders. This change in the focal point of discussion, from the earlier two chapters discussing acu-moxa therapy in the *Imperial Grace Formulary*, reflects the rising importance of the doctrines of Classical Medicine and their integration with clinical practice during the last decades of the Northern Song dynasty. This type of discussion stands in stark contrast to acu-moxa texts of the Tang dynasty.

Another change in the acu-moxa section is the extensive discussion of Cold Damage Disorders both at the level of the acu-points, which already appears in the *Illustrated Canon of Acu-moxa*, and at the level of circulation tracts. The authors show how the tracts influence and even cause the development of Cold Damage Disorders. The acu-points' descriptions provide therapeutic solutions for the symptoms. Once again, this change in the content of the acu-moxa section reflects the wider changes in medicine, namely the integration between Classical Medicine and Cold Damage Disorders are discussed in Chapter 5.

Conclusion

During the Northern Song dynasty, medicine transformed from a lowly art into a topic of interest among emperors. Consequently, the Song government sponsored policies concerning medicine, medical knowledge, and medical institutions. The immediate impact of the emperors' interest was growth of available medical literature. The imperial government initiated a number of grandiose book-collection projects. Once medical texts were collected, the emperors appointed officials to revise, print, and promulgate them. This provided a foundation of medical knowledge for both physicians and scholar-officials.

Standing out among the newly published texts were those of Classical Medicine. Two printing projects during the reign of emperor Renzong brought back into wide circulation the canons of Classical Medicine. First, during the 1030s, a group of scholars revised and published the *Inner Canon* and the *Canon of Problems*. Later, during the 1060s, the Bureau for Revising Medical Texts published the *Canon of Pulse*, and the "A-B" *Canon of the Yellow Emperor*, in addition to another edition of the *Inner Canon*.

As part of this renaissance of Classical Medicine, acu-moxa therapy also transformed. In 1026, Wang Weiyi authored an innovative work on acu-moxa therapy. This work, along with the life-sized bronze models that adjoined it, set the standard for the location of acupuncture loci and for the courses of the circulation tracts. Hence, Song practitioners could use acupuncture without the fear of needling wrong loci due to inaccurate textual descriptions or bad reproductions of illustrations.

Prior to the Song, only a handful of practitioners read these texts. By the end of the eleventh century many students of medicine, physicians, and scholar-officials were familiar with this knowledge. However, familiarity alone did not suffice. We began this chapter with a quotation from the preface to the *Medical Encyclopedia* in which Emperor Huizong compares himself to two famous physicians. It is appropriate to conclude with another remark by him from the same preface. Huizong was troubled by the inadequate proficiency of practicing physicians who often did more harm than good:

I feel pain and pity over the stasis of the great way and the accumulation of vulgar customs. I acutely feel for the prolonged illnesses of my people,

and I am pained by the undisciplined practices of incompetent doctors whose study is not extensive and whose knowledge is unenlightened. They ignore the regularities of the Five Phases and the transformations of the Six *Qi*, and they do not search for their hidden meaning or their far-reaching implications. By ignoring small details such as climate and its variations, they cause great harm to the patient.⁸⁰

Huizong explains the importance of classical doctrines to the practice of a successful physician when treating patients. Nevertheless, during the early years of his rule the majority of doctors did not understand the basic cosmological doctrines that provided the theoretical foundation for medicine, doctrines such as Yin-yang 陰陽, the Six Qi 六氣, and the Five Phases 五行. Consequently, their medical practice was lacking.

The revival of Classical Medicine set the stage to a greater transformation in medicine, the integration of classical doctrines with drug therapy practice (see Chapter 6).

2 Institutionalizing medicine

Scholar-officials' impact on medicine

The Song emperors' interest in medicine was indeed historically unique, serving as the catalyst for ensuing changes in medicine. Nevertheless, if interest in medicine had not extended beyond the imperial palace, its impact would probably have been limited if not marginal. The Song scholar-officials, following the emperors' initiatives, took personal interest in medicine. A Qing dynasty scholar, Shi Yunyu 石韞玉 (1756–1837), encapsulates the Song scholar-official's attitude or role toward medicine, saying:

During the Song dynasty, the gentlemen [i.e., scholar-officials] perceived caring for the people as the essence of fulfilling their duties. Officials established the Imperial Pharmacy to provide medicine for the poor. For this reason, many literati also took interest in [and wrote] medical books. For example, among the medical works [written by scholars] of this age are the *Beneficial Formulas by Su and Shen* 蘇沈良方 and *Xu Shuwei's Original Formulary* 許學士本事方.¹ This was the era when this attitude [among the literati toward medicine] began.²

Indeed, Song scholar-officials wrote medical treatises, promoted an imperial medical education and examination system, and played a key role in the establishment of other imperial institutions affecting medical practice and public health. In this chapter I will discuss the scholar-officials' impact on medicine.

A study by Chen Yuanpeng has already demonstrated how Song-dynasty scholar-officials' interest in medicine raised the prestige of doctors and medicine alike.³ I will show that scholar-officials' impact on medicine was much more direct. They not only participated in the medical discourse, but also actively promoted and systematized medical education and examinations, consequently facilitating the dissemination of the newly revised and printed medical literature. Scholar-officials also promoted systematization of public health institutions in an attempt to implement the Confucian ideal of caring for the people.

The Northern Song scholar-officials

The scholar-officials' interest in medicine during the Northern Song dynasty was not a passing fashion; rather it reflects a noteworthy change in its composition. In other words, the Northern Song dynasty scholar-officials differed from their Tang predecessors. During the transition from the Tang to the Song dynasties, the elite in China transformed from "men of good birth" to "men of culture."⁴ During the Tang dynasty, members of great clans, which may be viewed as state-sponsored aristocracy, dominated the high ranks of the government. Their sons populated the ranks of officialdom, many via recommendation, thus making genealogy superior to merit. The written civil service examinations were designed to sort out the candidates within this cohort and rarely permitted entrance to officialdom to others. During the Song, the officialdom changed, as the imperial examinations had become the primary means of entering the bureaucracy for men of both noble and base families, making it much more meritocratic and emphasizing learning and knowledge.

During the early years of the Song dynasty, the process of obtaining an official post was similar to that of the Tang dynasty. Most candidates came from influential families whose members already held office and placed their kin accordingly. These influential families included, during the early Song, remnants of the Tang aristocracy, bureaucratic and military families from North China, and wealthy southern clans that had flourished under the relative tranquillity of the southern kingdoms during the period of disunity which preceded the Song.

Within the first few decades of the Song, the social environment changed radically. Peace and prosperity, urbanization, and the increase of availability of books all played a role in the creation of the new meritocratic elite. So too did the new role of the examination system. The examination system was not new. It had existed in its written format since the Sui dynasty (589–618 CE), when it was installed to rank the members of the great clans before they were assigned to official positions. Since the Song emperors saw the education and examination system as instruments for reordering society and transforming the elite, they expanded and applied the system to new uses, namely choosing the best candidates based on their merits. By the early eleventh century an imperial education and examination system was in place to educate and select the worthy candidates. The annual average of degrees given went from approximately thirty a year during the seventh and eighth centuries to approximately 200 during the eleventh to thirteenth centuries.⁵

Taizong (r. 976–997), the second Song emperor, transformed the examination system and expanded it greatly. For example, in 1000, over 1,500 degrees were given, 409 of them received the degree "presented scholars" (*jinshi* 進士).⁶ This number of degrees was more than in any other year in Chinese history to that point. The third emperor, Zhenzong (r. 997–1022), systematized and standardized the examination system. For example, he ruled that the examinees' names should be covered to avoid partiality of the examiner.⁷ The

examination system was closely aligned with the education system, which itself was dramatically expanded to accommodate the new corps of civil service candidates. For example, the number of imperial and local schools increased significantly under emperor Zhenzong and peaked under his successor, Renzong (r. 1022–1063).⁸

Passing the civil service examinations became essential, not only for those wishing to rise to high office, but also for those striving to join the elite. The clearest sign of the social mobility of the Song era was the radical increase in the number of participants in the imperial civil service examinations.⁹ This prominence of the examinations led to significant changes in the categories that were important traditionally for defining literati life; most importantly, the return to prominence of orthodox canonical learning. The *shi* 士, namely the literate scholar-officials or the new elite, sought to save Confucian culture, which they termed, according to Peter Bol, “this culture of ours.”¹⁰ In fact, the new elite was not “saving” an old culture, but inventing a new one that adopted Daoist and Buddhist concepts into Confucianism resulting in all the varieties that later were bundled under the term Neo-Confucianism of the eleventh century. We find similar trends in medicine. Once the government commissioned the collection, revision, and printing of ancient canons of medicine, this “saving of culture” brought about a reinvention of the orthodoxy by integrating earlier medical genres and using them to explain contemporary practice.

Scholar-officials’ involvement in medicine

Song Scholar-officials, much like Song emperors, wrote prefaces to medical works and even engaged themselves in compiling such texts. Their involvement in medicine was not limited to the literary aspect. They also promoted bureaucratization of medical education, the medicinal drugs trade, and public health institutions. Consequently, medicine gradually became an important field of knowledge worthy of the scholar-officials’ sons. When addressing the career choices of the literati, Vice Councilor Fan Zhongyan 範仲淹 (989–1052), one of the most influential scholar-officials of his era, commented that, “If you cannot be a good minister, at least be a good physician.”¹¹ Fan’s motto embodies the changing winds among the Northern Song elite.

The literati’s interest in medicine coincides with the gradual change in the composition of officialdom. During the early decades of the Song, we find few or no records mentioning the scholar-officials’ involvement in medicine. As time passed, however, scholar-officials became increasingly concerned with medicine.¹² This trend was especially pronounced during periods of political reforms, such as the Qingli 慶曆 Reforms of the early 1040s, and the reforms by Wang Anshi 王安石 (1021–1086) during the 1070s that continued intermittently until 1127. During the Qingli reforms the government established the medical education system to increase the number of “good physicians” 良醫, using Fan’s term.¹³ During the latter reforms, Wang expanded and

enhanced the medical education and examinations and implemented policies that affected medicine in multiple ways. For example, he established a unique institution, the Imperial Pharmacy, designed to control the prices and availability of medicinal drugs.¹⁴ Some officials made their influence felt at the local level. For example, during the 1090s, the famous scholar and poet Su Shi 蘇軾 (1036–1101), while serving as a prefect in Hangzhou, established local institutions to treat and support the poor and indigent.¹⁵

Besides promoting medical and public health policies, many officials actually studied medicine and some compiled medical books. For example, Gao Ruone 高若訥 (997–1055) compiled a book discussing Cold Damage Disorders (see Chapter 3), Su Song 蘇頌 (1020–1101) compiled an innovative materia medica resulting from an enormous survey of existing drugs in the empire, and Shen Gua 沈括 (1031–1095) wrote on medical doctrine and therapy (see Chapter 4). Some of the officials wrote about medicine in their private jottings providing stories and anecdotes. Many scholar-officials stressed the importance of medicine in prefaces they wrote to books by contemporary physicians. Some, like Fan Zhongyan and Sima Guang 司馬光 (1019–1086), used medicine as a metaphor when discussing the correct way to rule the empire.¹⁶ Others condemned the uneducated customs of the common people, especially in South China, that included consulting spirit-mediums instead of doctors when facing medical problems and deserting one's relatives when their condition was grave.¹⁷

Scholar-officials influenced medicine in yet another way. It was they, not physicians, who took the leading roles in collecting, collating, revising, and printing ancient medical canons. They often made the choice of which books to revise and print, thus having great impact on the course of medical knowledge since their selections did not always align with contemporary physician-based medical theory and practice (see Chapters 3 and 6). In other words, in some cases scholar-officials shaped the medical environment in which physicians studied and practiced.

The scholar-officials' most prominent impact on medicine was probably in the establishment of an education and examination system that standardized the field and later contributed to heightening its prestige in the eyes of the elite.

Changing medical education during the 1040s: the Qingli reforms

As we have seen, the imperial government published authoritative versions of the ancient medical canons as well as innovative texts. This great printing project would have had only limited impact if these books had not been widely disseminated. One method by which the imperial government achieved this dissemination was by establishing medical schools that taught these texts.

During the first half of the Northern Song dynasty, the imperial education system, the main pathway to officialdom, expanded and became more systematic and meritocratic. In contrast, medical education did not follow suit

and still resembled that of the Tang. There were no medical schools outside the imperial palace. The status of medicine, being an art often considered unworthy career for scholar officials, probably contributed to medicine's lagging behind other fields. Prior to the Song, the prevalent form of medical education was direct transmission of knowhow from master to disciple. Generally the disciple lived with his master and assisted him for many years, until the master decided it was time to hand down his written knowledge to the disciple and allow him not only to memorize but also to copy down his medical texts.¹⁸ The elite regarded this apprentice-like form of learning as unacceptable for a gentleman. Han Yu 韓愈 (768–824) wrote “Healers, musicians and the other people of the hundred occupations do not disdain being each other’s masters [and disciples]. Regarding gentlemen, if one even as much as mentions the words ‘master’ or ‘disciple’ then everybody will ridicule him.”¹⁹

This changed following an overhaul of the government’s personnel. The early 1040s were a time of unrest characterized by frequent altercations with the neighboring states (Liao to the north and Xixia to the northwest). Following the peace agreement, prominent politicians tried to change the priorities in the state. This move is known as the “Qingli New Policies” (*Qingli xingzheng* 慶歷新政).

In 1043, Fan Zhongyan became Vice Grand Councilor in the imperial court. Fan headed a group of newly promoted high officials who were southerners of modest, often local official background. Fan was an exceptional administrator whose bold and moralistic policy criticism often cost him demotions.²⁰ The distinguishing feature of Fan and his protégés was their common belief that Confucian principles could be used to reform institutions and improve policy. Accordingly, joining with Ouyang Xiu 歐陽修 (1007–1072) and other prominent figures, they implemented new policies that also affected medicine.

Fan was especially attentive to education and medical and public health needs. He maintained that:

at the present, the capital’s population stands at one million, but only several thousand doctors can be counted. [Moreover,] the majority of them have picked up [their skill] in the streets, rather than being taught by a master. Their errors injure people’s lives on a daily basis.²¹

Attempting to address this shortage and drawing his model upon the ancient text of the *Rites of Zhou* 周禮, Fan encouraged failed candidates for the civil service to pursue a medical career instead. Because of these convictions, Fan promoted the establishment of an office designed to concentrate solely on medical education.²²

The first establishment that taught medicine to a wide audience during the Song was set up in 1044, when emperor Renzong adopted Fan’s proposal to establish an office devoted to medical education. In that year, the government established the Imperial Medical Service (*Taiyi ju* 太醫局), under the authority of the Court of Imperial Sacrifices (*Taichang si* 太常寺).²³ Initially,

the Imperial Medical Service offered medical education to anyone who applied to study, requiring neither examinations nor recommendations. Prominent medical practitioners lectured there, including Sun Yonghe 孫用和 and Zhao Conggu 趙從古 who served as the Chief Stewards of the Palace Medical Service (*Shangyao fengyu* 尚藥奉御) at that time. The total number of students was approximately 200 over a ten-year period.²⁴ Though we have no specific records, it is possible to speculate that the establishment of the Imperial Medical Service gradually helped to increase the number of qualified physicians in the capital prefecture. Its effect outside of the capital, however, was practically nil.

The lack of “good physicians,” and the consequent establishment of the Imperial Medical Service to alleviate this shortage, were not just Fan’s fancy; it was a concern of the emperor and the imperial government. The increasing urbanization of China, with the capital spearheading the process, required a new approach toward medical care and public health. From the early years of the dynasty, emperors and government officials made it a priority to find ways to supply enough qualified physicians to care for the population. For example, in 963, emperor Taizu ordered to test the qualifications of many doctors in the prestigious Hanlin Medical Institute in the hope of retaining only the qualified ones. In 987, emperor Taizong unsuccessfully tried to recruit additional qualified physicians from various localities.²⁵ The Qingli reformers, especially Fan Zhongyan, thought that establishing the Imperial Medical Service to concentrate on medical education would provide sufficient qualified physicians for the capital.

Despite emperor Renzong’s support, the reforms were short-lived. Placing their faith in moral principles and imperial support rather than in persuasion, the reformers proved inept politicians, quickly alienating many highly-placed officials. In the summer of 1044, after only one year in power, Fan Zhongyan and Ouyang Xiu were given assignments outside the capital, and the following year their successors repealed their reform proposals. However, one aspect of the reforms survived their fall. It was their contribution to the general education system in the form of the Imperial University and to medical education in the form of the Imperial Medical Service.²⁶ It is not accidental that reforms related to medicine survived the collapse of the reform policy. The same was true regarding Wang Anshi’s reforms later during the Northern Song. This may imply that officials thought that these reforms to the field of medicine were important no matter where their alliances were.

Expanding and systematizing medical education

Originally, the Imperial Medical Service imposed no quota on the number of students attending classes, since the demand for physicians was great and the candidates few. This changed in 1060, when the government imposed new regulations. The annual student quota was set at 120 and an elaborate

application process was introduced. Each prospective student, who had to be at least fifteen years of age, completed a registration form, which included details about his family. He then had to obtain a recommendation from an official serving in a medical position.²⁷

Before starting studies at the Imperial Medical Service, students had to undergo a year of general education at the Court of Imperial Sacrifices and to pass an exam.²⁸ These new regulations added prestige to medical education and actually increased the number of candidates pursuing it.²⁹ Once admitted to the Imperial Medical Service, students were divided into nine fields of study. The vast majority of them, however, studied general medicine.³⁰

The curriculum of the Imperial Medical Service stressed Classical Medicine. All students studied the *Yellow Emperor's Inner Canon* and the *Yellow Emperor's Canon of Eighty-one Difficult Problems*. In addition to these two treatises, the curriculum included the *Imperial Grace Formulary of the Great Peace [and Prosperous State] Reign Period* 太平聖惠方 and the *Origins and Symptoms of Medical Disorders* 諸病源候論. Once the students began their specialization, additional textbooks such as materia medica collections were added.³¹ This curriculum exposed the students to both the canonic literature of Classical Medicine and to literature of Prescription Medicine.

The next major change in medical education came during the reign of Shenzong (r. 1067–1085). In 1076, the Imperial Medical Service became an independent office no longer under the authority of the Court of Imperial Sacrifices. Its independence did not last long, since during the Yuanfeng reign period (1077–1085) it returned to function under the authority of the Court of Imperial Sacrifices.³² In this period the number of students increased to 300. During the same year, Wang Anshi introduced the Three Hall System 三舍法, already in use at the National University, to the Imperial Medical Service.³³ The forty students in the Upper Hall were promoted from the sixty in the Inner Hall, who in turn were promoted from 200 in the Outer Hall. The introduction of this promotion system into medical education was another significant step toward raising physicians' status in the eyes of civil service candidates. This process culminated during the reign of Huizong (1100–1126), who established a new medical education facility designed to equal in standards and prestige the other schools under the Directorate of Education.

These changes in medical education had two important effects. First, the medical education curriculum relied mainly on the classical canons and promoted knowledge of Classical Medicine. To begin with, due to the limited number of students, this curriculum had little effect on medical practice in general. However, with the growing number of students, more and more physicians became familiar with the physiology of Classical Medicine and its conception of pathology as whole-body dysfunctions. Authors of medical books included these doctrines in their texts. Second, the transformation in medical education created an alternative path of studies for civil service examinees, especially those who did not fare well in other fields, and consequently

a new group of literati physicians emerged. Huizong, during the first two decades of the twelfth century, created an environment in which medicine, no longer an inferior art, was a career worthy of scholar-officials' sons. This trend continued into the Southern Song dynasty (1127–1276) and peaked in the Yuan dynasty (1260–1368), when few Chinese scholars could hope for generalist official posts due to the foreign Mongol rule.³⁴

Another important aspect of the imperial medical education system was an attempt to expand it to the periphery. For example, during the 1040s and the 1060s, the government attempted to establish local medical education. Fan Zhongyan, who established the medical education system, stressed local education as part of his initiative to disseminate knowledge. Accordingly, in 1044 the government issued an edict ordering the establishment of local education and the opening of schools at the level of the provinces and districts.³⁵ According to government records, the first group of local medical schools under imperial auspices opened in 1061, imitating the enrollment requirements and curricula of the Imperial Medical Service.³⁶ The goal of these medical schools was to educate a new generation of physicians destined to serve the population in their locality. Unfortunately, we have no records of how effective this government legislation was in the provinces.

In 1083, following Wang Anshi's reforms, the government issued edicts ordering local officials once again to establish medical schools in their localities, which should be modeled after the Imperial Medical Service.³⁷ This education system looked very promising from the issued edicts, but it never materialized. Once again, no record verifies the existence of such schools during the eleventh century. In a 1092 memorandum to the emperor Zhezong (r. 1085–1100), Yu Ce 虞策, the Exhorter of the Right, reported that:

the implementation in the prefectures and the districts did not match the instructions [of the edicts issued during the Jiayou reign (1056–1063)]. There are the positions holding the title of Student of General Medicine but there are no candidates to fill them, there is nobody who lectures and none to hear the transmitted knowledge.

He recommended that the governors of the prefectures should find those proficient in medicine and compel them to teach students. In reaction to this statement, Emperor Zhezong reissued the edict to establish local medical education and to reopen the schools.³⁸ The occasional anecdote aside, there is no evidence of any practical result outside the capital district.

Medical examinations during the Song

Examinations have been integral part of the Chinese education system from the Sui dynasty (581–618) on. This is all the more true during the Song dynasty when the civil service examination system became the major means of joining the rank of the scholar-official elite. The same holds true to the newly

established imperial medical education system, dating back to Fan Zhongyan's reforms. Fan proposed that students of the Imperial Medical Service should attend the examination only after completing three years of studies. The most successful students could enter the Hanlin Academy to continue their studies. However, in spite of the high expectations it seems that the graduates of the medical education system were still incompetent, and their practice resulted in unnecessary deaths due to wrong prescriptions and incorrect treatment.³⁹ In an attempt to correct this problem the government, in 1055, issued an edict changing the focus of the medical examinations. The new questions on the exams should draw from the ancient canons of medicine, including materia medica collections. The examinees were asked to show proficiency in the character of each disease and the recommended treatments, including drugs. Lastly, the format changed so "each exam [should] consist of ten questions, if the examinee answers [correctly] six questions out of the ten he qualifies."⁴⁰ In 1060, the Court of Imperial Sacrifices issued a similar edict, stressing the importance of the canons of Classical Medicine and the materia medica literature.⁴¹ This emphasis on examining students on their memorization of classical canons fits well with the government's investment in reviving Classical Medicine.

The medical examination system continued to evolve over the years. During Wang Anshi's reforms (1070s), each year the Imperial Medical Service examined 300 students. An innovative evaluation method was also introduced during this era, though it did not become prevalent until the early twelfth century. Students in the medical education system were assigned to treat students studying in other schools in the imperial education system. The overseeing instructors recorded the diagnosis, the administered treatment, and the outcome of the procedure. The proportion of patients each student cured determined whether he was promoted, demoted, or expelled.⁴²

A book entitled *Model Examination Papers for Diverse Courses Given by the Imperial Medical Service* (*Taiyiju zhuke chengwen* 太醫局諸科程文) sheds light on the content and structure of the medical examinations. This book, compiled in 1212 by He Daren 何大任 who headed the Imperial Medical Service, was a collection of the best papers from recent medical examinations. It was designed to aid the preparation of scholars and students of medicine outside the capital. The examinations from which He draws took place during the reign of Huizong (1100–1126). The questions in the examinations required the student to recite from memory applicable passages from the classics and to apply classical doctrines such as Yin-yang and Five Phases in hypothetical cases presented to him for diagnosis and treatment. For example, the third chapter of the book begins with the following question: "The *qi* of the liver flows to the eyes; when there is concord in the eye [functions], one can distinguish black and white." The adjoining sample answer includes among other things discussion on the liver's physiology, the application of Yin-yang reasoning, and quotations from the *Canon of Problems* and Emperor Huizong's *Canon of Sagely Benefaction*.⁴³

Medical education and the status of physicians during Emperor Huizong's reign

Medical education became a focal point of the government during Emperor Huizong's reign. He and his government not only expanded the existing medical education system, the Imperial Medical Service, but also added a unique medical school with more prestige designed to attract the sons of the elite. This school was modeled on the National University and, like it, was under the authority of the Directorate of Education (*guozijian* 國子監).

Huizong was troubled by the inadequate proficiency of physicians, who were competent in neither the doctrines of the ancient medical classics nor their application in clinical practice. In his view, the low status of medicine deterred the sons of the elite from pursuing medical careers, leaving the field to less competent candidates. To remedy this, during the early years of his reign, Huizong ordered the Advisory Office (*jiangyi si* 講議司) to look into the matter. The officials of the Advisory Office submitted a memorandum to the court in 1103 advocating several changes in medical education:

We, your humble officials, have ventured to study the three decades since 1068. During this era, the government established the Imperial Medical Service to educate students. By treating the medical disorders of [students of] the Three Schools⁴⁴ [of the Directorate of Education] and various military personnel, they did much good. However, [the school] was not established throughout the realm. This institution still exists and functions.

At present, there is still no means upgrade [the skills of] medical workers.⁴⁵ It would seem that the social status of people engaged in this occupation is not high. Literati consider medicine to be a disgraceful [occupation]. Intellectually and morally fastidious scholars do not study medicine or value its practice.⁴⁶

The authors of this memorandum believed that the existing system of medical education was satisfactory for teaching medicine, since the students successfully treated fellow students studying at other imperial schools, as well as some military personnel. The scope of the existing system of medical education, however, was too limited. The majority of medical schools were located in the capital, and thus other regions had limited means to train physicians. The authors were disturbed by the fact that members of the literate elite looked down on medicine as an occupation. The term these officials use to denote doctors ("medical workers" 醫工) implies that those in practice were technicians rather than scholars. The bureaucratic positions held by these "medical workers" were relatively low in rank in comparison to graduates of other imperial schools and consequently not attractive to members of the scholarly elite.⁴⁷ The ideal doctor, unlike these so-called "medical workers," would speak the language of their upper-class patients and explain illnesses

by reference to cosmological doctrines that were part of the patients' conception of the world and the body. In order to remedy these deficiencies, the officials of the Advisory Office recommended the establishment of a new medical school.

Establishing the medical school

Huizong's perception of a gap between what medical practice should be and what it was underlay his approach toward medical education and the social status of medicine. The officials of the Advisory Office who presented the problem to the throne also proposed a possible solution:

At the present we wish [to recommend] the establishment of a Medical School to train and educate superior physicians 上醫.⁴⁸ We observe that the Imperial Medical Service between 1068 and 1085 was under the supervision of the Office of Imperial Sacrifices. At present we recommend the separate establishment of the Medical School to foster superior physicians. This school cannot also be under the supervision of the Office of Imperial Sacrifice. We wish to make it comparable to the Three Schools [the National University, the Military School, and the Law School] and accordingly place it under the supervision of the Directorate of Education. It should also copy the [Three Hall] System used in the Three Schools.⁴⁹

Following these recommendations, Huizong established the Medical School 醫學 in 1103, placing it under the Directorate of Education.⁵⁰ By doing so, graduates of a government medical school were guaranteed civil service appointments for the first time.⁵¹ The Medical School was divided into Three Halls and applied a method of examinations similar to that of the National University. The permanent teaching staff included four Erudites and a head teacher for each of the Three Halls, which occupied a total of 300 students.⁵² Early in 1115, the government ordered each prefecture and district to establish a local branch of the Medical School, modeled on the central school. Later that year, the government ordered that medical Erudites replace Erudites of local medical schools, which should include separate classrooms. These schools were to be attached to the regular prefectural or county schools, but we do not know if the instructions were ever implemented.⁵³ The Three Halls system, the curriculum, and the required textbooks were to be similar to the central Medical School, but the examination system differed, in that it stressed the student's proficiency in the Confucian classics.⁵⁴ It is important to note that in spite of the slew of imperial edicts concerning local medical education we have no additional evidence that these local schools survived for any period of time.

Like other schools established by Huizong, the Medical School existed for less than twenty years. Even during this short span of time, it was abolished

and reestablished three times, probably for much the same reasons that the other imperial schools were.⁵⁵

The curriculum of the Medical School

The Medical School had three major branches of studies – internal and general medicine 方脈, acu-moxa therapy 鍼, and external medicine 瘍科. These three branches were subdivided into thirteen specialized fields. The teaching material was divided to general and specialized reading according to each branch. The general readings included major canonical works as well as clinical texts, drawing from the newly published editions of ancient medical treatises. The structure of the Medical School and its curriculum is presented in Table 2.1.

Table 2.1 The structure and curriculum of the Medical School

Branches ¹	Internal and general medicine 方脈	Acu-moxa therapy 鍼	External medicine 瘍科
Fields	Internal medicine 大方脈 Pediatrics 小方脈 Convulsive and paralytic diseases 風科	Acupuncture 鍼 Moxibustion 灸 Stomatology and dentistry 口齒 Laryngology 咽喉 Ophthalmology 眼 Otology 耳	Surface lesions 瘡腫 Orthopedics 傷折 Injuries from weapons 金瘡 Interdiction 書禁
Textbooks			
General reading	<i>Yellow Emperor's Inner Canon – Basic Questions</i> 黃帝素問 <i>Yellow Emperor's Canon of Eighty-one Problems</i> 黃帝八十一難經 <i>Origins and Symptoms of Medical Disorders</i> 巢氏病源 <i>Jiayou Era Materia Medica</i> 嘉祐本草 <i>Essential Prescriptions Worth a Thousand</i> 千金要方		
Specialized literature	<i>Canon of the Pulse</i> 脈經 <i>Treatise on Cold Damage Disorders</i> ²	<i>“A–B” Canon of the Yellow Emperor</i> 黃帝三部針灸經 <i>Nagarjuna's Discussions on Ophthalmology</i> 龍木論 ³	<i>“A–B” Canon of the Yellow Emperor Supplementary Prescriptions Worth a Thousand</i> 千金翼方

Source: Two imperial edicts recorded in SS 157: 3689; SHY *chongru* 3:11–13.

Notes

¹ SHY *chongru* 3:11b–12a.

² The inclusion of the *Treatise on Cold Damage Disorders* here is not accidental. By this time this text, which was rarely available to physicians and scholar-officials, became widely available. See Chapter 3.

³ Regarding this title see Li Jingwei 1995: 391, 1352.

The inclusion of the canons of Classical Medicine, the *Treatise on Cold Damage Disorders*, and Tang-dynasty formularies in the Medical School's curriculum indicates a high esteem for the ancient medical classics. This convention should have provided the students with a firm grasp of the foundation of medicine that were then supplemented with the more specialized texts assigned to each branch of study. In addition to the theoretical basis, the course of study at the Medical School, similar to that of the Imperial Medical Service before it, included clinical experience. Students from the major universities in the capital were referred to the medical students for treatment when ill. The medical students were evaluated based on their diagnosis, choice of treatment and its application, and, of course, on the outcome of the treatment.⁵⁶

Examinations in the Medical School

The Medical School made extensive use of examinations. Besides entrance examination 補試, there were progress exams; one given by the school 私試 and one given by imperially dispatched examiner 公試. In order to succeed in the entrance examination the candidate had to show basic medical knowledge by answering a number of hypothetical questions regarding diagnosis or therapy of possible medical cases.⁵⁷

The head of the Medical School himself wrote the questions for the school's progress examinations, which were given every three months. Two parts of the exam tested the students' knowledge of the medical classics; the third part tested their analytical and clinical skills. The progress examination, given by an imperially dispatched examiner, resembled the school's examination but consisted of only two parts, one on knowledge of the medical classics and one on clinical skills. The results of the examinations by the school and by the imperial examiner determined the students' placement in the Inner Hall or in the Upper Hall. The exams included three types of questions: written elucidation questions, elucidation about the meaning of medical texts, and therapeutic questions on hypothetical cases, with emphasis on the last. Students who did well in questions about diagnosing hypothetical cases were supposed to receive priority in promotion. To complete the clinical aspect of the examinations, examiners evaluated the students' success in treating patients.⁵⁸

Regulations issued in the years 1111 and 1113 show that local medical officers had been placed under the control of the newly established Supervisorate of Education 提舉學事. This was an attempt to include all examinations – civil service examinations and other special examinations to recruit technical officers – under the control of the Directorate of Education and the Office of Educational Intendants.⁵⁹

New medical titles and official positions

In order to raise the status of medicine and physicians, Huizong's court changed the titles of medical positions to resemble those of the civil service. During

the first century of the Song, physicians often were given military titles.⁶⁰ Between the years 1111 and 1117, the government established a number of unique titles, replacing the existing ones, to be assigned to doctors and graduates of the Medical School. This measure sent a clear message to the officials and the graduates of the Imperial schools that medicine was an independent field of knowledge.⁶¹ It also enhanced the prestige of graduate physicians. The new titles, and their old equivalents, are listed in Table 2.2.

The government also increased the number of medical positions, thus ensuring that graduates of the Medical School would be assigned medical positions. In 1114, a court official reported that “we, your officials, humbly observe that at present the number of officials serving at the Medical Institute 翰林醫官 has expanded significantly since the Xining [1068–1077] and Yuanfeng

Table 2.2 Titles for graduates of the Medical School

<i>New title</i> (新階)	<i>Old title</i> (舊階)
Grand Master of Health and Peace 和安大夫 Grand Master of Perfect Health 成和大夫 Grand Master of Complete Peace 成安大夫 Grand Master of Complete Wholeness 成全大夫	Commissioner of the Armory 軍器庫使
Grand Master of Preservation and Harmony 保和大夫	Commissioner of West Office of Embroidery 西綾錦使
Grand Master of Preservation and Peace 保安大夫	Monopoly Exchange Commissioner 權易使
Excellent Physician of the Medical Institute 翰林良醫	Commissioner of the Medical Institute 翰林醫官使
Gentleman for Health and Peace 保安郎 Gentleman for Perfect Health 成和郎 Gentleman for Complete Peace 成安郎 Gentleman for Complete Wholeness 成全郎	Vice Commissioner of the Armory 軍器庫付使
Gentleman for Preservation and Harmony 保和郎	Vice Commissioner of West Office of Embroidery 西綾錦付錦
Gentleman for Preservation and Peace 保安郎	Monopoly Exchange Vice Commissioner 權易付使
Incumbent Physician of the Medical Institute 翰林醫正	Vice Commissioner of the Medical Institute 翰林醫官付使

Source: SS 169:4059.

[1078–1085] reign periods.”⁶² The report specified the increase in officials in medical positions. For example, the number of Commissioners of the Medical Institute increased from six to thirty-three; the number of Aides to the Imperial Physician 太醫丞 increased from six to forty-eight. Altogether, the number of medical officials in the Medical Institute reached 732.

An innovative title – “Literati Physicians”

The establishment of the Medical School, the designation of new official titles for graduates that went along with it, and the increase in the number of medical positions, did not immediately induce the sons of the elite to study medicine. In 1113, the court tried a new way to attract them by coining a new term for doctors, Literati Physicians (*ruyi* 儒醫),⁶³ as stated in an imperial edict:

In the early stages of the establishment of the School, we emphasized the aim of drawing on a wide range of literati physicians. We humbly observe that in various prefectures there are students in the Inner and Outer Halls who have mastered medical skills. We have instructed all instructors in the prefectures to be aware of them and to report them to the Supervisorate of Education, including their names in a memorial to the throne.⁶⁴

There is more to this edict than meets the eye. “School” refers to the Medical School, but to whom does the term “literati physicians” refer? When the author of the edict notes that the students of the prefectural schools’ Inner and Outer Halls are proficient in medicine, he could not be referring to medical students since the government ordered the establishment of local Medical Schools in the prefectures only in 1115. It seems that the author refers to students of mainstream education who were also proficient in medicine. Those were the students targeted as candidates for the Medical School in the capital and designated to become literati physicians.⁶⁵

In 1117, the term literati physician is mentioned once again in an official record. This time, however, the connection to the Medical School is much more pronounced. In a memorandum dating to the eighth month of 1117, an official stated that:

I humbly observe in its education of gentlemen, the Medical School, set up by the court, gives those who study the Confucian arts proficiency in medical canons [literally, the *Yellow Emperor’s Inner Canon*], diagnosis and treatment. They are called Literati Physicians; their benefit is extremely great.⁶⁶

The authors of both the edict and the memorandum linked Confucian scholarship with medicine and medical practice. This marriage of Confucian learning and medicine lasted from Huizong’s time to the present. Although

some present-day scholars have attempted to show that this marriage predates Huizong, their evidence is weak. From Huizong's reign onward, the usage of the term Literati Physicians became increasingly common in both literary and medical works through the Southern Song, Yuan, and Ming dynasties.⁶⁷

In addition to the measures meant to attract members of the elite to study medicine, Huizong added a unique measure aimed to familiarize regular students studying at the Imperial University with medical doctrines. In 1117, he wrote that "Orthodox scholars use [the Dao] to order the world, and gentlemen use [the Tao] to repair the body." The text continues discussing the importance of other traditions of knowledge such as Daoism and its diverse manifestations throughout the ages. Later in the text, Huizong ordered that

all the students in all the schools in the empire, according to their affiliation, should add one great and one small canon [to their curriculum] from those listed below. The great canons are the *Yellow Emperor's Inner Canon* and the *Dao De Jing* [i.e., the *Book of Laozi*]. The small canons are the *Book of Zhuangzi* and the *Book of Liezi*.⁶⁸

Another record from the same year states that the *Yellow Emperor's Inner Canon* became part of the curriculum in all the imperial schools.⁶⁹ In other words, Huizong ordered to include in the curriculum of the general education system the most important canon of medicine, the one that serves, even to the present, as the doctrinal foundation of medicine.⁷⁰

Confucianism and caring for the people: early public health

So far we have seen that the scholar-officials' interest in medicine led to the establishment of a medical education and examination system. After a number of decades, this system evolved to include two medical schools. The scholar-officials' interest in medicine was not limited to medical education. Since caring for the people was one of the major tasks of the Confucian scholar-officials throughout history, and especially during the Northern Song dynasty, they promoted policies concerning enhancement of public health.

Prior to the Song, only rarely do we find offices that are linked to any aspect of medicine besides education or maintaining the health of the imperial family. Government institutions throughout Chinese history did provide relief when disasters struck the empire. But this type of relief was by definition intermittent. The imperial government usually neglected everyday poor relief. Other organizations, mostly religious, filled this void by establishing charity institutions for the poor, mostly with the intention of attracting either new followers or monks and nuns. We find Daoist institutions stepping in during the late Han dynasty (206 BCE–220 CE) and mostly Buddhist ones replacing them from the fifth century through the Tang dynasty (618–907) up to the Song. Charity institutions were not the only facet of medicine that the imperial government ignored.

During the early Song, this trend continued. Imperial edicts and official documents from the first half of the Northern Song dynasty include almost no reference to charity institutions. In other words, the early Song was not different from former dynasties in regard to public health management. Nevertheless, as in many other aspects of the government, change began during the Qingli reforms of the 1040s. Once again we come across Fan Zhongyan, who expressed the need for an imperial government intervention to support public needs.⁷¹

The first record discussing reforms of charity institutions during the Song dates to Emperor Yingzong's reign (r. 1063–1067). The official Song history describes the shortcomings of the existing charity institutions saying that

although the elderly, the sick, the orphaned, and the poor have the East and West Blessed Fields Houses 福田院 to provide them alms and food, [each of these houses] can only provide for the needs of twenty-four people [at one time].⁷²

The record goes on to describe an initiative to reform this endeavor. The government ordered the enlargement of the existing two Houses so that each could support up to 300 people a day. The government also established two new Houses, titled the Southern and the Northern, to further expand operations. However, even with the expanded operations of these charity institutions, which still retained the Buddhist title of “Blessed Fields Houses,” the total number of people supportable by the system at any given moment totaled only 1,200. The total expenditure allotted by the government to the project amounted to first 5 million and later 8 million strings of cash.⁷³ Even though the expansion was significant mathematically (a twenty-four-fold increase) it was almost insignificant in reality since the population at Kaifeng, the Song capital where these Houses functioned, stood at over a million people, not including non-residents. Although records are limited, it seems that in 1057 an order was issued to establish local offices, titled Public Welfare Granaries 廣惠倉, hoping to provide for the poor in all prefectures and districts. A later record that mentions these Granaries suggests that some of them were indeed installed.⁷⁴ The most significant change in the government-sponsored charity institutions came during the reign of Emperor Huizong, which will be discussed below.

Charity institutions were not the only innovative government operations that impacted public health during the Northern Song dynasty. Controlling the drug market was another aspect of benefiting the people. During Wang Anshi's reforms in the 1070s, the Song government added medical drugs to its list of growing state-managed monopolies. In order to regulate the prices of drugs, to ensure the continuous supply of drugs, and to provide medicine during times of epidemics, Wang established an innovative imperial office: the Imperial Pharmacy (see Chapter 4).

Scholar-officials took interest in public health due to the changing scene of Song society. The growing urbanization, the expansion of trade, and the

shifting of population predominantly, but not solely, to the south all created new demands on the administration. The growing number of epidemics during the second half of the eleventh century (see Chapter 3) forced the imperial government and local official to take action by establishing charity.

It seems that the most important factor that heightened government officials' interest in charity- or health-related institutions has to do with an ideological change in the upper echelon of society. Both the emperors and the officialdom perceived their role in ruling the empire and managing its affairs differently from their predecessors. They attempted to act as true virtuous Confucian rulers and scholars. Put in the words of Fan Zhongyan, "An educated person should suffer before anyone else suffers and should enjoy only after everyone else has enjoyed."⁷⁵ Fan's remark came during a time when Confucianism returned to prominence and with it the stress on benevolence, humane action, and justice. Zhou Dunyi 周敦頤 (1017–1073), a prominent Northern Song Neo-Confucian thinker, represents this trend well when he says:

Justice, uprightness, decisiveness, strictness, and firmness of action are examples of strength that is good. . . . Kindness, mildness, and humility are examples of weakness that is good. . . . Therefore the sage institutes education so as to enable people to transform their evil by themselves.⁷⁶

Confucian ethic maintains that scholar-officials have the responsibility to educate the common people and to take care of their needs. The injunction to educate has two facets. First, there is the formal education, such as the new medical education system discussed above. But the commoners are also to be educated about the correct codes of behavior. This was also true with regard to medicine. Song officials continually attempted, though with only limited success, as some records indicate, to bestow the correct codes of behavior when a family member became sick. The government preached that literate physicians should be consulted rather than the local spirit-medium. The government also was adamant that people should not desert their sick and dying relatives.⁷⁷

Another side of the Confucian scholar-official's responsibility was taking care of the people's needs and health, including feeding. In modern terms this often falls under charity organizations or public-health management.

For the new scholar-official, good governance included helping the poor as well as preventing disasters and providing relief for them when they struck. Physicians were the example to follow as stated by Fan Zhongyan:

As a model for being able to implement the mindset of saving the people and benefiting [all] things, no one is [better than] a good physician. Consequently, the gentleman should be like a good physician. From the upper aspect use this knowledge to cure the diseases of the people and relatives, from the lower aspect save the poor from calamities, and from the middle aspect protect the body and extend perfection.⁷⁸

The equation of the scholar's responsibility to safeguard the people and the physician as the model was not unique to Fan. Another example comes from Lin Yi 林億, a scholar-official who served as an editor in the Bureau for Revising Medical Texts (see Chapter 3). In a preface to a medical book which he revised, he comments that,

Those who know the heaven, the earth, and the people are called Literate [or Confucian 儒], those who know the heaven, the earth, but not the people are called artisans. Physicians, though referred to as artisans, in reality their occupation is literate [or Confucian].⁷⁹

Another example comes from an official named Zhao Conggu 趙從古 (fl. eleventh century), who served as the Chief Steward of the Palace Medical Service (*Shangyao fengyu* 尚藥奉御):

If medicine is compared with Confucianism, it is admittedly inferior. Yet, advancing life cannot be said to be just another [occupation of] leisure. . . . Confucians know rites and righteousness; physicians know [what is] beneficial and harmful [to the body]. Not cultivating rites and righteousness obscures Mencius' teachings. Not separating between beneficial and harmful injures the life of the people.⁸⁰

Zhao states that although medicine is inferior to Confucianism it is still a unique art, one that is comparable to the teaching of Mencius. The conviction that the responsibility of scholar-officials is to care and safeguard the people mandated them to propose and implement innovative policies, such as establishing of the Imperial Pharmacy, which provided a large assortment of medications at stable prices, and other charity institutions.⁸¹

Emperor Huizong (r. 1100–1126) and his government represent this new Confucian-medical conviction better than anyone else during the Northern Song dynasty. He followed the path of showing interest in medicine set by his predecessors, but he went further by taking it upon himself to change medicine's role and status in society and government. Huizong reformed medicine from almost every possible aspect. He created public hospitals and cemeteries and established new branches of the Imperial Pharmacy. Taken together, these institutions constituted an attempt to improve public health and to lessen the impact of epidemics.

Systematizing charity institutions during Emperor Huizong's reign

The Northern Song dynasty is characterized by two types of innovative imperial institutions that promoted health and were tied to medicine – the Imperial Pharmacy and a Poorhouse system of charity institutions. The first, established in 1076, served primarily as an economic institution with the goal of regulating markets. During the reign of Huizong, the Pharmacy's name

changed to the Bureau for Benefiting the People (*Huimin ju* 惠民局) indicating that it had transformed into a public health and medical institutions (see Chapter 4). The second institution included poorhouses, public hospitals, and paupers' cemeteries. The poorhouse was more of a charity organization, whereas the latter two promoted public health by providing medical services and burial for the poor, as well as for travelers with no family to care for. The rationale behind these institutions was probably twofold. On the one hand, they constituted an attempt to provide relief for the poor or to get them off the streets. On the other hand, it seems that Huizong's deep concern with and understanding of medicine, and his perception that medical knowledge was part of the kingly Dao, enabled him to use his imperial authority to design and implement a public health system oriented to benefit the people and prevent outbreak of epidemics.

In 1985, 1993, and 1994, archeologists conducted ongoing excavations at a site of an ancient graveyard located on a terrace at Xiangyang in Shanxi province. This graveyard was not an ordinary cemetery; it was part of a twelfth-century government-sponsored and -operated public health and poor relief system. This archeological discovery of a paupers' cemetery is the only "hard evidence" we have of a unique and innovative attempt by an emperor to employ his authority in order to install a government-sponsored and -operated public health program.

In Western discussions of the history of public health as an organized governmental activity, historians of medicine generally begin with the Western Renaissance. This is despite the fact that isolation as a means of protection from epidemics began in Italy in the fourteenth century, when a number of city-states introduced quarantine to protect themselves against the major epidemic of bubonic plague that began in 1346, commonly known as the Black Death.⁸² This initiative, however, did not involve public sanitation. It seems that in China the systematization of public health may have occurred earlier.

The Poorhouse System

During the first four years of Huizong's rule (1101–1104), the government instituted a new system for poor relief, the Poorhouse System 居養法 (literally translated as the Residential and Support System).⁸³ This Poorhouse System was much more than a simple charity organization. It was designed to be an elaborate public health system. Was this indeed a comprehensive system or just a set of disjointed projects? In two edicts, dating to 1106 and 1112, Huizong states his perception of these institutions function as parts of a complete system:

At present, widows and widowers, the orphaned, and sole survivors – all have [access to] the Poorhouse System. [The state] uses it to aid the poor. But what if they are sick and have no medicine or doctor? To solve this we established the Peace and Relief Hospitals. To deal with poor

men who die and have no [means of] burial, we established the Paupers' Cemetery. My mind is deeply [concerned] with the people.⁸⁴

The widows and widowers, the orphaned and sole survivors, have the Poorhouses for residence and support. The sick have the Hospitals for rest and relief.⁸⁵ Those who have died have the Paupers' Cemeteries for burial. This is the foundation of the kingly way [Dao]. I have ordered the implementation of this system, but officials have not followed my orders.⁸⁶

The language that Huizong uses here, as well as in additional records, suggests that he perceived the three institutions as complementary parts of a single, integrated system.⁸⁷ It also demonstrates his conviction that implementing a public health system was part of the sagely way of ruling the state.

The Poorhouse System included three separate institutions. The first was the Poorhouse 居養院, literally translated as the Reside and Support House, a hospice designed to provide shelter and food to the indigent.⁸⁸ The second was the Peace and Relief Hospital 安濟坊, literally translated as the Rest and Relief Office, a charity clinic designed to provide free medical care for those who could not afford medical treatment. The third was the Paupers' Cemetery 漏澤園, literally translated as the Left Out of Favor Funerary Park, an institution that provided free burial plots and services for both the poor and travelers who died away from home without anyone to take care of their funeral arrangements.⁸⁹

The government financed the Poorhouse System primarily by confiscating property of the heirless dead.⁹⁰ This new financial source enabled the government to establish additional facilities and aid more people than its Tang dynasty and early Song dynasty privately funded forerunners had. In addition, the new system functioned on a year-round basis, unlike its precursors, which operated only during emergencies. It seems that one of the major goals of the system was to publically manifest the Northern Song government's virtues in caring for its people.

Poorhouses

The origins of the poorhouses can actually be traced to the last years of the reign of Emperor Zhezong (r. 1085–1100). An imperial edict, dating to 1098, describes a governmental charity system, designed to provide shelter and health care for the poor:

The edict from the Office for the Editing of Imperial Pronouncements said: "Regarding widows, widowers, the orphaned, sole survivors, the poor, and those who cannot support themselves, it is the duty of the Prefects, General-controllers, Magistrates, and Assistants to inspect and verify that officials are responsible for supporting and housing them. Regarding those who are sick they [should] provide them with medications.

Circuit Supervisors when they arrive they [should] investigate, inspect, and observe [that officials] provide the [allotted] residence of childless families to [those that have to be resided and supported]. If there are not enough [residences for] childless families, [then] use the residence of the officials. If the property of the childless families is to be used, they should be compensated for their expenses with no limitation. They should rely on the Stabilization System to provide them with rice and beans. If the emperor is not satisfied, then use the Stabilization interest funds to compliment [their compensation]. If officials provide residence to those who can maintain themselves they will be dismissed from office.” Follow this!⁹¹

As far as we know, this order was never implemented since Zhezong passed away in 1100. His successor, Huizong, implemented such a policy which intended the poorhouses to provide food, clothing, and shelter to the needy, who were defined as the aged poor, widows, orphans, abandoned children, and all those otherwise unable to care for themselves. The forms of aid varied according to local conditions and the age of the person.⁹² Generally, each adult was to be allotted one sheng 升 of rice, which is approximately 0.7 liters, and ten strings of cash per day, with children receiving half as much.⁹³ During the winter months, an additional five cash strings per day was allotted for fuel. Over the years, poorhouses also provided residents with clothing, bedding, utensils, and at times even mosquito nets. The scope of relief was extended during the winter when the need for shelter became more acute, especially in northern China.⁹⁴ In summary, the poorhouses mainly served as a means of getting poor people off the streets, having only indirect effect, in comparison to the other two institutions, on public health.

Peace and Relief Hospitals

The Peace and Relief Hospitals, established in 1102, were not the first hospital of the Song dynasty. In 1089, Su Shi 蘇軾 (1036–1101), following his appointment as the prefect of Hangzhou and being confronted with the deep poverty and a high rate of diseases among the population, established in Hangzhou the Peace and Happiness Hospital 安樂坊. This infirmary was probably China's first specialized charity clinic. Su funded the clinic mostly from private funds. According to surviving records, during a three-year span of operation, the clinic treated without charge over 1,000 poor patients. During Huizong's reign it was incorporated into the national system of poor relief.⁹⁵

Huizong's government established the Peace and Relief Hospitals in response to a memorandum submitted to the court in 1102 by Wu Juhou 吳居厚 (1037–1113), the governor of the capital prefecture.⁹⁶ Wu urged that an institution, for which he suggested the title “Rest and Recuperation Houses” 將理院, be established in all prefectures to aid the poor.⁹⁷ Wu's memorandum specified:

The Rest and Recuperation Houses ought to take the sick and separate them according to the severity of their illness and then place them in different wards. This is done to prevent contagion. There should also be a kitchen to decoct drugs and prepare food and drink for the patients. The living quarters of the attendants and the wards of the patients should be separated. Each of the wards, which are differentiated based on the severity of the patients' disease, should include up to ten rooms.⁹⁸

Wu's proposal constitutes one of the earliest mentions of quarantining patients in order to prevent contagion. However, it is important to note that these quarantining measures were applied only to the indigent, and we do not find them in other records.⁹⁹ To make these hospitals self-sufficient, they were to have a pharmacy to prepare medicinal formulas and a kitchen to prepare food for the patients and to boil the medicinal formulas for patients' consumption.

Contrary to the more common procedure of starting such facilities in the capital, the network of hospitals was established first in the provinces. For example, we have a record stating that a hospital was established in Hebei in 1102.¹⁰⁰ Another source records that such a hospital was established in Hangzhou in 1104.¹⁰¹ Huizong himself questioned leaving the capital out of this new network. In 1105 he personally wrote an edict to rectify the situation.

The capital is the heart of the land, the place where the emperor's transformative influence begins. Concerning widows and widowers, the orphaned, and sole survivors, along with those who are poor and without anyone to turn to in the rest of the country, the Poorhouse System has been put in place, but it has not yet reached the capital. This misses the idea of beginning with what is close at hand and then extending it to distant places. Now, although we have Blessed Fields Houses, they cannot care for many. At the coldest and hottest times of the year, the poor without anyone to turn to, as well as the ill, may lack places to live, which pains me deeply. I order Kaifeng prefecture to follow the law used in the outer prefectures to establish Poorhouses for widows and widowers, orphans, and sole survivors, as well as Peace and Relief Hospitals, thus according with my intentions.¹⁰²

The Peace and Relief Hospitals were designed to have several wards with administrators assigned to manage them. Each physician in a hospital was required to keep accurate records of the cases he treated, listing the number of patients who were cured and the number who died under their treatment. These records would be examined at the end of the year to evaluate the status of each physician based on his success rate.¹⁰³ Physicians would be compensated financially when they were successful in their treatment.¹⁰⁴ Each clinic was to be managed by a staff of four people who were replaced seasonally.¹⁰⁵ In summary, the hospitals treated the poor and were designed

to prevent the outbreak of contagious diseases and epidemics. Nevertheless, it should be kept in mind that we do not know how widespread was the implementation of this initiative.

Paupers' Cemetery

Bodies lying in the streets posed an even more pressing hazard to public health than did the sick. The Secretary of the Court 中書 reported in 1104,

Prefectures and counties [in the empire] all have poor people who are without means to cover their own burial when they die. Also, there are visitors [from out of town] who die and their corpses lie exposed in the streets untouched. This is extremely sad and distressing.¹⁰⁶

The sanitation problems associated with the disposal of the bodies of the indigent as well as the traditional Confucian emphasis on filial piety made this matter one of great official concern.

The need for public cemeteries was made more acute by the social and geographical mobility of Northern Song China. Care for the sick and burial of the dead had long been viewed as family responsibilities in China, but the increasingly commercial and mobile nature of Song society brought merchants and opportunity-seekers to the cities without their kin. As early as the 1020s, the Song government began buying up plots of land to provide burial grounds for the poor, people out of town, and people without family. These early, scattered efforts to set up cemeteries for the poor were consolidated and institutionalized during the first years of Huizong's reign, much as other relief measures were.¹⁰⁷

The Paupers' Cemeteries were formally established in 1104. Originally, they were conceived as an improvement on the precedent set in Shenzong's reign (1067–1085).¹⁰⁸ Each prefecture was ordered to establish a wall-enclosed cemetery on a plot of untillable public land. The prefecture appointed officials to keep records and maps 圖籍 of the cemeteries and to parcel out the burial plots when needed. Each body buried in these cemeteries was to be allotted an eight-*chi* [尺] plot (approximately 2.46 meters) and a coffin. Each grave was to be dug at least three *chi* deep (approximately 0.92 meters) “to ensure that the corpse will not be exposed.”¹⁰⁹ Each grave was provided with a marker recording the name, age, dates and any other known details about the deceased. A central shrine was to be set up in each cemetery to provide a place for ancestral sacrifices.¹¹⁰

Until the twentieth century, the majority of the information we had on the Poorhouse System came from government documents and edicts. This put in question whether these unique institutions indeed existed or were only the fancy of presumptuous bureaucrats, whose edicts were never implemented. During the 1960s, archeologists conducting excavations in Shanxi province discovered the first evidence of the system – a Song-dynasty Paupers'



Figure 2.1 Photo of excavated Paupers' Cemetery in Shanxi province
Source: Sanmen xiashi wenwu gongzuodui 1999, Plates, p. 1.

Cemetery. In later excavations, mentioned above, conducted in 1985, 1993, and 1994, archeologists unearthed 849 tombs at the site with records of burial dating to between 1105 and 1116. From these excavations we have learned that many bodies were buried in clay coffins.¹¹¹ The fact that Paupers' Cemeteries existed in such distant location from the capital suggests that the system penetrated deep into the empire. In summary, the cemeteries provided respectable burial to the poor and to people without relatives while ensuring that corpses will not lie in the streets.

The demise of the Poorhouse System

The idea behind the Poorhouse System was altruistic and noble, but costs were high and corruption a persistent problem. The first mention of corruption appears in 1105, when a report was made that prefectural officials were not

keeping proper records of relief operations. Subsequently, inspectors were sent to check into the actual number of people being handled.¹¹² Surviving records mention local officials padding the lists of relief recipients with names of healthy people or dead people in order to obtain more support from the government for their own private use. Punishments for corruption often were harsh and included public beating.¹¹³ Even Huizong lamented that officials did not carry out the system the way it was designed and thus brought grief instead of relief to the indigent.¹¹⁴ There is corroborating evidence that corruption was widespread. The following testimony, dating to 1114, described the situation of the Poorhouse System:

I have ascertained that in the various prefectures the people who actually are elderly and who should be placed in a Poorhouse, those who actually are sick and should be hospitalized in a Peace and Relief Hospital, and those who actually should receive aid, suffer because those with family connections enter false claims and bend the regulations at will. The local officials protect one another making it impossible to investigate.¹¹⁵

During Huizong's later years, the government cut back allocations to the public health system. Accordingly, the number of poor and indigent people aided by the system declined significantly. Although Huizong's public health system had to be cut back, it remained in place for at least a few more decades during the Southern Song. Its lasting impact, however, seems to have been limited.

Conclusion

The scholar-officials' interest in medicine led to the establishment of a medical education and examination system. This system evolved to include two major schools, one put on a par with the Imperial University under the auspices of the Directorate of Education. By the end of the Northern Song dynasty the government's revision and printing of medical books, coupled with assigning them to the curriculum of the medical education system, set the standards for medical knowledge. The establishments of administrative positions for medical graduates and changing the official titles of the positions further enhanced the prestige of medicine. We do not know, however, how many sons of the elite chose the path of studying medicine.

Promoting medical education has a Confucian flavor to it, especially if we keep in mind that the canons of Classical Medicine and other ancient canons took a predominant place in the medical schools' curriculum. Revising classical canons and instilling their contents and doctrines by means of medical education suited the scholastic aspect of Confucianism, since it provided medical literature for the educated elite. It also attempted, though with unknown success, to educate new generations of literate doctors with candidates coming both from the elite and from the common people. The

self-perception of the scholar-officials during the Northern Song dynasty regarding the notion of what a “good official” should be, however, is much broader in scope. In addition to promoting education, the scholar-official’s duties also included, given Mencius’ notion of benevolence, caring for the people. This care for the people is often manifested by means of establishing imperial institutions that brought “order” to the world.¹¹⁶ Thus they promoted, with the encouragements and aid of the imperial court, public health institutions.

A good example of the role of medicine in the imperial and the scholar-officials’ administration comes in the preface Emperor Huizong wrote to his *Canon of Sagely Benefaction*, where he summarized his government’s medical policy:

In conclusion, in order to implement the art of the Way [i.e., correct governing], I supported the upright and the honest and discarded the crooked and the dishonest. I established [medical] schools and set up official positions [for medicine], so scores of gentlemen could be educated [in it]. [I appointed] officials who distribute grain rations without being requested, who save the sick, and who bury those who died. Then, I promulgated [these actions] via government decrees and deposited it at government offices. This need not be discussed again.¹¹⁷

Following this passage by Huizong, and still part of the preface, comes an annotation and clarification of Huizong’s words by Wu Ti 吳禔, who was an official physician serving in the Directorate of Education.

The art of the Way [i.e., correct governance] is under the heavens. Only Your Majesty the august emperor has implemented it. It can be seen in your laws and moral standards. For example you supported the upright and discarded the crooked, thereby benevolently aiding and supporting the well-balanced construction of the upright.

You established [medical] schools and set up official positions [for medicine], so scores of gentlemen could be educated [in medicine]. Then, you established the [medical] schools both in the center and the periphery. There are Poorhouses that distribute food without being requested, there are the Peace and Relief Hospitals that treat diseases, and there are Paupers’ Cemeteries that bury the dead. For managing these institutions there is a system, for controlling them there are officials, extending from the center to the periphery.¹¹⁸

These notes hint on the intricate relations between emperors and their officials. The former sets the policy sometimes in vague words, while the latter sets the actual edicts and oversees their implementation. Thus the scholar-official saw all these seemingly disparate measures as part of an overarching policy to change the face of medicine.

3 Epidemics and medicine

The revival of Cold Damage Disorders

In the previous chapter we saw how imperial interest in medicine brought it to the foreground in the eyes of the officials more than ever before. However, although medicine was on its agenda, it did not become a focal point until the middle of the eleventh century, more specifically during the reign of Emperor Renzong (1022–1063). It took an external force, a wave of epidemics, to compel Renzong's government to implement new policy that had direct bearing on medicine. This policy resulted in the creation of a new medical environment, due to the revival of an ancient medical knowledge. This new setting was uncharted water for both physicians and officials.

During the Northern Song dynasty we find an increase in the number of recorded epidemics, mostly southern in origin. From the imperial perspective, these epidemics were very disturbing, especially in the eyes of the emperor. During the second half of emperor Renzong's reign (1041–1063),

due to a great epidemic in the capital, Emperor Renzong ordered the Imperial Physician to prepare medications. He also instructed [the Imperial Physician] to chop two rhinoceros horns that were in the palace [in order to prepare medications]. He [the emperor] supervised this. Once one horn was chopped to pieces, a palace eunuch named Li Shun 李舜 pled Renzong to spare one rhino horn to serve as offering at the imperial altar. Renzong replied to him saying: "How can I value expensive and unique artifacts and belittle the common people?" He then ordered to finish chopping the second horn.¹

As this anecdote suggests, emperor Renzong was willing to sacrifice rare and sacred objects if this could aid somehow in curing the people's epidemic. In addition to destroying sacred objects for a possible cure, however, the Northern Song government also provided financial and medical relief to areas affected by the pestilence.

This chapter focuses on mapping the occurrences of epidemics during the Northern Song dynasty. It also suggests that a particular incident of recurring epidemics, more precisely a wave of epidemics occurring over a decade and a half during the eleventh century, brought Emperor Renzong and his

government to implement an innovative and unorthodox policy to cope with them. It is unclear what caused this wave of epidemics: it may have been the ongoing population shift to south China, which would create a new epidemiological frontier as the region hosted a larger number of endemic diseases than the northern part of China; it may also have been the rising volume of trade, or the increasing length of trade routes, or even the growing urbanization. Or it was some other unrelated reason, even possibly a random coincidence. What we do know, however, is that Emperor Renzong, his government and its officials took these epidemics as a serious threat which had to be dealt with swiftly in order to preserve the emperor's heavenly mandate.

The imperial government's response was to establish a new bureau – the Bureau for Revising Medical Texts (*Jiaozheng yishu ju* 校正醫書局, in short: the Bureau) – devoted to the task of revising and printing medical literature.² The Bureau's official editors, according to their own testimony, searched for medical texts that could address these epidemics – or “Cold Damage Disorders” (*shanghan* 傷寒), as they defined them.³ My claim is that because some of the Bureau's leading editors were familiar with Cold Damage Disorders before they were appointed, it is not surprising that they chose to revise and print, among other canons, an 800 year-old work, the *Treatise on Cold Damage Disorders* (or *Shanghan lun* 傷寒論, hereafter the *Treatise*).⁴ As its doctrines and practices were not widely known among physicians, the publication of this new edition of the *Treatise* significantly affected the Song medical scene. The new medical literature that the Bureau published challenged physicians and scholar-officials alike to cope with new conceptions of disease, catalyzing a transformation that reshaped medical theory, practice, and training during the course of this era.⁵

This chapter is divided into three sections: section A is a historical epidemiological study of the Northern Song period. Section B concentrates on the establishment, organization, and publications of the Bureau. Section C focuses on the *Treatise*, providing a history of the original text and of its Northern Song edition, shedding light on the possible reasons why Song officials selected it for publication.

Setting the stage: epidemics, government actions, and medicine

Throughout history, epidemics have been responsible for a sizeable proportion of the fatalities suffered by humankind, certainly more than wars or other types of violence. In fact, epidemics have shaped human history in more than one way. When a disease causes illness or death to an individual, the social effect is usually minimal. When huge segments of a population become ill and many die from an outbreak of contagious disease, the social, economic, and political consequences are enormous. The plague that struck Europe during the fourteenth century, usually called the “Black Death,” is probably the best known, but it is certainly not the only one. Epidemics have played a role

not only in causing deaths directly, but also in conquests and in change of governments.

In his groundbreaking work, *Plagues and Peoples*, William McNeill examined the impact of infectious diseases and epidemics on world history in different global and historical contexts.⁶ According to McNeill, epidemics and people were and – as has been proven time and again – still are inextricably linked. A disease cannot be studied only from a “bio-medical” standpoint, disregarding social, economic, cultural and political factors. Human changes of existing ecosystems, such as population relocation, urbanization, and increase in trade volume, are decisive issues in the spread and transmission of epidemics.

Labelling a disease as “epidemic” is not indifferent. Dictionaries often define an epidemic as a widespread disease prevalent among a population or a community at a particular time and produced by a particular cause not generally present in the affected area.⁷ Epidemics are usually contrasted with endemic diseases, i.e., diseases that are constantly or regularly found among a specified population or in a specified country. These definitions are problematic because they fail to cover all the common usages of the term epidemic. For example, some epidemics, most recently AIDS, spread slowly and affect their victims only after a prolonged period of time. Others, such as the Severe Acute Respiratory Syndrome (SARS), affect large numbers of people and receive massive media attention, but are relatively benign in terms of absolute number of casualties.⁸ The above-mentioned definitions are also limited insofar as they restrict themselves to the biological and demographic dimension only – how many infections and fatalities, and at what rate – and fail to include the psychological effects of epidemics.

Quite often collective historical memory is influenced more by psychology than by the actual count of fatalities. The discussion in this study focuses both on historically recorded epidemics and on their psychological effects, giving more emphasis to the latter, especially regarding the effects of epidemics on government policies. In other words, I will analyze both the historical records of epidemics and the perception of epidemics by Song dynasty officials, suggesting that it was the perception of a wave of epidemics, whether real or not, that led the imperial government to implement a particular sort of policy to cope with the crisis.

Epidemics were and still are a common phenomenon in China. They hit China well before the Song dynasty and continue to the present.⁹ Most originated from southern China, where the climate is sub-tropical and where such diseases as bubonic plague, typhoid, typhus, cholera, and more, were endemic. Prior to and up until the Song, the imperial government responded to epidemic outbreaks by providing economic relief, sometimes by distributing food and drugs. But during the reign of Emperor Renzong, a different approach was adopted: the government undertook to promote medical knowledge that was believed to explain the pathology and treatment of epidemics. In other words, the government presumed that by publishing

medical books it could provide better means to handle the problem. Most striking, however, is the fact that Song officials did not simply recycle and publish existing literature in a half-hearted manner; they actually searched for the best possible materials to tackle the problems at hand. Thus, they chose an ancient text that had enjoyed only limited circulation for almost a millennium, revised it to the best of their abilities, printed it and promulgated it. This vanguard publication project changed the face of medicine, to such an extent that by the end of Renzong's reign physicians were faced with new medical knowledge that they could not immediately comprehend. Such, then, is the narrative on which I will focus in what follows.

Section A: Epidemics during the Northern Song dynasty

Before beginning the analysis it is necessary to ask the question, Why should we assume that epidemics had any outstanding impact on medicine during the Northern Song dynasty? The answer lies in certain noticeable changes in a specific genre of medical writings – the writings on Cold Damage Disorders. We find during the Northern Song a revival of an ancient medical discourse that served as a framework to cope with epidemics. One indication of this change in prominence is evident from a preliminary survey of Song medical literature, revealing two key facts: first, the number of texts devoted to Cold Damage Disorders increased significantly after 1065, the year when the Song edition of the *Treatise* was published; and second, the number of records of disease that can be categorized under the umbrella term “Cold Damage Disorders” in the dynastic histories increased significantly during the Song.

In 1969, Okanishi Tameto compiled his exhaustive *Studies of Medical Books through the Song Period* (*Song yiqian yiji kao* 宋以前醫籍考), a monumental work that lists all the medical compilations known to have existed up to and including the Song dynasty, providing us with all the surviving records that mention or discuss them. The results of surveying Okanishi's work in search of changing patterns in the number of compilations associated with various medical genres are telling. The numbers of works devoted to Cold Damage Disorders, from the first publication of the *Treatise* in 206 CE until the end of the Song dynasty in 1276, reveal significant and atypical change. The results are presented in Table 3.1, where, in order to enhance the significance of the changes, the data has been divided into five periods, the cutoffs being either dates of dynastic change or the date of publication of the Song edition of the *Treatise*. Excluded from the table are various editions and republications of the *Treatise* itself, as well as individual chapters discussing Cold Damage Disorders included in formularies or other more general medical works.

Table 3.1 shows that the number of texts devoted to Cold Damage Disorders during the Northern Song increased considerably – from eight texts during the period preceding the publication of the Song edition of the *Treatise* to twenty-four following it. If we consider the numbers of texts

Table 3.1 Numbers of medical texts devoted to Cold Damage Disorders (206–1276 CE)

<i>Period</i>	<i>Number of years</i>	<i>Number of texts</i>	<i>Texts per century</i>
206–618 (pre-Tang)	412	3	0.7
618–960 (Tang and Five Dynasties)	342	2 ^a	0.6
960–1065 (Northern Song, to the publication of the Song edition of the <i>Treatise</i>)	105	8	7.6
1066–1127 (Northern Song, from the publication of the <i>Treatise</i>)	61	24	39.3
1127–1276 (Southern Song)	148	54	36.5

Source: Okanishi 1969.

Note

^a This number does not include Sun Simiao's chapter on Cold Damage Disorders in the *Essential Prescriptions Worth a Thousand*, nor Wang Tao's miscellaneous references to Cold Damage Disorders in the *Arcane Essentials from the Imperial Library (Wai tai bi yao)* 外臺秘要, since these are not complete works devoted to the subject.

published per century, the change is even starker since they increased by a factor of five, from 7.6 texts per century to 39.3 in just the sixty years following the publication of the Song edition of the *Treatise*.¹⁰ Conceivable explanations for that dramatic increase in published texts are the advances in printing and the establishment of a medical education system during the Northern Song dynasty. This, however, does not seem to be the case when we compare it with changes in the numbers of texts belonging to other medical genres, which do not exhibit such a dramatic increase.¹¹ In short, the increase is unique to the compilations dealing with Cold Damage Disorders, reflecting the fact that they were almost nonexistent prior to the Song but became much more common after 1065.

Another indicator of the rising familiarity with Cold Damage terminology is found in historical documents. The comparison of disease names as recorded in the dynastic histories of the Tang (618–907), the Five Dynasties (907–960), and the Song (960–1276) as presented in Table 3.2 is revealing. The data is especially indicative when comparing the number of names of Cold Damage Disorders to the total number of disease names on record.

Table 3.2 shows that there is no specific trend in the appearance of disease names on record, but that there is a noticeable change regarding the names of Cold Damage Disorders, either the specific Cold Damage Disorder or other common disease names associated with it.¹² Cold Damage Disorders terminology was not used in the Tang dynastic histories. In the *New History of the Five Dynasties* and in the *History of the Song* we find a number of records using the term “Cold Damage Disorders,” leading us to think that their authors

Table 3.2 Disease names in dynastic histories (Tang to Song)

<i>Dynastic history</i>	<i>Number of disease-names recorded</i>	
	<i>Number of disease names on record</i>	<i>Number and names of Cold Damage Disorders (excluding bibliographic notes)</i>
<i>Old History of the Tang</i> (compiled 940–945)	19	None
<i>New History of the Tang</i> (compiled 1043–1060)	22	None
<i>Old History of the Five Dynasties</i> (compiled 973–974)	9	1 (<i>shanghan</i> 傷寒)
<i>New History of the Five Dynasties</i> (compiled 1044–1060)	4	1 (<i>shanghan</i> 傷寒) 4 (<i>wenbing</i> 溫病)
<i>History of the Song</i> (compiled 1343–1345)	31	5 (<i>Shanghan</i> 傷寒)

Source: The number of disease-names as recorded in each dynastic history is borrowed from Li Liangsong and Guo Hongtao 1990, pp. 128–31. The number of records of Cold Damage Disorders is based on a digital analysis of the Academia Sinica database of the twenty-five dynastic histories.

were increasingly familiar with the this terminology.¹³ This finding correlates with the fact that only a handful of texts devoted to Cold Damage Disorders were compiled during this period.

Tables 3.1 and 3.2 suggest that a certain change, which occurred some time in the mid-eleventh century, triggered a shift of attention to, or increase in usage of, Cold Damage Disorders. The two facets of the change – in medical literature and in historical records dealing with disorders – indicate that it had effects beyond the physicians’ ranks. The question is: What caused this transformation in the extent of usage of Cold Damage terminology?

Surveying epidemics: problems and methodology

Historical epidemiology is a challenging and problematic field. Existing studies in the history of epidemics in China vary in the numbers of epidemics they record for each particular dynasty. For example, Zhang Zhibin, who surveyed the number of epidemics in Chinese history from the first century BCE to the nineteenth century CE, recorded thirty-three epidemics during the Song dynasty. In contrast, Liang Jun counted only twenty-one of them.¹⁴ Such disparity suggests variations in their database, in the historical records they used, or indeed in their definitions of what should be considered an “epidemic.”¹⁵

The main indeterminacies of a historical survey of epidemics have to do with culturally specific terminology and with the historical sources chosen for the analysis. There are a number of terms used to refer to epidemics in China: the most prominent are *yi* 疫, *wen* 瘟, *li* 癘, and *zhang* 瘴. The first two (*yi* and *wen*) are usually translated as “epidemic” and are used to denote epidemics in the general sense, similar to the English word. Most often, Chinese sources describe outbreaks of epidemics using such terms as *yi* 疫, *dayi* 大疫, or *wenyi* 瘟疫. This is usually a general reference to epidemics, without the need to specify the exact diagnosis of the disease or the causing pathogen. The *Shuowen* dictionary defines *yi* as “[A situation when] all people are sick 民皆病也.”¹⁶ It is interesting to note that the most important canon in Chinese medicine, the *Yellow Emperor’s Inner Canon*, does not mention the term even once.¹⁷ The reason may be that, since *yi* is a general term without specific pathogenesis, it was not perceived as important by the authors of a book whose audience consisted predominantly of physicians. The term *wen*, which does not appear in the *Shuowen*, is interchangeable with *yi* and also translates as “epidemic” in the wider sense.¹⁸

Another oft-used term to denote epidemic or contagious diseases is *li* 癘. The *Shuowen* defines it as “evil disease.”¹⁹ When translating *li* into modern Western terminology, the best choice is probably “pestilence.” This type of disease was frequently associated with the invasion of demons or malevolent influences (*qi* 氣) into the body, often leading to death. The combination of *li* and *qi* is used to denote the pathogens bringing about epidemics, which are communicable and which are distinct from the “Six Excesses” (*liu yin* 六淫).²⁰

The last term we have to consider is *zhang* 瘴, which does not appear in the *Shuowen*. Its parallel is the Greek word “miasma.” In Chinese medical thought this notion is associated with impure or polluted *qi* arising from the earth. During the late Han the combination of *zhang* and *qi* referred to the moist *qi* of the southern mountains and forests, which often caused malaria or other similar febrile diseases.²¹ Thus, *zhang*, in a similar manner to *li*, is most often a reference to a pathogen, as opposed to the notion of a widespread epidemic.

To survey epidemics in the general sense, without dealing with either specific diseases or notions of pathology, the best terms to look for are *yi* and *wen*, or their combination *wenyi*. These terms also appear with modifiers, such as “disease epidemic” (*jiyi* 疾疫), “hunger epidemic” (*jiyi* 饑疫), “great epidemic” (*dayi* 大疫), or “seasonal epidemic” (*shiyi* 時疫). These are the more general terms, denoting either large-scale epidemics, or epidemics that were perceived as disastrous even if in reality they did not impact a large region or claim numerous lives. In order to focus on such widespread epidemics – real or perceived – specific disease names have not been included in the survey, both because of uncertainties regarding the Song authors’ diagnostic qualifications and because of the differences with modern terminology. By focusing on the above terms, the present study attempts to avoid the issue of specific and local diseases not reaching epidemic proportions.

The second issue bearing on the results of any historical epidemiological survey is the choice of sources. There are two ways to conduct such a study. One is to base the analysis on local records. Helen Dunstan has provided a fine example for such analysis. Building on an earlier work by Imura Kōzen 井村哮全, she surveyed local gazetteers from the Ming dynasty, searching for records of epidemics, and produced a detailed list of epidemics situated both chronologically and geographically.²² The other option is to search through the standard dynastic histories, as Denis Twitchett did when he analyzed the patterns of epidemics during the Tang, concluding that China received the impact of both internal and external sources of epidemics – claiming also that China exported its epidemics to Korea and Japan.²³

In this study I follow the general methodology set by Twitchett, since Song sources do not include such detailed local histories as the Ming gazetteers used by Dunstan. However, relying solely on the *Monograph on the Five Phases* (*wuxing zhi* 五行志) in the dynastic history, as did Twitchett, is too limited in scope. Therefore, I have attempted to expand the scope of the analysis to the complete contents of the Song dynastic history. Then I further expanded it by including additional sources, both imperially and privately compiled. This type of analysis was made possible thanks to projects that have made Chinese primary sources digitally available with a full-text search feature. I utilized two such digital sources: the *Hanji dianzi wenxian* 漢籍電子文獻 at the Academia Sinica in Taiwan and the *Intranet Version of the Siku quanshu* (*Wenyuange Edition*) 文淵閣四庫全書內聯網版.

Recorded epidemics during the Northern Song dynasty

The goal of this analysis is to survey the occurrences of epidemics during the Northern Song, their impact on the imperial government's policies, and, in turn, how the epidemics influenced medicine. Therefore, I have concentrated on large-scale epidemics – those that conceivably affected the course of life in the empire – rather than attempting to survey each and every record of epidemic during the analyzed period. The best sources for records of epidemics that reached the attention of the imperial government, the court, and its officials are the Song dynastic histories. My working hypothesis is that only large-scale epidemics, or those close to Kaifeng, the capital, were important enough to be recorded in such works. Devastating as they might be (and often were), the local epidemics that did not reach the records of the central government did not influence the latter's policy, and are therefore not important to the present analysis.

This analysis relies first and foremost on two histories of the Song, viz. the official *History of the Song* (*Song shi* 宋史), which was compiled under the Yuan regime, and the privately compiled *Long Draft of the Continued Comprehensive Mirror for Aid in Government* (*Xu zizhi tongjian changbian* 續資治通鑒長編). The *History of the Song* features a total of 177 occurrences of the character *yi*, but none of the character *wen*. Of those 177 occurrences,

approximately thirty are records of actual epidemics that fell within the analyzed timeframe and could be verified. The *Long Draft of the Continued Comprehensive Mirror for Aid in Government*, for its part, includes a total of eighty-eight occurrences of *yi*, and none of *wen*. The first conclusion we can draw at this stage is that, obviously, the character *wen* was not widely in use during the Song dynasty to denote epidemics. Let me add that the total number of occurrences of the character *yi*, many of which overlap between the two histories, is far greater than the actual number of epidemics, as these occurrences include mentions of epidemics among domestic animals, general discussions of epidemics as portents, epidemics mentioned without any details of time or place, and epidemics beyond the timeframe under consideration.

In order to verify the accuracy of the results just mentioned and provide a more comprehensive survey, the data was cross-referenced with the *Collected Administrative Documents from the Song* (*Song huiyao jigao* 宋會要輯稿) and the *Collection of the Grand Edicts of the Song* (*Song da zhaoling ji* 宋大詔令集). In order to expand the scope of the analysis, obtain additional details on some epidemics, and verify the occurrence of others, I also surveyed the *Collection of Tang and Song Historical Materials and Brush Notes* (*Tang Song shiliao biji congkan* 唐宋史料筆記叢刊), the *Sea of Jade Encyclopedia* (*Yu hai* 玉海), some prefaces to imperial medical compilations, and various additional jottings (*biji* 筆記).²⁴ The records of epidemics obtained in this way are tabulated in Table 3.3.²⁵ In total I found thirty-seven records of epidemics during the Northern Song dynasty (960–1127) and five additional records for the years 1128–1140.²⁶

When we examine the distribution of epidemics throughout the Northern Song dynasty, we can see that there are fourteen records of epidemics during the first half of the period (960–1040), whereas during the second half the number of recorded epidemics doubled to twenty-eight. This may hint at the fact that, as the Northern Song dynasty progressed, some factors probably tied to social change, such as distribution of population, urbanization, increasing trade, and a much more mobile society, caused a rise in epidemics.

In order to represent the distribution of the records of epidemics during the Northern Song more clearly, I arranged the data according to two different divisions of time. The first is a chronological arrangement where the time frame is divided into nine twenty-year intervals.²⁷ The second division is according to the reigns of the ten Northern Song emperors. The results can be seen in Figures 3.1 and 3.2, respectively. The distribution pattern in the two figures is similar, showing a sharp upshot, or a spike, during the middle of the Northern Song dynasty.

Figure 3.1, arranging epidemic occurrences by twenty-year intervals, displays an aberration in the chronological distribution of epidemics: instead of a gradual increase in the number of occurrences over time (following, for example, population increase), we find a sharp spike during the period 1041–1060, which was part of emperor Renzong's reign (r. 1022–1063). Actually nine out of the ten epidemics mentioned during this interval erupted during

Table 3.3 List of recorded epidemics during the Song

<i>Date</i>	<i>Source</i>	<i>Place</i>	<i>Term denoting the epidemic</i>
963 (<i>Qiande</i> 1)	SS 9.14	湖南 Hunan	疫
973 (<i>Kaibao</i> 6)	SS 270.9273–4	南土 South	
992 (<i>Chunhua</i> 3), 6th month	SS 5.89 SS 67.1468	京師 Kaifeng	熱疫, 疫疾
994 (<i>Chunhua</i> 5), 6th month	SS 5.94 SS 62.1370	都城 Kaifeng	疫
997 (<i>Zhidao</i> 3)	SS 62.1370	江南 Jiangnan	疾疫
1000 (<i>Xianping</i> 3), 4th month	CB, 47, p. 1019	江南 Jiangnan	疾疫
1003 (<i>Xianping</i> 6), 5th month	CB 54.1195 SS 7.122	京城 Kaifeng	疫
1009 (<i>Dazhong</i> <i>xiangfu</i> 2), 4th month	CB 71.1605 SS 7.140	河北 Hebei 河北 Hebei	疫 疫
1010 (<i>Dazhong</i> <i>xiangfu</i> 3), 4th and 5th months	SS 7.143 SS 251.14159 CB 73.1663	陝西 Shaanxi 西涼府	疫 瘴疫
1014 (<i>Dazhong</i> <i>xiangfu</i> 7)	SHY <i>bing</i> 5.2b	Sichuan 瀘州	疾疫
1027 (<i>Tiansheng</i> 5). Also recorded as 1023–1031 (<i>Tiansheng</i> reign)	CB 105.2448 SS 295.9843	京師 Kaifeng 京師 Kaifeng	疫 疫
1032–1033 (<i>Mingdao</i> reign)	SDZLJ 2.7 CB 125.2952		癘疫 瘴疫
1033	CB 112.2605, 2626	淮淮, 江南 陝州	疫 饑疫
1034	SHY <i>shihuo</i> 70.163	淮, 夔州	疾疫
1040–1041 (<i>Kangding</i> reign)	<i>Dongzhai jishi</i> , 4.6b		大疫
1045 (<i>Qingli</i> 5)	SS 313.10253–4		
1048 (<i>Qingli</i> 8)	YH 63.27B	南方 South	疫
1049 (<i>Huangyou</i> 1)	SS 11.226	河北 Hebei	疫
1051 (<i>Huangyou</i> 3)	WTBY preface, SYQYJK, p. 668	南方州軍 Southern prefectures	疾疫瘴癘
1052 (<i>Huangyou</i> 4)	SS 12.233	諸州 various prefectures	飢疫
1054 (<i>Zhihe</i> 1) 1st month	CB 176.4248 SS 12.236	京師 Kaifeng	大疫
3rd month	SS 12.236	河堤	疫

Table 3.3 (Cont'd)

<i>Date</i>	<i>Source</i>	<i>Place</i>	<i>Term denoting the epidemic</i>
1060 (<i>Jiayou</i> 5), before 4th month 5th month	<i>Wanling ji, fulu</i> , 6B SS 12.245 CB 191.4622, 4625	京師 Kaifeng 京師 Kaifeng	疫 大疫
1065 (<i>Zhiping</i> 2)	SS 66.1455	東兵戍嶺南	瘴癘
1068–1077 (<i>Xining</i> reign)	<i>Tao shan ji</i> 14.6a	吳越	疫病
1075 (<i>Xining</i> 8)	CB 260.6342 <i>Longshou dan ji</i>	河東路 Hedong prefecture 南方 South	疫癘 大疫
1076 (<i>Xining</i> 9)	SS 15.292 <i>Yuanfeng leigao</i> 19.17A–B	安南營將士	疾疫 大疫
1077 (<i>Xining</i> 10)	<i>Tiewei shan congfan, juan 2</i>	南下 (military went southward)	熱疫瘴癘
1089 (<i>Yuanyou</i> 4)	SS 338.10812	杭州 Hangzhou	饑疫
1094 (<i>Shaosheng</i> 1)	SS 18.342 SHY <i>zhiguan</i> 22.38A	京師 Kaifeng	疫
1100 (<i>Yuanfu</i> 3)	SHY <i>shihuo</i> 59.6A		疾疫
1101 (<i>Jianzhong jingguo</i> 1)	SS 95.10959	淮陽	大疫
1102–1106 (<i>Chongning</i> reign)	<i>Jile bian, juan 1</i>		疫
1108 (<i>Daguan</i> 2)	SHY <i>shihuo</i> 59.7B	西京城內外	疾疫
1109 (<i>Daguan</i> 3)	SS 62.1370	江東	疫
1116			
1127 (<i>Qingkang</i> 2)	SS 62.1370	汴京 Kaifeng	疫
1131 (<i>Shaoxing</i> 1)	SS 62.1370	浙西	大疫
1132 (<i>Shaoxing</i> 2)	SS 62.1370 SS 62.1371	涪州	疫
1134 (<i>Shaoxing</i> 4)	SS 62.1370 SS 62.1371	永州, 資榮	大疫
1136 (<i>Shaoxing</i> 6)	SS 62.1370	四川 Sichuan	疫
1137 (<i>Shaoxing</i> 7)	SS 28.531		

Abbreviations: SS: *Song shi*; CB: *Xu zizhi tongjian changbian*; SHY: *Song huiyao jigao*; YH: *Yu hai*; WTB: *Watai biyao*.

Note

The lines represent twenty-year intervals.

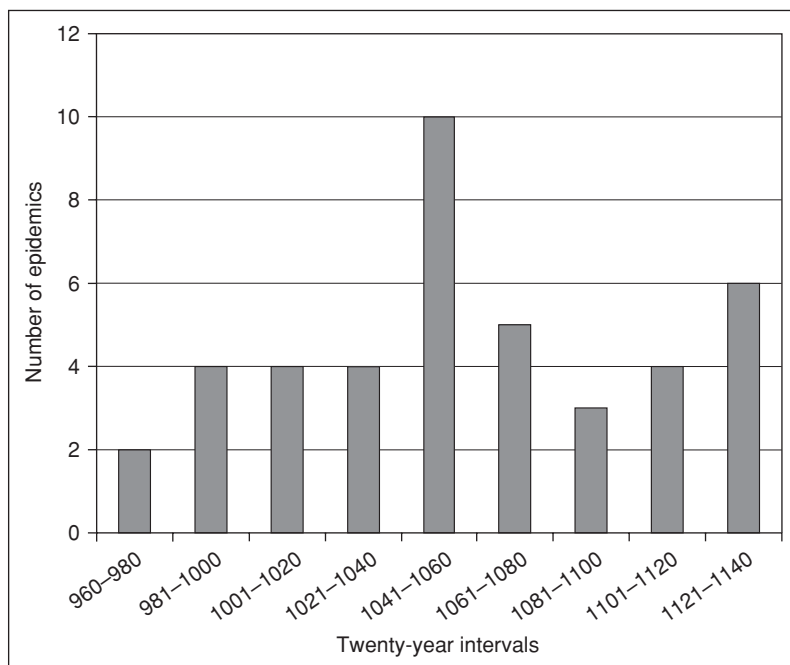


Figure 3.1 Records of epidemics during the Northern Song dynasty, by twenty-year intervals

a shorter period, 1045–1060.²⁸ During these fifteen years, the number of occurrences (ten epidemics) was more than twice than any previous twenty-year interval. Figure 3.2, where the arrangement is by emperors' reigns, is even more telling. It shows the reign of Emperor Renzong standing out as a time of many epidemics: fourteen outbreaks are mentioned in this period, as opposed to only ten in the previous sixty-three years, a period during which three different emperors ruled.

In order to represent the findings in a different way, the data has been arranged in Table 3.4 according to frequency of epidemics over time. The table is divided into three periods – pre-spike, spike, and post-spike. It lists the number of years for each period, the number of epidemics, and their frequency – i.e., the average number of years from one outbreak to the next. We can see that during the spike period an epidemic erupted every other year on average, as opposed to about once every six years in the earlier period. We can also see that the frequency of epidemics increased from an average of one every six years prior to the spike to one every four years following the spike – in the second half of the Northern Song dynasty. There are a number of explanations for this phenomenon, to which we shall return.

With the above data in hand, we should reflect back on the information presented earlier regarding the numbers of medical texts discussing Cold

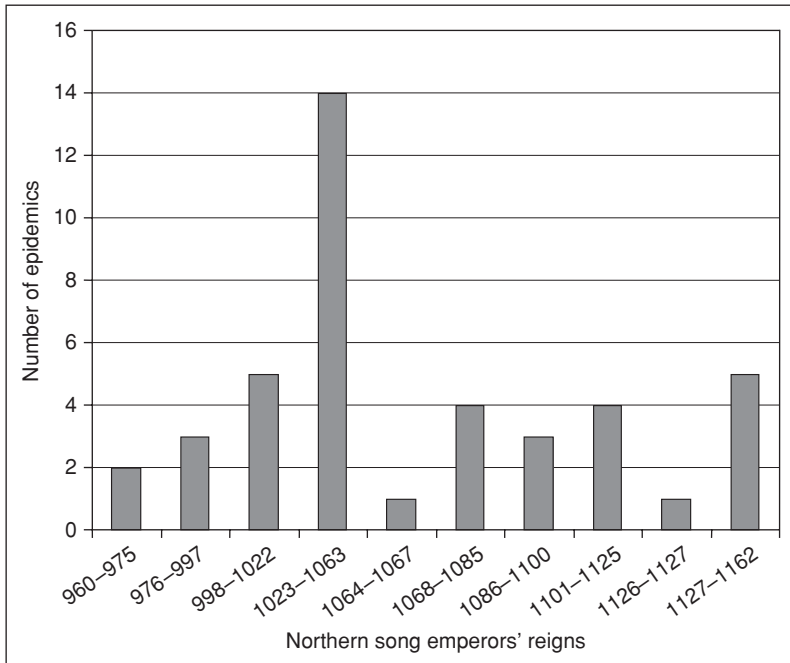


Figure 3.2 Records of epidemics during the Northern Song dynasty, by emperors' reigns

Table 3.4 Frequency of epidemics during the Northern Song dynasty

	Period	Number of years	Epidemics	
			Number	Frequency in years
Pre-spike	960-1040	81	14	5.8
Spike	1041-1060	20	10	2.0
Post-spike	1061-1140	80	18	4.4

Damage Disorders. The increase in the number of such texts published after 1065, as shown in Table 3.1, follows the spike in recorded epidemics during the twenty-year interval of 1041-1060. We can therefore infer that the wave of epidemics induced the publication of Cold Damage-related literature. As I already suggested, and as will be seen in more detail later, the Song government chose, among other more conventional methods, to combat this public health crisis by expanding medical knowledge – in other words, by publishing medical books dealing with the treatment of epidemics, including the *Treatise*. Soon afterwards, scholar-officials and physicians began to publish private works on the same topic.

Possible objections to the findings

The epidemiological information presented above is not without limitations. One objection could be that, due to the nature of the sources used, which are essentially based on court documents, the records reflect mostly epidemics that occurred in or around the capital region, thus providing a distorted epidemiological picture. This is indeed possible, and it will require more research into local histories and local gazetteers to decide about it. The objection is not, however, disabling. My goal is to look into the effects of epidemic outbreaks on imperial medical policies, not to document exhaustively each and every recorded event. The underlying assumption is that imperial historians recorded the epidemics in official histories because they perceived them as important.

Another possible objection to the data arises from cultural-political factors that may have caused officials to pad the official records of epidemics, thus providing a distorted representation of the reality. As is well known, an emperor and a dynasty were supposed to be able to rule only as long as they retained the Mandate of Heaven: if an emperor neglected his duties and acted tyrannically, Heaven would display its displeasure by sending down ominous portents and natural disasters; and if the emperor failed to heed such warnings, Heaven would withdraw its mandate, disorder would increase, political and social order would fall into chaos, and Heaven would eventually select someone else upon whom to bestow a new mandate to rule. Sometimes this belief system enabled court officials to manipulate data to influence the emperor in order to implement certain policies. When officials were not satisfied with their emperor's conduct or policies, they had the possibility of recording certain natural phenomena or disasters more meticulously than usual in order to persuade him to accept their recommendations.²⁹

In a most interesting article Hans Bielenstein has provided an example of such manipulations of omens and portents by high officials with regard to astronomical observations.³⁰ Comparing the historical records of astronomical phenomena (mainly eclipses) with modern astronomical reconstructions, he found that court officials recorded only a certain percentage of the actual eclipses. He also found that during certain years, often consecutive, they recorded a higher number of eclipses than were recorded on average during other periods. Furthermore, Bielenstein found a correlation between those years in which a higher number of eclipses were recorded and the inauguration of new imperial reign periods.³¹ His conclusion was that when court officials wanted to influence decisions regarding policy-making, they recorded a higher than usual number of eclipses, thus confronting the emperor with an increase in the number of portents (eclipses in this case). In other words, the portents recorded in the *History of the Former Han* (*Qian Han shu* 前漢書) were selected as political "markers" rather than as objective records of natural phenomena. Accordingly, they should be interpreted with the greatest care.³²

The same reasoning, it seems to me, can be applied to epidemics. Epidemics are a different type of portent, but with the same implications regarding heavenly mandate; therefore it is conceivable that court officials manipulated in a similar way the numbers of epidemics that they recorded and reported to the throne. In other words, we must not forget that the compilers of the “Monograph of the Five Phases” in the dynastic histories reflected the traditional approach, which was to record events in the light of political interests, not to produce a systematic record of natural phenomena.

Given the political uses of portent and disaster recording, one has to consider the possibility that the drastic increase in the number of recorded epidemics during the years 1045–1060 was the result of court intrigues. Since emperors often inaugurated reign periods following inauspicious portents, or when implementing new policies, we would expect to find a spike in one or two such reign periods, standing in contrast to a relatively stable background during the rest of the emperor’s reign. The distribution of recorded epidemics during the reign of Renzong reveals a different pattern, however: as can be seen in Figure 3.3. The distribution pattern in the figure shows only a slight increase in the latter reign periods, with no significant rise in any single reign period. It seems therefore safe to assume that the surge in the number of recorded epidemics during Renzong’s reign which has been documented above was not politically motivated and that it probably reflects the actual number of epidemics.

Following Bielenstein’s argument about the possible connection of imperial policies and the distribution of the records of portents – here, epidemics – we should ask ourselves if the increase in the number of recorded epidemics during Renzong’s reign is due to some political upheaval. There was, to be sure, a brief period of internal political unrest during the early 1040s. In the summer of 1043 the Song empire was in a state of crisis: that spring the long-time Chief Councillor, Lü Yijian 吕夷简, had suffered a stroke, and while he continued to be consulted on state affairs he no longer handled the day-to-day

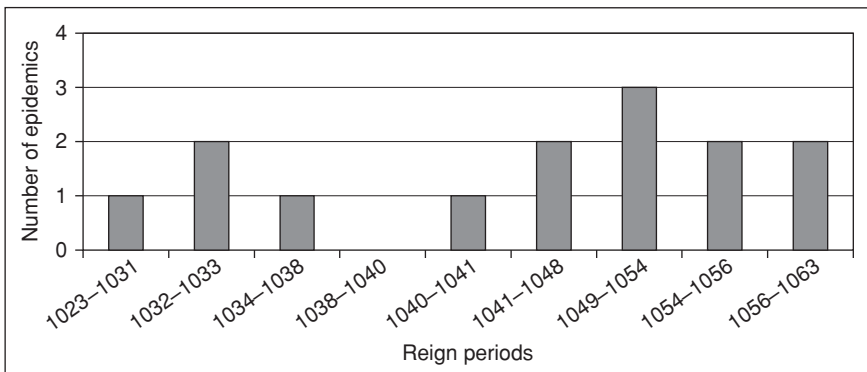


Figure 3.3 Records of epidemics during the reign of Emperor Renzong

activities of the government. However, when we examine the records of epidemics during the reign period around this time we find no significant upsurge in their numbers.³³

In order to emphasize the point that the surge in the records of epidemics was not politically motivated, we can examine another era of political unrest during the Northern Song and check if there was in that case any correlation between the numbers of recorded epidemics and political unrest. As is well known, from the 1060s onwards the Northern Song experienced a unique era of political turmoil plagued by partisanship and purges to a level with few other examples in Chinese history. The 1080s were the peak of the so-called New Policies initiated by Wang Anshi and of the struggle for power between his followers and those of his opponents Sima Guang and Su Shi. The factional conflict and debate over imperial policy began in the 1060s and continued right to the end of the Northern Song.³⁴ If policy debates, as Bielenstein has suggested, could influence the way officials recorded portents, e.g., epidemics, we would expect officials during this era, especially those opposing the current policies, to record more epidemics, whether genuine or not. But as we can see in Figure 3.1, during the corresponding twenty-year intervals (1081–1100) only three epidemics were recorded. In comparison, the spike during the years 1041–1060 occurred at a period without much political upheaval and with no internal partisan struggles. This, again, strengthens the validity of the data.

One last question that often comes up when discussing outbreaks of epidemics has to do with the geopolitical situation: can we associate the rise in the number of recorded epidemics with an ongoing war or any other type of domestic or international violence? The immediate answer is that we find no connection between the recorded wave of epidemics and any ongoing war or rebellion. During the early 1040s China did experience a series of military confrontations that threatened the Song state. In the northwest, an attack of the Tangut Xixia was stemmed only after a major mobilization of military force. In the northeast, the Khitan Liao threatened to break a peace that had endured for forty years. Finally, in central China the rebellion of Wang Lun 王倫 was posing the first significant internal challenge to Song rule. However, the surge in the numbers of recorded epidemics comes after, not during, this period, which suggests that it was not linked to policy implementation.

Epidemics and changes in the state and society

The data analyzed above shows an upsurge in the numbers of recorded epidemics during the fifteen years from 1045 to 1060 as well as an overall increase during the second half of the dynasty. Changes in epidemiological patterns often reflect demographic, social, or economic changes. The fact is that during the Song, human migration from the north to the south, which had started in the Tang, increased considerably. During the Northern Song the lower Yangzi valley became the demographic center of the country as well as its center of

cultural vitality. Major commercial urban centers located far from the traditional centers of political power expanded greatly.

The demographic shift to the south during the Northern Song exposed China to a new epidemiological frontier. However, this shift by itself would have had only consequences limited to South China: one would not expect a significant increase in the prevalence of epidemics throughout the entire empire, and especially not in Kaifeng, which was located on the banks of the Yellow River in northern China. Thus, additional changes must have contributed to the rise in the occurrence and spread of epidemics. For example, urban population kept steadily growing without providing the adequate sanitation facilities needed to prevent diseases; stagnant water in transportation canals and in the rice paddies, typical of southern agriculture, probably enhanced the spread of epidemics. Still another factor potentially contributing to the spread of southern epidemics beyond their endemic region was the considerable expansion of domestic trade and the increase of trade distances during the Northern Song, meaning both an intensification and a lengthening of human travel and migration.³⁵ This may provide an explanation of some of the epidemics that broke out in north China and in Kaifeng. As a matter of fact, certain historical records specifically allude to the southern origin of the pestilence.³⁶ This being said, we do not know for certain to what extent, if at all, these changes in population, trade, and urbanization contributed to the wave of epidemics of the years 1045–1060. On the other hand, it seems safe to assume that these changes were responsible for the overall increase in the number of epidemics during the latter half of the Northern Song dynasty.

The rise in the number of epidemics during the 1040s and 1050s is striking. It forced a reaction, if only a self-interested one, from the emperor, since the concept of the Mandate of Heaven associated epidemics and other inauspicious portents with misgovernment. The government reacted in several ways, including the dispatch of representatives from the Imperial Medical Service (*Taiyi ju* 太醫局) to determine the type of epidemic, followed by shipments of drugs and money in relief efforts. In 1051, for example, the government “ordered prefectural and district administrators to provide [free] prescriptions (*fangji* 方劑) and distribute them to alleviate the people’s diseases.”³⁷ In another instance, in 1057, it ordered an annual disbursement of funds to every prefecture and district in order to fight epidemics. It also “ordered [local] administrators to select officials to mix medical formulas and use them to help [cure] the people’s diseases.”³⁸ Another record states that, “Knowing that Wang Duan 王端 from Yunan military prefecture had petitioned the court to allocate funds to purchase and prepare medications for distribution to the people, [Renzong ordered] to implement this policy throughout the empire.”³⁹

During the first few decades of the Northern Song the authorities did promote the publication of medical texts and dissemination of medical knowledge as a measure to improve public health. During the 1040s, however,

various prefectures petitioned the imperial government to provide additional medical texts since those available were insufficient. Emperor Renzong was aware of the situation and “was in anguish over the fact that the sick were lacking medication.” Accordingly, in 1048 he ordered medical officials to compile a formulary entitled *Effective Formulas of the Qingli Reign Period* (*Qingli shanjiu fang* 慶歷善救方). The contents of the book were later engraved on a stele to expand its readership.⁴⁰

In 1051, Renzong was reported to be concerned that, “As there are no good doctors outside [of the capital, or of the palace], [when] the people are affected by epidemics many cannot be saved.” As a consequence, he ordered Zhou Ying 周應, a physician holding a post in the civil service, to select, compile and publish what he considered to be the most important and effective formulas included in the *Imperial Grace Formulary* (published in 992). The resulting text was entitled *Concise Formulary to Relieve the Masses* (*Jianyao jizhong fang* 簡要濟眾方).⁴¹

Probably the best account of the dire state of public health and medical education in south China appears in a preface, dated 1069, to the Song edition of the *Arcane Essentials from the Imperial Library* (*Wai tai bi yao* 外臺秘要):

On 6 July 1051, a direct Palace Order: “A memorandum reported: ‘When I, Liao, previously went to the south to visit prefectural army units, there had been epidemics and miasmatic diseases [there] for years on end. In the places most seriously affected, more than a hundred thousand people died in a single prefecture. Although some discrepancy in the ordinances of heaven must have brought about these deaths, the mistakes of doctors must have increased the incidence of disease. I have interrogated prefectural officials in some detail. In every case there was a lack of medical books to study. Aside from the *Basic Questions* and *Origin of Disorders*, [teachers and students of medicine] were transmitting and studying faked books and bad editions.⁴² Therefore, what they learned was of a low standard, and they served their patients badly. They ardently hope that out of sagely compassion [Your Majesty] will have medical books kept in the Imperial Family Archives especially brought out, and will entrust officials with choosing the most useful among them, collating them to prepare definitive editions and sending them to Hangzhou to have blocks cut and printed. Let your imperial beneficence thus extend to the most obscure places, so that the people will be spared early deaths’.”⁴³

The author was clearly disturbed that the state of medical knowledge and insufficient availability of books were the cause of bad practices by doctors, and suggested that it was the government’s responsibility to rectify this situation. His proposed solution was to publish and disseminate books in order to ensure a standard medical education in the localities. Unsurprisingly, the dissemination of the texts mentioned above and discussed below did not

immediately solve the problem; or, rather, they did so only partially, because initially they had been sent only to prefectural government offices.

Section B: Government policy and actions: establishing the Bureau for Revising Medical Texts

Following the implementation of standard measures to cope with ongoing epidemics such as providing tax relief and distributing food and drugs, the government adopted a different approach, namely, promoting medical knowledge presumed to aid to treat epidemics. In an attempt to expand the existing medical literature and provide means to improve public health, it established in 1057 a special institution designed to revise and publish an array of ancient medical texts: the Bureau for Revising Medical Texts. In his edict instructing to establish the Bureau (see below), Emperor Renzong mentioned specific expectations: the editors were to revise and edit the well-established medical texts preserved in the imperial archives, and then print and disseminate them. But the need to combat the current wave of epidemics prompted the officials serving in the Bureau to select and revise a different set of medical classics from the ones the emperor had designated, thus deviating significantly from what was common traditional medical knowledge.

The Bureau's project was different from the earlier printing of medical books in that it was greater in scope and unique in the characterization of the medical literature it published. Between 1057 and 1069 it revised and published a total of ten medical works, of which nine were revised versions of ancient medical canons and one was a new materia medica collection. The Bureau's publications, which were added to the curriculum of the medical education system, set a new standard for medical knowledge that played a key role in the redefinition of medicine during the twelfth century and opened a new path for future generations of physicians to pursue.

The Bureau for Revising Medical Texts

In the eighth month of 1057, Palace Secretary (*shumi shi* 樞密使)⁴⁴ Han Qi 韓琦 delineated the emperor's expectations in establishing the Bureau for Revising Medical Texts in the following terms:

The current editions of the *Divine Pivot* 靈樞, *Grand Basis* 太素, "A-B" *Canon of the Yellow Emperor*, [*Formulas of*] *Guang ji* 廣濟,⁴⁵ *Essential Prescriptions Worth a Thousand*, and *Arcane Essentials from the Imperial Library*, contain many errors. Although the *Divine Husbandmen's Materia Medica* 神農本草 was once revised during the Kaibao reign period (968–975), the published edition still contains omissions. We invite selected officials knowledgeable in medical texts and officials of the Palace Physician to prepare a definitive edition of these books and issue them to make up for this lack.⁴⁶

After issuing the edict, the government established the Bureau for Revising Medical Books, which was placed under the jurisdiction of the Bureau of Compilation (*Bianxiu yuan* 編修院). Subsequently, the government assembled a group of distinguished editors, who had all passed the civil service examinations, to systematically revise a selection of ancient medical books, mostly unavailable to readers outside the imperial palace. The project resulted in the publication of definitive editions of a series of medical works. Soon after the Bureau had published the books, the palace education system added them to the curriculum.⁴⁷

The newly established Bureau did not have its own director. Two officials from the Bureau of Commissions (*Chaiqian yuan* 差遣院) supervised over its activity.⁴⁸ Four senior editors – Zhang Yuxi 掌禹錫, Lin Yi 林億, Zhang Dong 張洞, and Su Song 蘇頌 – received the imperial edict and held the highest official positions at the Bureau. All of them had not served previously in any official medical position. Moreover, their official titles did not indicate they were physicians, and we have no record of the type of medical education, if any, they may have received.⁴⁹ It seems safe to assume that their medical knowledge was limited.⁵⁰

Two months after the establishment of the Bureau, two physicians from the Hanlin Academy (*Hanlin yiguan* 翰林醫官), Qin Zonggu 秦宗古 and Zhu Youzhang 朱有章, were assigned to the Bureau in order to professionalize the medical aspect of the editing.⁵¹ Still later, three additional editors joined the project: Sun Zhao 孫兆, Sun Ji 孫奇 and Gao Baoheng 高保衡; the first two were brothers and distinguished physicians. These three new editors proved to be very influential, as they participated in most of the editing projects.⁵² Altogether, physicians made approximately half of the Bureau's staff, most of them were appointed only as low-level editors. In other words, officials with no medical background occupied higher, more powerful and more influential positions and were responsible for deciding which ancient medical books to revise, thus redefining medical literature in the process. We can safely assume that contemporary physicians would have selected a different set of books, probably better-known or more established canons. Furthermore, since some of the editors originally came from south China, they probably looked for medical literature that could also be used to treat southern disorders.

The imperial government closely monitored the Bureau's progress: "Each book the Bureau completed was immediately presented to the emperor [for inspection]. Lin Yi and the other editors wrote a preface for each book. [After the approval of the emperor] the order went to the Directorate of Education (*Guozi jian* 國子監) to publish and distribute [the book]."⁵³ The government's involvement in the Bureau's work went beyond conventional monitoring of its activity, however. For example, when the Bureau's editors compiled the *Illustrated Materia Medica* (*Bencao tujing* 本草圖經), the government, at the Bureau's request, ordered all the prefectures to send samples and drawings of every herb and drug they produced; the editors also requested additional

information, such as clinical applications and the times of blossoming, ripening, and harvesting.⁵⁴ Without strong governmental support, the Bureau's requests could not have been enforced.

The books published by the Bureau

During the years 1057–1069 the Bureau published a total of ten books.⁵⁵ As mentioned above, nine were revisions of ancient medical works. Only one, the *Illustrated Materia Medica*, was an innovative compilation based on an empire-wide survey of drugs in clinical use.⁵⁶ The list of the books, with the scholars who participated in editing and revising them, is presented in Table 3.5. The books are classified in the table according to the three genres of medical literature, viz. materia medica, Classical Medicine, and Cold Damage Disorders. As can be seen, six out of the ten books the Bureau compiled (shown in the lower two boxes) concentrated either exclusively or partially on Cold Damage Disorders.⁵⁷ We can also see that three scholar-officials, Lin Yi, Sun Ji, and Gao Baoheng, carried most of the editorial work.

The Bureau's work, at least according to the testimony of its editors, was not the usual round of half-hearted compilation. In addition to compiling an innovative materia medica collection (the *Illustrated Materia Medica*), the Bureau collected all the surviving past editions or fragments of each of the texts they were working on in order to produce definitive versions. In one of their prefaces, the editors claim to have "corrected over six thousand characters and added over two thousand lines of annotation." "Before omitting one line," they continue, "we all had to verify it." Finally, they claim that,

For all the books, instead of searching and inquiring [for hearsay], we gathered and collected many editions. Gradually, we established the meaning and relationship [between the various editions], corrected their mistakes and errors. Of ten [known editions] we obtained three or four, the rest we could not get hold of.⁵⁸

Yet this general pattern of meticulous annotation was not implemented when the Bureau's officials revised the *Treatise*, which was left almost in its original form. The reason for this absence of revision, it would seem, was that due to its obscurity the editors had little to work with in editing the book. Once the Bureau's newly revised canons were printed, the government added them to the Imperial Medical School's curriculum and distributed them to the prefectural offices for reference and further copying and dissemination.

The Bureau's official duties ended with the publication of the revised versions of the "*A–B*" *Canon of the Yellow Emperor* and the *Canon of the Pulse* in 1069.⁵⁹ But the work of publishing and disseminating medical texts continued in the following decades. The first editions were set in large type and printed in limited quantities, mainly due to the high cost of printing and paper.

Table 3.5 (cont'd)

Title	Year of pubn	Editor	Zhang Yuxi	Lin Yi	Zhang Dong	Su Song	Chen Jian	Qin Zonggu	Zhu Youzhang	Sun Zhao	Sun Ji	Gao Baoheng	Qian Xiangxian	Fan Zhen
Versions of the original <i>Treatise</i> ²														
<i>Treatise on Cold Damage Disorders</i> 傷寒論	1065	X									X	X		X
<i>Essential Discussions of Prescriptions in the Golden Casket</i> 金匱要略方論	1066	X									X	X		
<i>Canon of the Golden Casket and Jade Case</i> 金匱玉函經	1066	X									X	X		

Source: Wan Fang 1982, p. 48.

Notes

¹ This category includes books that contain information about Cold Damage Disorders but are not devoted to this doctrine. The *Canon of the Pulse*, compiled by Wang Shuhe, who also edited the original *Treatise* in the third century, includes portions copied from the *Treatise*; see Ma Jixing 1990, pp. 114–17. The *Canon of the Pulse* can also be classified as a Classical canon since it includes discussions about the doctrine of systematic correspondences. The *Essential Prescriptions* and the *Arcane Essentials* are formularies that include chapters or sections on Cold Damage Disorders. Some later scholars termed the chapter on Cold Damage in the *Essential Prescriptions* the “Tang edition of the *Treatise*.” The Song editors used these sections to compare and resolve inconsistencies while editing the *Treatise*.

² This category includes the three revised versions of the third-century *Treatise on Cold Damage and Miscellaneous Disorders*. Contemporary scholars claim that these three books included only segments of the original *Treatise*: see Ma Jixing 1990, pp. 127, 130–2.

Most of the copies were sent to the prefectural offices, thus limiting the audience to officials with access to the central government.⁶⁰ To overcome this obstacle, both the imperial government and the local authorities reprinted some of the texts using small characters, thus lowering their price and expanding their audience. In 1094, the government launched the last reprinting, in small character editions, of five books, the last of which was the *Essential Prescriptions Worth a Thousand*, published in 1096.⁶¹

The Bureau for Revising Medical Texts was an innovative institution. Never before had the imperial government invested so much in medicine. Establishing and funding such an outfit for the sole purpose of revising, printing and promulgating medical works was a direct continuation of the focus put on medicine in the early decades of the Northern Song. In later centuries, up to the present, the texts published by the Bureau became the most important medical classics. From our own standpoint it might be claimed retrospectively that it was only natural to choose these texts for revision since they were the most important ones. But was this really the case? Were these canons indeed the most important medical classics of their time? Why did the editors of the Bureau decide to revise these books, including some peripheral texts and not others?

It seems that from the onset the government gave specific instructions as to which books the Bureau's editors should revise and publish, as specified in the above-mentioned order transmitted by Han Qi. Additionally, in the preface to the *Illustrated Materia Medica* the editors wrote, "Initially we were ordered to edit eight books, including the *Divine Husbandman's Materia Medica*."⁶² The preface to another book, the *Jiayou Materia Medica*, provides for its part a detailed list of the books the editors were instructed to revise:

The texts [to be revised] included the *Divine Husbandman Materia Medica*, the *Divine Pivot*, the *Grand Basis*, the "A-B" *Canon of the Yellow Emperor*, the *Basic Questions*, of one type, and the formularies *Guang ji*, *Essential Prescriptions Worth a Thousand*, *Arcane Essentials* from the Imperial Library. The four officials Zhang Yuxi, Lin Yi, Zhang Dong, and Su Song together revised these texts.⁶³

This list includes four texts representing the classical doctrines, three formularies, and one materia medica.⁶⁴ It faithfully represents the state of medicine during the early Northern Song, and was also represented in the imperial medical educational system established in the early 1040s. The *Treatise*, all three of its versions, and the *Canon of the Pulse* were not included in the list, probably because they did not represent mainstream medical knowledge. The fact that the Bureau published them nonetheless needs further discussion.

The majority of the texts that were eventually revised and published (six out of ten) concerned what had been a peripheral aspect of medicine up to that time, namely Cold Damage Disorders. The significance of the discrepancy

between the two lists, the one handed down from the court and the one effectively revised by the Bureau, is important since it must not have been without reason that the officials deviated from their designated goals. There can be a number of explanations for this discrepancy: the Bureau may have enjoyed a degree of autonomy in choosing which texts to revise; its officials may have been able to convince their political superiors to allow other books to be revised; and the government itself may have ordered the changes. Unfortunately, records regarding this issue did not survive. However, due to certain hints in the published books we can assume that the initiative to change the list came from the Bureau's editors rather than from the government. For example, in two out of ten prefaces the editors point out that "of all the diseases [literally, of the one hundred diseases], Cold Damage Disorders are the most pressing."⁶⁵

The choice of which texts to edit was presumably influenced by the training and affiliation of the officials in the Bureau. The fact that its two overseeing directors (Qian Xiangxian and Fan Zhen)⁶⁶ and four of its more prominent members were not themselves physicians may have played a role. One can speculate that the top officials of the Bureau chose to proceed in a way different from the one physicians or officials possessing medical training would have followed. Deciding to revise the *Treatise* would not have been the natural course of action for physicians, because their medical education, either in the Imperial Medical Service or in a master-disciple relationship, revolved mostly around Classical Medicine and drug therapy. Most physicians would have chosen to promulgate classical texts to widen the foundation of medical education. Since they did not encounter the *Treatise* in the course of their education or practice, they could not have been aware of the relevance of its content in treating epidemics. In contrast, the Bureau's officials were influenced by a different set of considerations, which were predominantly political and social. It is safe to assume that, facing the wave of epidemics, they searched for whatever texts could provide relief or solution for the problems it entailed. Added to this were the unique privileges granted to them, including direct access to the imperial archives, where several editions of the *Treatise* could be found. Such conditions provided the Bureau's editors with new means and new knowledge to cope with the raging epidemics. Thus, they chose to revise the three versions of the original *Treatise*. However, there is another aspect that may have led the editors to revise the *Treatise*: this is the personal relationship between the Bureau's most prominent editors and an official named Gao Ruone.

Gao Ruone 高若訥 (997–1055) is a good representative of the scholar-official class in Northern Song China, as he pursued a political career but at the same time learned and practiced medicine. Gao was originally from the locality of Yuci 榆次 in Bingzhou 并州 (present-day Shanxi). He lost his father when he was ten years old and had quite often to care for his ill mother. He passed the *jinshi* examination in 1024, finishing among the top three of his class.⁶⁷ Thereafter he served in several capacities in the civil service,

including such high-ranking positions in the central government as Participant in Determining Government Matters (*canzhi zhengshi* 參知政事), Military Affairs Commissioner (*shumi shi* 樞密使), and Vice Grand Councilor (*fu zaixiang* 副宰相). It looks like he tended to take the wrong side in political controversies: such was the case, for example, when he sided with Lü Yijian 呂夷簡 in a confrontation with Ouyang Xiu 歐陽修. These unfortunate choices probably prevented him from achieving top-ranked offices even becoming Prime Minister.⁶⁸

In addition to his official duties, Gao learned and practiced medicine focusing on Cold Damage Disorders, an almost esoteric topic at that time. His initial interest in medicine arose, as was the case with many of his colleagues who also studied the art, when he had to strive to aid his ill mother. Later on he came across the text of the *Treatise*, though it is unclear whether he obtained a copy of it or read it in the imperial archives. Following this, he compiled his own treatise, entitled *Categorized Essentials of Cold Damage Disorders* (*Shanghan leiyao* 傷寒類要). The book was not printed, and from a medical standpoint it had little impact, at least if we are to believe. Guo Yong 郭雍, a physician who lived a century after Gao Ruone and compiled yet another book on Cold Damage Disorders, writes: “At the present time there are a number of compilations about Cold Damage Disorders, for example, Gao Wenzhuang’s 高文莊 *Categorized Essentials of Cold Damage Disorders*. [However] I was not able to obtain a copy of it. There are also two scholars named Pang [Anshi 龐安石] and Zhu [Gong 朱肱]. Their books have been handed down.”⁶⁹ Still, it is important to keep in mind that Gao’s work on Cold Damage Disorders came at a time when this topic was largely overlooked by mainstream Song physicians – hence its uniqueness. Did his interest in Cold Damage Disorders, despite the limited circulation of his work, signal the way for other scholar-officials? It seems, in fact, that it was not Gao’s writings *per se* that made the difference, but rather his personal connections.

Earlier in this study I suggested that it was their genuine interest in solving the problems posed by the wave of epidemics that drove the Bureau’s officials to choose the *Treatise* as a major revision and publication project. This was the obvious choice since it was the only available book focusing on southern epidemics. However, yet another factor may also have directed them to look into Cold Damage Disorders. It turns out that Gao Ruone had a direct relationship to three prominent editors in the Bureau. Lin Yi, one of the chief editors and the one involved in almost all of the revisions, was Gao’s son-in-law, having married his second daughter. Gao Baoheng, one of the editors who joined the Bureau in the second round of recruitment, was Gao Ruone’s second son.⁷⁰ Lastly, Sun Zhao, who was one of the physicians added to the Bureau’s staff, had been his disciple when training in medicine.⁷¹ It has been actually claimed that it was Gao’s connections and interventions that landed all these positions to his relatives.⁷² This is, however, beyond the point. What is important to our discussion is the fact that

three of the Bureau's editors, including Chief Editor Lin Yi, were to some extent familiar with Cold Damage Disorders before they even began their work revising medical books. It is therefore quite possible that, facing the need to solve the problem of epidemics, these editors drew on their personal familiarity with Cold Damage Disorders to shape the list of books the Bureau revised and published. Examining Table 3.5 with this in mind, it is not surprising that all three officials related to Gao collaborated on revising the three versions of the *Treatise* published by the Bureau.

In summary, it seems fair to say that the list of texts the Bureau published indicates the medical needs of the period. The fact that six out of ten texts focused on or devoted discussion to Cold Damage Disorders strongly suggests that the topic was high on the state agenda. It also suggests that during this era physicians were not the ones who decided on which course medicine should take and how to shape medical research. Instead, bureaucrats who had little or no medical training decided the future course of medicine by choosing to edit and publish texts belonging to a certain medical genre. Their decisions were shaped by current needs, and they opened new avenues of knowledge for practicing physicians to pursue.

Section C: The history of the epidemics-oriented doctrine: Cold Damage Disorders (206–1065)

The origins of Cold Damage literature

The term Cold Damage Disorder is usually traced back to the *Basic Questions* (*Su wen* 素問) volume of the *Yellow Emperor's Inner Canon*, dated to the first century BCE.⁷³ The definition of Cold Damage appears for the first time in section 31 of the work, entitled “Discussions of Heat Disorders” (*Re lun* 熱論). This section describes the development of acute febrile disease as the external pathogen penetrates into the body based on the number of days passed since the illness was contracted. According to this view, each level of penetration into the body affects different viscera. The penetration is categorized according to the “Six Warps” (*Liu jing* 六經) – a unique differential diagnostic nomenclature that was later adopted for usage in Cold Damage Disorders.⁷⁴ Further, section 32 of the book discusses febrile disorders theoretically, providing only general pricking method (*ci* 刺) guidelines as a strategy for treatment.

Approximately three centuries after the compilation of the *Inner Canon*, one of the most prominent medical authors in Chinese history, Zhang Ji 張機 (150–220 CE), compiled the *Treatise on Cold Damage and Miscellaneous Disorders* (*Shanghan zabing lun* 傷寒雜病論).⁷⁵ Zhang Ji, better known by his style name Zhang Zhongjing 張仲景, was the Chamberlain for Palace Revenues (*Shaofu* 少府) in the city of Changsha 長沙, the capital of Chu 楚 Prefecture in South China (present-day Hunan), the extreme south of the empire during the Han dynasty.⁷⁶ It should be noted that this was the most

plague-ridden area in China at the time. Since the climate and environment differed from the North, the native population was exposed to a different set of endemic diseases, often neglected in the mostly northern-oriented mainstream medical literature and practice. As was common during that period, Zhang probably received his medical education by serving as an apprentice to an established physician. These were the final days of the Later Han dynasty (25–220 CE), when the empire was starting to crumble. In his preface to the *Treatise*, Zhang testified that many members of his family and clan had died during spells of febrile disease or epidemics with no help coming from physicians. Finding no useful information about remedies that might help his family, he claimed to have focused on the study of “ancient medical texts” and on collecting medicinal formulas used by contemporary physicians. Accordingly, the *Treatise* was a formulary that attempted to explain the diagnosis and treatment of febrile diseases, using to some extent the doctrines of Classical Medicine. Again according to the preface, Zhang “diligently followed the ancient models and broadly investigated numerous formulas.”⁷⁷ The resulting manuscript, as is made evident by its title, had two parts – a Cold Damage part that concentrated on the treatment of acute febrile disorders by means of formulas, and a Miscellaneous Disorders part that discussed disorders of the viscera and the circulation tracts.⁷⁸

It is commonly assumed that the original version of the *Treatise* included six sections: pulse diagnosis, Cold Damage Disorders, miscellaneous disorders, women’s disorders, children’s disorders, and dietary prohibitions.⁷⁹ The primary focus of the *Treatise* was neither on listing the symptoms needed to deduce treatment, as was common in empirical symptom-specific practices, nor on determining manifestation types, which was the diagnostic process in the canons of Classical Medicine. Rather, the *Treatise* demarcated the development stages of Cold Damage Disorders according to the Three-Yin and Three-Yang categories (i.e., the “Six Warps”). In other words, the signs and symptoms of diseases were organized into syndrome-like groups according to the six-fold categorization. Specific medicinal formulas were associated with these groups of symptoms. In many cases the latter were more commonly referred to by the formula presumed to affect the condition. Here, for example, is the first disorder the *Treatise* discusses in detail:

In the mature yang stage of disorder, the pulse is floating, the head aches, the neck is stiff, and the patient is abnormally sensitive to cold. Mature yang disorder in which there are also hot sensations [or fever, *fa re* 發熱], perspiration, abnormal sensitivity to wind and a moderate [floating] pulse is called Wind Attack Disorder. . . . In mature yang Wind Attack Disorder, when the yang pulse [i.e., the pulse taken with light finger pressure] is floating and the yin pulse [under heavy pressure] is weak, the sensitivity to cold and wind extends to the slightest exposure, the fever is intense, and there are wheezing in the nasal passages and dry heaves; it is to be controlled by Cassia Twig Infusion.⁸⁰

Whenever a physician determined that a patient's symptoms concurred with a particular stage of the Cold Damage Disorder, the corresponding formula was prescribed, sometimes with minor modifications. Thus, formulas, classified according to the Six Warps, were the basic categories or manifestation types used for diagnosis in the *Treatise*.

The original version of the *Treatise* was lost soon after Zhang's death in 220. A few decades later, Wang Shuhe 王叔和 (210–285), the Palace Physician (*taiyi* 太醫) of the Wei dynasty (220–265), revised and expanded the text.⁸¹ He probably did not obtain one definite version of the book but rather fragments claiming to be part of the original. The number of chapters in the revised edition is not clear. The bibliographical section of the *History of the Sui* lists Wang's text as having fifteen chapters and the *Taiping yulan* lists it at thirty-six chapters.⁸² Soon after its completion Wang's revision of the *Treatise* fell out of circulation.

It seems that most physicians during the centuries following the third century CE until the eleventh century were not familiar with the *Treatise*. Even when medical authors mentioned Cold Damage Disorders they failed to cite Zhang Zhongjing or his book.⁸³ Only a handful of references to the text or to Zhang by name appear in a number of official histories and two private compilations, as presented in Table 3.6.

As is evident from Table 3.6, there is only one source that refers to texts that can be associated with the *Treatise* prior to the seventh century. Furthermore, the number of chapters attributed to the texts in each reference varies, suggesting that these were not complete editions of the original *Treatise*. It is interesting to note that the *History of the Sui Dynasty* records the *Treatise* as a lost work. Lastly, most records include the character *fang* 方 “formula” in their title, even though the original text did not. This fact suggests that these texts probably served as formularies or clinical manuals to treat Cold Damage Disorders, with only limited, if any, doctrinal information as did the *Treatise*.

There are additional more detailed references to the *Treatise* in private medical writings. The esteemed Tang physician Sun Simiao, in the preface to his *Essential Prescriptions Worth a Thousand*, commented that “in Jiangnan [a region in south China] there are various masters who conceal Zhang Ji's essential formulary and do not transmit it.”⁸⁴ Approximately thirty years later around 682, Sun compiled an expanded version of his book titled *Supplementary Prescriptions Worth a Thousand* (*Qian jin yi fang* 千金翼方). In this book Sun included a number of chapters discussing Cold Damage Disorders, indicating that he had obtained an incomplete copy of the *Treatise*.⁸⁵ Later scholars sometimes titled this section of Sun's work as the Tang edition of the *Treatise*.⁸⁶

Sun's advocacy of the *Treatise* presumably influenced the imperial medical system. For a short time only, the *Treatise*'s contents became part of the official medical curriculum. In 758 a typical exam for state approved physicians consisted of: “two questions about materia medica (*bencao*), two

Table 3.6 References to the Zhang Zhongjing by name or to the *Treatise* by title (third to eleventh centuries)

Title	Dynasty and year of publication	Record of the <i>Treatise</i>
<i>Seven Records</i> 七錄	Liang dynasty, 523	張仲景辨傷寒十卷 <i>Zhang Zhongjing's Differentiating Cold Damage Disorders</i> , in 10 chapters. 張仲景評病要方一卷 <i>Zhang Ji's Essential Prescriptions for Treating Disorders</i> , in one chapter.
<i>Official History of the Sui Dynasty</i> 隋書	Tang dynasty, 656	張仲景辨傷寒十卷亡 <i>Zhang Zhongjing's Differentiating Cold Damage Disorders</i> , in 10 chapters, (recorded as lost). 張仲景評病要方一卷 <i>Zhang Zhongjing's Essential Prescriptions for Treating Disorders</i> , in 1 chapter. 張仲景方十五卷 <i>Zhang Zhongjing's Formulary</i> , in 15 chapters. 張仲景療婦人方二卷 <i>Zhang Zhongjing's Prescriptions for Treating Female Patients</i> , in 2 chapters.
<i>Old History of the Tang Dynasty</i> 舊唐書	Later Jin dynasty, 945	張仲景藥方十五卷 <i>Zhang Zhongjing's Drugs and Formulas</i> , in 15 chapters.
<i>New History of the Tang Dynasty</i> 新唐書	Northern Song, 1060	王叔和張仲景藥方十五卷 <i>Wang Shuhe and Zhang Zhongjing's Drugs and Formulas</i> , in 15 chapters. 傷寒卒病論十五卷 <i>Treatise on Cold and Miscellaneous Disorders</i> , in 10 chapters.
<i>Prescriptions at the Heart of Medicine</i> 醫心方	Japan, 948	張仲景方 <i>Zhang Zhongjing's Formulary</i> .
<i>Comprehensive Listing of Levered Literature</i> 崇文總目	Northern Song, 1041	金匱玉函略三卷 <i>Essentials of the Golden Casket and Jade Case</i> , in 3 chapters. 張仲景論十卷 <i>Zhang Ji's Discussions</i> , in 10 chapters.

Source: The data is adopted from Ye Fazheng 1995, pp. 30–1.

questions on the *Canon of the Pulse* (*Mai jing*), ten questions on the *Inner Canon*, two questions on Zhang Ji's *Treatise*, [and] two questions on various miscellaneous classics."⁸⁷ It is unclear which version of the *Treatise* students had to memorize before taking the exam, but it seems reasonable to assume that it was the information included in Sun's compilation.

Another reference to the *Treatise* appears in an important Tang formulary. In 752, Wang Tao 王燾 (702–772), who served as an official in the Imperial Library, authored the *Arcane Essentials from the Imperial Library*. Wang made occasional comments on Cold Damage Disorders throughout his work but did not devote a specific section to them. He cites a text titled the *Treatise of Zhang Zhongjing*, which is one of the several names attributed to the recorded versions of the *Treatise*.⁸⁸

In summary, based on the information presented so far we can conclude that following the compilation of the Zhang's original *Treatise* and its revision by Wang Shuhe, the text was not widely circulated.

Cold Damage literature during the first century of the Northern Song (960–1065)

Not only was the *Treatise* rarely mentioned in medical literature for several centuries, but during the same period it was never officially revised or published. During the first decade of the Song dynasty, however, a copy was submitted to the imperial government by Gao Jichong 高繼沖, a Military Commander (*jiedushi* 節度使) of Jing 荆 Prefecture under the Later Zhou dynasty (951–960).⁸⁹ Despite the defeat of the Later Zhou by the Song in 960, Gao retained his position under the new regime. In gratitude, he submitted to the imperial throne a ten-chapter edition of the *Treatise*, which he claimed to have edited. How Gao had obtained the text and what skills he possessed to edit it is unclear, but this record indicates that some incomplete copies of the *Treatise* had survived under private ownership.

Given emperor Taizu's interest in public health and medical texts, one would have expected that government officials welcomed Gao's edition of the *Treatise*. However, they simply stored and ignored it. An eleventh-century author who himself participated in the compilation of a later edition of the *Treatise* explains that this was because Gao's edition was riddled with factual errors: "Its contents included many errors, which he did not investigate and correct. Although during that period [Taizu's reign] it was stored in the Imperial Library, the Library's officials also failed to prepare a critical edition."⁹⁰ Yet these errors could have encouraged government officials to revise the compilation, as they did with other surviving Tang-dynasty texts, rather than store it in the Archives. Perhaps it was the *Treatise*'s obscurity that prompted them to neglect and ignore it.

Roughly thirty years later, in 992, the government published an official formulary, the *Imperial Grace Formulary of the Great Peace and Prosperity Reign Period* (*Taiping shenghui fang* 太平聖惠方). This text became one of the most important formularies of the Song period. Cold Damage Disorders comprised about 10 percent (eleven chapters) of the book: chapters 8–14 focus specifically on Cold Damage Disorders, chapters 15–16 discuss seasonal disorders, and chapters 17–18 concentrate on heat disorders. Based on textual analysis, it seems that only chapter 8 was copied directly from a surviving

version of the original *Treatise*.⁹¹ The other ten chapters discussing Cold Damage Disorders probably date to the Tang dynasty, but their origin is unknown.⁹² The uncertainty is due to the fact that the editors of the *Imperial Grace Formulary* did not list their sources.

In summary, we can see that during the first decades of the Song Cold Damage Disorders was simply one strand of medicine among many, and largely outside the mainstream medical discourse. The *Treatise* was not generally available to scholars and physicians. Consequently, by the mid-eleventh century its doctrines and clinical applications were not part of mainstream medical practice. By the end of the 1060s, however, events conspired to place Cold Damage Disorders and the *Treatise* at the center of the official medical discourse.

The Song Edition of the Treatise

As we saw, the middle of the eleventh century marked the revival of the *Treatise* as it became the centerpiece of the Bureau's publications. Three of the Bureau's ten published texts originated from varying or partial versions of Zhang Ji's *Treatise*. None of them, however, encompassed the complete scope of the original text. Today it is impossible to determine which of the three texts corresponds most closely in content to Zhang Ji's ancient edition, and it seems that such was also the case during the middle of the eleventh century, as the three editors, Gao Baoheng, Sun Ji, and Lin Yi, state:

First we revised the *Treatise*. Then, we revised this canon [i.e., the *Canon of the Golden Casket and Jade Case*]. There are places where the two books differ in literary style. Their meaning, however, is the same – [namely,] the method of the sages. We did not dare to decide [which of the two is authentic] based on conjecture. Therefore, we decided to preserve them both.⁹³

Following the above reasoning, the editors of the Bureau revised and published all three available versions to allow scholars and physicians to judge by themselves on which one should rely. The first text, the ten-chapter *Treatise on Cold Damage Disorders (Shanghan lun)*, provided the most exhaustive discussion of Cold Damage Disorders. It also had the greatest impact on the course of medicine, as is made evident by the fact that it is the one that medical authors most frequently quoted in the following centuries.⁹⁴ The *Treatise* was also the only one among the three versions that the government printed in the less costly and more widely distributable small-character print. The second text is the eight-chapter *Canon of the Golden Casket and Jade Case*. This text also concentrates mainly on Cold Damage Disorders. According to the editors, “the *Canon of the Golden Casket and Jade Case* has the same content as the *Treatise* but holds a different name. We wish people to read them together. They serve as complementary [volumes]

to prevent a possible loss [of knowledge] to posterity.”⁹⁵ Given that most Song physicians did not refer to this book in their writings, it seems that its impact was limited. The third text, the three-chapter *Essential Discussions of Prescriptions in the Golden Casket*, concentrates on miscellaneous disorders, the second aspect discussed in the original *Treatise*.⁹⁶

Unlike the other texts the Bureau compiled, the *Treatise* was not meticulously annotated. When Lin Yi and his two colleagues edited it, they attached annotations only to clarify ambiguous characters or words, but added very little commentary regarding the contents of the text or its doctrines. Not having previous knowledge of Cold Damage doctrines, the editors, including the physicians working at the Bureau, did not possess the necessary tools to provide full annotation. Although the original *Treatise* had been compiled almost a millennium earlier, very few books on the topic were available and one could not rely on any other work to annotate it. On the one hand, this lack of annotation limited the circulation of the work since only a handful of scholars could understand it. On the other hand, it opened the door to scholars with limited medical education to write on the topic (see Chapter 5).

As the *Treatise* published by the Bureau has not survived intact to the present, it is difficult to reconstruct precisely the contents of the official Song edition. The two editions we have today are: The first, a copy of the original edition, apparently with no major changes, by Zhao Kaimei 趙開美 published in 1599. The second, a copy of an annotated text by Cheng Wuji 成無己, compiled around 1140 and published in the 1170s.⁹⁷

The *Treatise* was printed three times during the Song. The first printing, in 1065, was in large characters and became the standard edition. However, it had limited circulation because, “the number of medical texts increasing rapidly and paper being costly, the people could not afford to purchase the book.”⁹⁸ Consequently, the Directorate of Education published two additional editions in small-character texts in 1088.⁹⁹

Conclusion

In this chapter I have argued that changes in the distribution of population and new patterns of trade and urbanization created an epidemiological frontier predominantly in the south of China. This epidemiological frontier in turn created a medical crisis and consequently forced government officials to revive an ancient medical doctrine, Cold Damage Disorders. A third-century canon, the *Treatise on Cold Damage Disorders*, presented and discussed this doctrine which focused predominantly on treating contagious diseases endemic to southern China and the resulting epidemics. With contemporary medicine helpless in the face of an epidemic wave, a newly established government office, the Bureau for Revising Medical Texts, revised and published a wide range of medical literature, but predominantly focused on one medical genre, Cold Damage Disorders.

The Bureau's editors decided to revise and publish three surviving versions of the *Treatise* because they thought this text would provide theoretical and clinical means to combat epidemics. It is not accidental that the preface to the revised *Treatise* was the only one among those of the ten books revised by the Bureau that included the signatures of a number of officials from outside the Bureau: out of a total eighteen names, only four are of officials associated with the Bureau. The other fourteen include high-ranking officials, even four officials who served as prime ministers: Zhao Gai 趙槩, Ouyang Xiu 歐陽修, Han Qi 韓琦, and Zeng Gongliang 曾公亮.¹⁰⁰ The decision to revise and publish the *Treatise* – taken by government officials serving as editors in the Bureau, *not* by physicians – shaped medicine for decades to come. The medical literary scene expanded to include an ancient medical genre that had been out of circulation. Physicians and scholar-officials, the audience of these newly revised and printed medical texts, gradually realized that an inherent incompatibility subsisted between this genre and mainstream medical literature. A process of bridging this gap began slowly during the last decades of the eleventh century and the early decades of the twelfth. Medical authors, and presumably medical practitioners, started to integrate the revived ancient doctrine with their existing practices and with the doctrines of Classical Medicine – that is, the doctrine of systematic correspondence.

4 Drug therapy during the Northern Song dynasty

Drug therapy was, and still is, the most potent and widely used treatment in traditional Chinese medicine. Drug therapy includes two genres of literature – materia medica collections (*Bencao* 本草) and formularies (*Fangshu* 方書). Materia medica collections, as evident from their name, provide information about individual drugs or simples (*yao* 藥) and the symptoms they treat. The drugs are natural products taken from plants, animals, and minerals. Materia medica collections often served as reference texts during the education of a physician. Formularies list and discuss formulas (*fang* 方) or prescriptions composed of a number of individual drugs. The formulas were considered “proven remedies” collected by physicians during their clinical practice. The physicians transmitted them to their disciples and at some point the accumulated knowledge was published.

Being a powerful treatment, drugs carry various risks. Lin Xi 林希, a Song scholar who wrote a preface to a prominent contemporary materia medica collection, *Expanded Materia Medica* in 1092, discusses drugs’ benefits and risks:

The inability of a good physician to cure disease without drugs is like that of a good general’s to defeat an enemy without soldiers.¹ Soldiers’ appearance [and, accordingly, their various roles in combat] is easily recognizable [by their uniforms]. So, if [a general] deploys his soldiers correctly he can use their lethality to give life to [his] people. However, it is [much more] difficult to fully understand the innate characteristics of drugs [which wear no outer garment like a soldier’s uniform]. [Furthermore,] if [a physician] does not apply drugs correctly, then he might kill his patients with the very qualities of the drug that could have saved their lives. This is [an] awesome [responsibility]!²

Lin uses the warfare metaphor purposefully, gaining rhetorical purchase by highlighting the life-and-death nature of pharmacology made all the more pitched by the fact that drug’s power is not as easily identified by surface characteristics as soldiers, with their clearly marked uniforms. Adverse reactions and side effects of the constantly growing arsenal of drugs must have

raised the incidence of uninitiated physicians misuse of drugs with potentially lethal effects. Moreover, the increase in adulterated and fake drugs during the Song would only have compounded the inherent risks of that were growing proportionally with the number of new drugs. Lastly, the revival of Classical Medicine and Cold Damage Disorders must have created confusion even among educated physicians, since these medical approaches presented different terminologies and different conceptions of diseases and treatment. Consequently, the field of drug therapy underwent major transformations during the last decades of the Northern Song dynasty.

The origin of the transformations in drug therapy, much like in Classical Medicine and in Cold Damage Disorders, can be traced to the intervention of the Song government. In other words, the modes by which drug therapy knowledge was disseminated changed during the Song dynasty. Prior to the Song, most clinical knowledge flowed from generation to generation of rank-and-file practitioners, never passing under the eyes of government officials. Medical knowledge most often passed within a family or alternatively, via a master–disciple relationship, in which the master usually allowed only his best disciple to memorize and then copy his texts. Only a small fraction of medical knowledge was transmitted through imperial compilations and palace-based education.

The Song government's wide-ranging and unprecedented book-collection projects led not only to centralized, standardized, and hybridized medical knowledge, but also to equally unprecedented dissemination of newly forged medical texts through the feverish literary activities of scholar-officials (see Chapters 1, 2, and 3). Thus, older texts collected by Song officials initially served as the foundation for authoritative government materia medica collections and grand-scale formularies. Later this same foundation was used for a new style of materia medica collections.³

Prior to the Song dynasty, the two genres of drug-therapy literature – materia medica collections and formularies – did not overlap, providing different types of information. Materia medica collections provided predominantly basic information on drugs whereas formularies focused on clinical details. During the last decades of the eleventh century, Song authors attempted, to some extent, to combine these two genres, providing contemporary physicians with manuals containing information about both simples and clinical formulas. By the end of the Northern Song, physicians merged the doctrines of Classical Medicine with drug therapy (see Chapter 6).

The Song government also intervened in the drug markets by establishing an imperial pharmacy designed to control the availability and the prices of drugs. This pharmacy served the government to control the sale of fake drugs and curb merchants taking advantage of fluctuations in drug prices. The pharmacy sold both simples and pre-prepared prescriptions thus changing the way physicians and patients obtained their medications.

This chapter is divided into two parts. Section A focuses on the greatly expanded materia medica literature during the Northern Song. The three

government-published formularies of the Northern Song dynasty are discussed elsewhere in this study (Chapters 1 and 6, and Section B of this chapter) as they do not show such a radical change as we find in the materia medica collections. Section B focuses on a unique imperial institution that sold drugs and pre-prepared prescriptions to the people – the Imperial Pharmacy.

Drug therapy literature: overview

The most important resource of traditional therapy in China was drugs. In the realm of traditional Chinese medicine, there are two distinct terms which fall under the broad Western term of “drug.” One is the term “drug” (*yao* 藥) and the second is “formula” (*fang* 方). The former refers to a “simple,” if we apply the Western term, namely a specific singular medicinal material (originating from plants, animals, or minerals), which can be applied in treatment of disorders.⁴ Drugs, in Chinese medicine, can come either in crude or prepared form. Crude drug, literally translated – fresh drug (*shengyao* 生藥), is the medicinal material in its natural form. Processed or prepared drug (*shuyao* 熟藥) is a medicinal material that has undergone some preparation in order to enhance preservation or alter its medicinal properties. Prior to the Song, drugs were mostly collected in the wild. By the end of the Northern Song dynasty, however, medicinal plants were increasingly cultivated for sale in markets.⁵

In general, physicians formulated combinations of drugs with complementary effects, i.e., formulas (*fang* 方), to achieve the desired clinical results. By doing so they avoided undesirable side effects usually associated with consuming a single drug. Often, drugs in a formula enhanced or limited one another resulting in a milder effect without the unwanted effects. Constructing an effective formula involves more than simply combining drugs of complementary effects to obtain a desired therapeutic result. Physicians established guidelines for achieving optimal efficacy in combining drugs by enhancing drugs' curative effects and moderating side effects. The most common guideline is based on four bureaucratic ranks, according to which the ingredients of the formula are categorized. This categorization reflects the hierarchy of the imperial court and was titled accordingly: Monarch 君 (*jun*), Minister 臣 (*chen*), Assistant 佐 (*zuo*), and Envoy 使 (*shi*). Based on this categorization, the drug designated as monarch is usually the one perceived as the most efficacious in treating the principal symptom of the disease. The minister aids the monarch in treating the principal manifestation type but is also directed against secondary manifestations. The assistant reinforces the action of the monarch and the minister while eliminating their toxicity. The envoy facilitates and harmonizes the action of the three other types of drugs in the formula.

The earliest recorded materia medica collection, the *Divine Husbandman's Materia Medica* (*Shennong bencao jing* 神農本草經), dates to the late first or the second century CE. This text served as the foundation for a line of materia medica collections. The original text did not survive. It was a

Daoist master, Tao Hongjing 陶弘景 (456–536), who during his retirement years in Maoshan revised the text and greatly expanded it. Tao's work was titled *Divine Husbandman's Materia Medica, with Collected Annotations* (*Shennong bencao jing jizhu* 神農本草經集注). This collection included 365 drugs of the original text, which Tao annotated and added to it 365 additional drugs. One of the additional sources he drew on was a collection referred to as *Separate Records of Famous Physicians* (*Mingyi biele* 名醫別錄). Although both the original and Tao's text were lost, they have been reconstructed in later sources.⁶

Materia medica collections grouped together drugs according to source or origin – plants, minerals, and animals. They described the innate characteristics of the various drugs, especially the *siqu* 四氣 “four thermo-influences” of drugs (hot, warm, cold, and cool) and the *wuwe* 五味 “five sapor” (pungent, sweet, salty, sour, and bitter). These collections delineated the effects of each drug mostly in terms of eliminating symptoms. They often described the ability of the drug to lengthen life, the season and time of day to gather the drug, the desirable part of the plant that serves as a drug, and the preparation methods. The recorded data is essential for understanding the strength and the effects of each drug. In the era before laboratory analysis, the environment and season the plant grew in was the only means to control the concentration of active ingredients in drugs of vegetable origin.⁷ Physicians often complained that drugs sold in markets were not collected and prepared properly according to conventional standards.⁸

Over the centuries, as clinical practice advanced, the original materia medica collections were repeatedly revised with additional drugs supplemented to the existing ancient texts resulting in greater number of drugs listed in each new version. During the Song dynasty, the government sponsored the most authoritative revisions of the materia medica collections, as described below. Following the Song, the publication of these texts was, once again, mostly at the hands of private authors.

The earliest surviving formulary is the *Formulas for Fifty-two Ailments* (*Wushier bing fang* 五十二病方), unearthed from a tomb sealed in 168 BCE in Mawangdui, Changsha. This text records a wide range of illnesses treated with an equally wide range of formulas. The second famous formulary that survived to the present is the *Treatise on Cold Damage and Miscellaneous Disorders* dating to the third century CE, discussed in Chapter 3, above. Famous Tang-dynasty formularies include the *Essential Prescriptions Worth a Thousand* by Sun Simiao 孫思邈 and the *Arcane Essentials from the Imperial Library* by Wang Tao 王燾.

Formularies grouped together the formulas according to the major symptoms that they treat. In contrast to materia medica collections, which were somewhat encyclopedic in nature, formularies record what their authors considered to be proven formulas accumulated over generations of clinical practice. Throughout history, private physicians wrote down these texts and handed them down to their disciples. Unlike materia medica

collections, formularies did not descend from one constituting classic that was revised over and over again. Rather, formularies were often testaments to the clinical knowledge of a private doctor and did not have the social authority of a canon. During the Northern Song, for the first time in Chinese history, the imperial government commissioned and sponsored a number of formularies, some of which were the most extensive formularies to that date. Following the Song, the publication of formularies was, once again, mostly at the hands of private physicians.

Section A: Materia medica literature during the Northern Song dynasty

When we come to study the characteristics of the materia medica collections (*bencao* 本草) compiled during the Song dynasty one fact stands out: the sheer increase in the number of drugs included in these collections. The *Tang Materia Medica* (*Tang bencao* 唐本草), compiled in 659, included a total of 850 drugs whereas the *Daguan Materia Medica* (*Daguan Bencao* 大觀本草), published in 1108, included 1,744 drugs (see Table 4.1). This doubling in the number of discussed drugs signifies a major change that occurred during the Northern Song dynasty (960–1127). What brought about such an enormous increase in the number of drugs? Moreover, can we attribute this enormous increase to the Northern Song's booming economy, expanding trade, and growing markets? Lastly, we have to ask how and to what extent did changes in the practice of drug therapy during the eleventh century impact the medical scene? Below I answer these questions, while discussing the materia medica compilations of the Northern Song according to four stages.

Based on the surviving literature, we can define four stages in the transformations of materia medica collections: First, the reconstruction of drug knowledge by collecting, revising, and printing of ancient texts; second, the accommodation of materia medica collections to current practices; third, the transformation of materia medica collections into physicians' manuals by integrating them with formularies; and fourth, the introduction of classical doctrines to materia medica collections.

Stage I: Reconstructing drug knowledge

Early in his reign, the first Song emperor, Taizu, initiated the first government-sponsored revision of medical works. The initiative was followed by a long sequence of similar projects for revising classical medical texts of all genres. Taizu's project concentrated on reconstructing current medical knowledge. As part of this imperially sponsored project, officials collected available medical literature from scholars and common people. Following the collection, they revised and printed these books, which consisted mostly of drug therapy manuals since these were the most common and readily available texts. The editors focused on revising the texts and correcting typographical

Table 4.1 Important materia medica collections and number of drugs included

<i>Title</i>	<i>Date</i>	<i>Author</i>	<i>Number of drugs</i>	<i>Increase in number¹</i>
<i>Divine Husbandmen's Materia Medica</i> 神農本草經	1st–2nd century CE	Anonymous	365	
<i>Divine Husbandman's Materia Medica, with Collected Annotations</i> 神農本草經集註	6th century	Tao Hongjing 陶弘景	730	365
<i>Tang Materia Medica²</i> 唐本草	659	Su Jing 蘇敬	850	120
<i>Kaibao Materia Medica</i> 開寶本草	973 and 974; two editions	Liu Han 劉翰 and Ma Zhi 馬志	984	134
<i>Jiayou Materia Medica</i> 嘉祐本草	1057–1061	Zhang Yuxi 掌禹錫	1,083	99
<i>Illustrated Materia Medica</i> 本草圖經	1058–1062	Su Song 蘇頌	1,186	103
<i>Expanded Materia Medica</i> 重廣補注神農本草並圖經	1092	Chen Cheng 陳承	?	?
<i>Classified Materia Medica³</i> 經史證類備急本草	1082–1098 (not published)	Tang Shenwei 唐慎微	1,558	372
<i>Daguan Materia Medica⁴</i> 大觀本草	1108	Ai Sheng 艾晟	1,744	186
<i>Zhenghe Materia Medica⁴</i> 政和本草	1116	Cao Xiaozhong 曹孝忠	1,748	4
<i>Dilatations on Materia Medica</i> 本草衍義	1116 (published in 1119)	Kou Zongshi 寇宗奭	472	
<i>Systematic Materia Medica</i> 本草綱目	1596	Li Shizhen 李時珍	1,892	144

Notes

Song dynasty collections are located within the lines.

¹ For elaboration on the increase in the number of drugs, see Table 4.3.

² Another title of this collection is *Newly Revised Materia Medica (Xinxiu bencao 新修本草)*.

³ Its contents are included in the next two texts.

⁴ These two collections are the government-published versions of the *Classified Materia Medica*.

errors. The only change they introduced was expansion of the scale of the works by adding drugs or formulas from similar texts to the main text. For example, Song editors relied on the official *Tang Materia Medica* as the foundation to which they added drugs listed in private compilations.

The *Kaibao Materia Medica*

In 973, Taizu issued an order to revise the *Tang Materia Medica* (*Tang bencao* 唐本草), to update it, and to distribute it to prefectural offices.⁹ The Chief Steward of the Palace Medical Service (*Shangyao fengyu* 尚藥奉御), Liu Han 劉翰 (919–991), and another highly ranked physician in the service, the Daoist Ma Zhi 馬志 (fl. late tenth century), who later became Chief Steward himself, headed the imperially appointed editorial board. The association of these two figures symbolizes the meeting of two different trends in the history of drug therapy – the official materia medica tradition and the traditional privately compiled collections.¹⁰ In addition to Liu and Ma, the editorial board included seven officials from the Hanlin Academy; especially noticeable is the inclusion of three Imperial Physicians.¹¹

In order to update the *Tang Materia Medica* the editors relied on privately-compiled Tang collections such as the *Shu (Sichuan) Materia Medica* (*Shu bencao* 蜀本草), the *Gleanings of Materia Medica* (*Bencao shiyi* 本草拾遺), and the *Materia Medica with Notes on Pronunciation and Meaning* (*Bencao yin yi* 本草音義).¹² In addition to revising the contents and correcting errors the editors added information about 134 drugs previously unrecorded. Of those, 104 were taken from Tang books and only thirty were new previously unrecorded drugs.¹³

The editors completed their revision in 973, the same year the court issued the edict to revise the collection, and submitted it to the emperor. They titled the book the *Newly Detailed and Definitive Materia Medica of the Kaibao Reign* (*Kaibao xin xiangding bencao* 開寶新詳定本草, in short: *Kaibao Materia Medica*).¹⁴ However, the emperor was dissatisfied with the result. Consequently, in 974 he reissued an edict ordering a second revision adding three scholars to the editorial committee: Hu Meng 扈蒙, Li Fang 李昉, and Wang You 王祐. Li, a member of the Hanlin Academy and assistant in the Palace Library, was asked to supervise the second revision and was the chief editor. Emperor Taizu himself wrote the preface for this revision indicating its importance. In his preface he says: “In carefully examining [other] explanations and considering the forms and traits [of the drugs], the book adds critical remarks that correct errors. These are labeled with the words ‘contemporary annotations’.”¹⁵ The book was published and distributed in 974 under the title *Revised Materia Medica of the Kaibao Reign* (*Kaibao chongding bencao* 開寶重定本草).

It should be noted that the editors of the *Kaibao Materia Medica* focused mainly on revising and improving the *Tang Materia Medica*. In the preface to the original version of the collection the editors specify that they consulted a number of Tang-dynasty materia medica collections and “after evaluating and comparing them, we separated the important information from the worthless one.”¹⁶ They continue to describe their work stressing their meticulousness in correcting errors and retaining only verifiable information. In contrast to the extensive historical survey, the editors did not survey current

practices to expand the scope of the text, suggesting that they were concerned primarily with preparing a definitive revised version of the ancient book rather than truly reflecting the state of the field. This scholastic approach to medical texts continued for the first century of the Song until the publication of the *Illustrated Materia Medica* in 1062.

The *Kaibao Materia Medica* was the first medical book published by the Northern Song government. Advancement in printing technology enabled the government to print enough copies to promulgate it throughout the empire, helping to control education from the center.¹⁷ The introduction of printing eliminated the error-prone practice of copying texts by hand. One of the noticeable features of the text, which must have been possible with the advancement in print technology, is the usage of different character sets for parts of the text originating from earlier versions. In the words of the editors, “We used white characters for the text of the *Divine Husbandman’s Materia Medica*, black characters for the transmitted text of the *Separate Records of Famous Physicians*. The Tang dynasty additions and contemporary ones each were clearly annotated.”¹⁸ This arrangement of the text, as shown in Figure 4.1, enabled scholars to recognize the historical stratigraphy that constitutes the accretive nature of this text.¹⁹

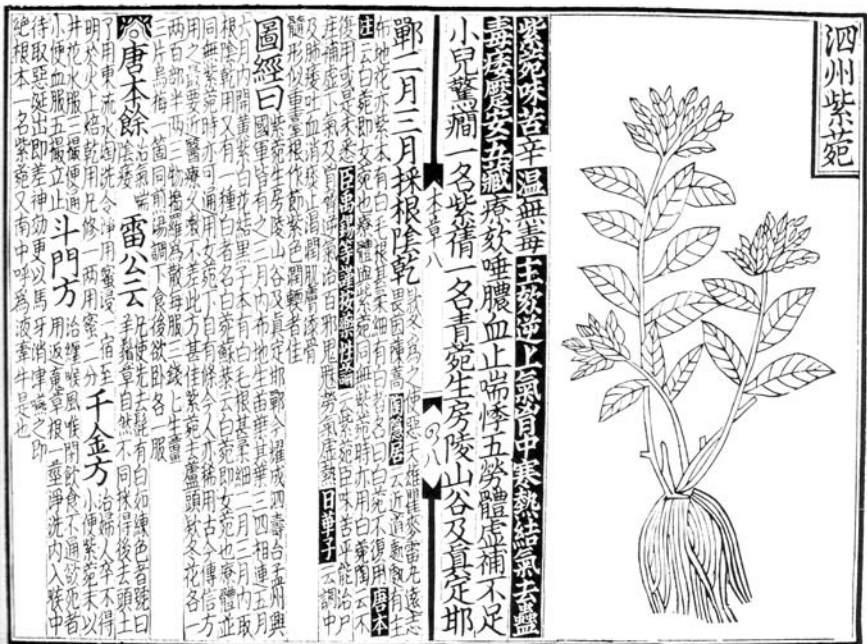


Figure 4.1 Representative page from the *Classified Materia Medica*
Source: *Jing shi zheng lei Daguang bencao*, reprint 1970, p. 228.

The *Jiayou Materia Medica*

In reaction to a wave of epidemics that struck the empire during the years 1045–1060, and in attempt to assist physicians and officials by expanding available medical literature, the government in 1057 established a special bureau to revise and publish ancient medical texts – the Bureau for Revising Medical Texts (see Chapter 3, above). The Bureau published ten medical works, two of which were materia medica collections, the *Jiayou Materia Medica* and the *Illustrated Materia Medica*. The first was yet another revision of ancient knowledge, whereas the second signified a shift of focus. It was the first time ancient drug knowledge was not revered, but rather critically evaluated in the light of contemporary practices.

The choice to revise the existing materia medica text was not made by the Bureau's editors but rather was imposed by the government. "In the second year of the Jiayou reign period (1057) the government issued an imperial edict ordering the officials [Zhang] Yuxi, [Lin] Yi, [Su] Song, and [Zhang] Dong to once again revise and edit the [existing materia medica collection]."²⁰ Zhang Yuxi 掌禹錫, one of the most prominent scholars of the Bureau, headed a large group of editors working on the project. This group was the largest to collaborate in revising a single book out of the Bureau's ten books. The project lasted three years, resulting in the publication of the *Jiayou Reign Period Supplemented and Annotated Divine Husbandman's Materia Medica* (*Jiayou buzhu shennong bencao* 嘉祐補注神農本草, in short: *Jiayou Materia Medica*). The editors' goal was to correct errors and supplement missing information. In other words, they revised and corrected ancient data without attempting to take into account, let alone critique, contemporary clinical usage.

Publishing another revised materia medica collection only a few decades after the last one has been printed may seem odd. However, although the *Kaibao Materia Medica* survived in the imperial archives, very few practitioners, even in the court, had read the text. Those who did complained about recurring errors and unresolved issues. The editors of the *Jiayou Materia Medica* echoed these complaints in the preface to their book:

[Contemporary] medical practitioners are aware that, as [the original materia medica canon] has been transmitted for a long period, later investigations have been increasingly preoccupied with textual criticism [and not medicinal effects of drugs]. Consequently, in recent times [the materia medica] has become rather deficient with respect to [clinical] application. Therefore, it is appropriate that there be a [new] compilation more useful in nurturing life and expelling disease.²¹

The editors further explain how information is accumulated in the materia medica genre and the evident problems that follow:

The medical practitioners of previous generations used drugs based on examination of patient. If the drug was effective they often recorded it. Consequently, the number of drugs grew larger. Looking at the scope of these books [materia medica collections], there are great many of them and it is difficult to read them all. The editors repeatedly abridged the texts making different choices for entries each time. Some of the records in the materia medica text are too sketchy; others have been used by vulgar people but the Imperial Physicians have not heard of them. Up to now, because editors did not meticulously document the entries, much of the information was lost. So, we seal this book's gaps and add annotations.²²

The Bureau's editors focused on the historical accuracy of the information included in the *Jiayou Materia Medica*, which led them to establish a definitive version of the book. They also took up an additional topic, the practical taxonomy of drugs. The old system categorized drugs according to their ability to promote immortality, prevent disease, and treat illness. The drugs of the latter group contained toxic principles that could overcome heteropathy. Criticizing the existing drug categorization, the authors write:

In the past all drugs were arranged according to upper, middle, and lower ranks. It is difficult to meticulously categorize the newly supplemented drugs [according to the old system]. Therefore, we merely appended them [to existing drugs] according to category.²³

Although the editors did not change the old system, the criticism they voiced reflects their reluctance to decide which drugs brought immortality and which contained toxic principles. They used the *Kaibao Materia Medica* as a starting point and consulted over fifty additional medical texts, sixteen of which were materia medica collections.²⁴

The *Jiayou Materia Medica* consisted of twenty-one chapters and recorded 1,083 drugs, of which 99 were not recorded in the *Kaibao Materia Medica*. Of those, 82 originated from ancient records and only 17 came from contemporary clinical experience.²⁵ The *Jiayou Materia Medica* signals the end of the revision of ancient texts and the reverence to ancient knowledge. The extensive preface of this materia medica delineates in detail the history of the genre. It also details the meticulous revision and annotation of the editors. For the first time, however, authors report problems and inconsistencies with ancient versus contemporary knowledge.

Stage II: Accommodating materia medica collections to current practices

Soon after the Bureau's editors began their work they realized that a simple revision of the ancient materia medica collections would not be adequate.

They launched a new compilation project. It is typical of the time that the office, which produced the largest bulk of newly revised medical books during the Song, also began a new era of compiling medical texts that interwove contemporary medical practice with ancient knowledge. In 1057, Su Song 蘇頌 (1020–1101),²⁶ headed a group of scholars compiling the new materia medica collection, the *Illustrated Materia Medica*. The collection's preface describes the reasons for launching a new project and the contemporary state of the field:

The information it [the *Kaibao Materia Medica*] contained concerning harmless or medicinally effective [drugs], cold or warm nature [of drugs], and sweet or bitter sapor of [drugs] can be called detailed and complete. However, the products from all regions come from different climates [and hence possess different treatment potentials]. They carry many names and are classified under many categories. Therefore, it is difficult to tell when one receives fake drugs. For example, people take the drug *Cnidium Monnierie* 蛇床 to be the seedling of the plant *Ligusticum Wallichii* 藜蘂, or *Anemarrhena Asphodeloides* 薺芎 is incorrectly passed off as Ginseng 人參.²⁷ Even the people of antiquity, worried about this [problem], let alone modern practitioners who obtain their drugs from the markets. The markets get their drugs from people of the countryside who collect the plants at random seasons [of the year]. If a practitioner uses these drugs without continually investigating their origin, and [at the same time] wishes to attack disease, isn't it unlikely he will fail?²⁸

It seems that two major issues concerned Su. First, he thought that contemporary doctors were not aware that identical drugs grown in different regions produce different effects on patients, since the concentration of chemical ingredients such as alkaloids in various parts of the plant differs. The increase in trade volume and distances made previously unavailable drugs readily accessible. Physicians, however, did not account for the variability in potency due to the drug growing in different climate and topography. Second, with the increasing volume of drug trade, due to higher demand, the number of fake drugs sold in local markets had increased. The solution, according to Su, was to make physicians understand that they have to consider additional characteristics of drugs such as geographical origin, season of harvest, and the specific part of the plant from which they came. He cautioned his colleagues to pay attention to the origin of each drug and its characteristics in order to assure the desired treatment without adverse reactions.

The *Illustrated Materia Medica*

Given the confusion resulting from the appearance of new drugs and the appearance of fake drugs, the government issued decree requesting information needed to compile an illustrated materia medica collection. This compilation

was to follow the example set by an illustrated appendix to the *Tang Materia Medica*. The decree read:

Later [the illustrated appendix of the *Tang Materia Medica*] fell out of circulation and [presently] it is rare to find a complete edition. The government ordered each circuit, prefecture, and district to report the regions where their indigenous drugs are grown. Furthermore, the government ordered that local people who can distinguish [drugs] should meticulously determine the shape, color, and size of the roots, stems, seedlings, leaves, flowers, and fruits of indigenous herbal drugs. The localities should also provide [information] about any insect, fish, bird, beast, jade, or stone [minerals], which can be used as medicinal drugs. For each item [the locality is required] to add an illustration, specify the season and month the flowers or fruits should be collected, and stipulate their [clinical] effects.²⁹

Although the imperial government did not dispatch officials to supervise the work, apparently it trusted local experts only to a degree. The government required each locality to enclose a specimen and an illustration to go with the information about the drugs so officials at the Bureau could verify that there is no confusion. This point has an interesting implication since it places locally acquired contemporary knowledge on a par with historically proven imperial records. This trend became much more prominent toward the end of the eleventh century, when physicians took over the compilation of drug therapy books.

The government decree did not cover only Chinese drugs. During the Song, overseas trade expanded rapidly. Spices, perfumes, and drugs were among commonly imported goods. Consequently, the government ordered that, “as for drugs produced in barbarian lands, someone must be assigned to interview the merchants of the official border markets and sea-borne traders, regarding those drugs that are produced abroad. [Then] use this information [to compile the text].”³⁰ In order to avoid confusion from hearsay the court further instructed imperial supervisors to

Obtain a sample of one to two *liang* 兩 [about fifty grams] or one to two specimens of each drug. These should arrive at the capital sealed via designated messengers. After certifying the official seal, [officials] are to draw illustrations of the medicinal substances. Include this information when compiling the *Illustrated Materia Medica*.³¹

The fact that imported drugs came under scrutiny indicates the diversity of medicine during the Song. If these drugs were not widely used, it is hard to imagine that the government would trouble to find and study them.

The compilation of the *Illustrated Materia Medica* symbolizes a change in materia medica literature. The editors of the collection relied solely on contemporary knowledge gathered from the rank and file of physicians and

common people. The goal of the project was to standardize this eclectic information. Drugs originating from different localities but bearing the same name were not recorded twice, as in some previous materia medica collections. In addition, the editors attempted to avoid multiple references to the same drug under variant names as occurred in past materia medica collections. Once the editors determined, often by means of comparing the accompanied sample of the drug, that more than one reference pointed to an identical drug, they placed these descriptions under one drawing of the drug, noting its different origin and different effects, if there were any.

In 1061 Su Song and his staff completed their work, and in 1062 the Bureau published the *Illustrated Materia Medica* (*Bencao tujing* 本草圖經). The work, which included 933 illustrations of drugs, recorded the origin of each drug, its habitat, specific season and month of collection, and its clinical applications. It also recorded processing methods and preparation. The editors treated imported drugs in a similar fashion. They added for the first time many folk prescriptions to supplement the information regarding drugs.³²

The size and the diversity of the project led to inconsistencies in the text as well as some discrepancies. The famous Ming dynasty physician, Li Shizhen 李時珍 (1518–1593), pointed out this aspect in his review of the book in 1596:

The textual research is detailed, enlightened, and rather elaborated. However, the illustrations [of the drugs] and the textual information do not [always] agree or correspond to each other. Some entries include an illustration but no explanation; others have the drug description but not the illustration. Still others include the explanations but not the illustrations.³³

Li also provides examples of records of drugs containing such discrepancies. It should be kept in mind that Li used these Song-dynasty illustrations in his own materia medica collection suggesting that the *Illustrated Materia Medica* served for centuries as a visual and textual standard of drug knowledge.

The two materia medica collections published by the Bureau, the *Jiayou Materia Medica* and the *Illustrated Materia Medica*, represented the written knowledge about drugs of antiquity and of contemporary drugs, respectively. These two publications, especially the latter, served as a standard for practitioners to work with. The illustrations included in the *Illustrated Materia Medica* served as a unique standard for drug identification thus complementing the bronze acu-moxa model's role in acupuncture.³⁴ These illustrations were continuously reproduced for centuries to come. Later officials who edited materia medica collections did not bother to or did not have the resources to produce new illustrations. This led to deteriorating quality, due to repetitive reproductions, until new illustrations were made during the Ming dynasty (1368–1644).

Stage III: Transforming materia medica collections into physicians' manuals

Surviving records suggest that during the last decades of the eleventh century, the common practitioner seldom used published materia medica collections, since their circulation was limited to provincial offices, as is evident from the following record, “the distribution of the two materia medica collections [of the Bureau] was not extensive and even the educated physicians [often] did not have [access to] both of them.”³⁵ Furthermore, the fact that one collection, the *Illustrated Materia Medica*, relied mainly on illustrations with only brief annotations, whereas the other, the *Jiayou Materia Medica*, included more detailed discussions of drug traits, created a situation in which physicians had to read both to master the art of drug therapy. This environment created the setting for the next change in materia medica literature.

In 1092, an eminent physician originally from Sichuan province, Chen Cheng 陳承 (fl. late eleventh century), completed the first privately compiled materia medica collection, *Expanded and Annotated Divine Husbandman's Materia Medica with Illustrations* (*Chongguang buzhu shennong bencao tujing* 重廣補注神農本草圖經, in short: *Expanded Materia Medica*).³⁶ Chen combined the information included in the two materia medica collections published by the Bureau into one comprehensive book, adding his own annotations to complete the work. He recorded mostly drugs that according to his experience proved to be effective, ignoring drugs recorded earlier but with unproven efficacy.³⁷ Chen's collection did not survive to the present, but we know that the text consisted of twenty-three chapters: twenty taken from the *Jiayou Materia Medica*, two from the *Illustrated Materia Medica*, and one included a table of contents.

Chen's work stands out for its harsh criticism towards practitioners during his time. This is well exemplified in the preface Lin Xi wrote to his work (see Chapter 6).³⁸

The *Classified Materia Medica*: the pinnacle of Song materia medica literature

Chen Cheng was not the only scholar working on materia medica during the late eleventh century.³⁹ Another private physician, also originating from Sichuan province, Tang Shenwei 唐慎微, soon overshadowed him.⁴⁰ Although Tang apparently was not aware of Chen's work, he too combined the *Jiayou Materia Medica* with the *Illustrated Materia Medica* into a single work convenient for practitioners. The scope of Tang's work, however, was much larger.

For some reason, Tang did not write a preface for his book, therefore we have to rely on other sources for details of his life. In 1143, a Jin-dynasty official originally from Tang's home town, Yuwen Xuzhong 宇文虛中 (1079–1146), wrote a postscript for Tang's work saying:

When he treated the literati, he did not seek financial payment; however, he did ask his patients to provide him with proven famous formulas and secret records [of drug therapy] as compensation. Therefore, the literati liked him very much. Whenever they came across a name of a drug or found a discussion of a formula in the Confucian Classics, histories, or various other books, they recorded it and informed him [Tang Shenwei] about it. Subsequently, he collected all this material and compiled this book.⁴¹

In other words, Tang obtained many formulas and drugs previously not recorded in the official collections.

Tang added information gathered from approximately 243 sources, both contemporary and ancient, not previously included in the official materia medica literature. These sources included most of the existing drug therapy literature, even Buddhist and Daoist texts.⁴² Tang's reliance on so many sources is unprecedented and telling. It seems that he took a new approach toward drug knowledge. He deviated from the common perceptions of early Song scholars that revered the information recorded in earlier materia medica collections, especially the imperial ones. Tang added to his book drugs that he perceived as proven and efficacious drugs. His innovation did not go, however, as far as discarding records of old, and possibly ineffective, drugs.

In 1098, Tang completed his mammoth manuscript, the *Materia Medica for Urgent Need, Classified and Verified from the Classics and Histories* (*Jing shi zhenglei beiji bencao* 經史證類備急本草, in short: *Classified Materia Medica*).⁴³ This text, which was not published until a decade later and did not include a preface by Tang, became the pinnacle of achievement in the materia medica genre until the end of the sixteenth century. A copy of Tang's manuscript ended somehow in the imperial library. Emperor Huizong (r. 1100–1126), who was highly interested in medicine, came across the manuscript, which caught his attention. Subsequently, he appointed Ai Sheng 艾晟 to head a group of scholars to revise and publish the work.⁴⁴ We have no direct evidence regarding Huizong's motivation, but we can assume that it stemmed from his general interest in medicine and his desire to expand medical literature to support medical education. In addition to revising Tang's manuscript, Ai incorporated Chen's *Expanded Materia Medica* into Tang's *Classified Materia Medica*, thus creating the largest materia medica ever. In 1108, the imperial government printed the collection under the title *Materia Medica of the Dagan Reign, Classified and Verified from the Classics and Histories* (*Jing shi zheng lei Dagan bencao* 經史證類大觀本草, in short: *Dagan Materia Medica*). Ai himself wrote the preface for the book.

The next edition of Tang's text came only eight years later in 1116, when Cao Xiaozhong 曹孝忠 edited and published the *Zhenghe Reign Newly Revised Materia Medica for Urgent Use, Classified and Verified from the Classics and Histories* (*Zhenghe xinxiu jing shi zheng lei beiyong bencao* 政和新修經史證類備用本草, in short: *Zhenghe Materia Medica*).⁴⁵ It is unclear why the

government ordered another revision of the text. We can surmise, however, that the rapid transformations in medicine and the shift in focus toward integrating classical doctrines and drug therapy during this decade may have inspired it (see Chapter 6). Tang's *Classified Materia Medica* reached its apogee in Zhang Cunhui's 張存惠 revision, the *Revised Zhenghe Reign Materia Medica for Urgent Use, Classified and Verified from the Classics and Histories* (*Chong xiu zhenghe jing shi zheng lei bei yong bencao* 重修政和經史證類備用本草), published in 1249.⁴⁶

Tang's original manuscript listed 1,558 drugs, of which only eight came from his own clinical experience. Most of the information on drugs came from his patients who provided him miscellaneous information they found in literature they read. When the government published the official version of Tang's book (*Daguan Materia Medica*), a decade after his death, the editorial committee supplanted it to include 1,744 drugs.⁴⁷ This number represents approximately a 50 percent increase in the number of drugs over the Bureau's materia medica collections, namely the *Jiayou Materia Medica* and the *Illustrated Materia Medica*, published half a century earlier. Only a much later collection, Li Shizhen's 李時珍 *Systematic Materia Medica*

Table 4.2 Important surviving formularies and number of formulas included

Title	Date	Author	Number of formulas
<i>Essential Prescriptions Worth a Thousand</i> 千金要方	659	Sun Simiao 孫思邈	3,500 232 entries
<i>Arcane Essentials from the Imperial Library</i> 外臺秘要	752	Wang Tao 王燾	Over 6,000 1,048 entries ¹
<i>Imperial Grace Formulary</i> 太平聖惠方	978–992	Wang Huaiyin 王懷隱	16,834
<i>Beneficial Formulas</i> [Collected by Su and Shen] 蘇沈良方	1075	Shen Gua 沈括 and Su Shi 蘇軾	
<i>Formulary of the Imperial Pharmacy</i> 太平惠民和濟局方	Daguan reign 1107–1110	Chen Cheng 陳承 <i>et al.</i>	Originally 297, final version 788 ¹
<i>Canon of Sagely Benefaction</i> 聖濟經	1118	Emperor Huizong 徽宗	
<i>Medical Encyclopedia</i> 聖濟總錄	1122	Shen Fu 申甫	20,000

Song-dynasty texts are located below the line.

¹ According to Chen Keji and Chen Weiyang 1963, p. 37.

(*Bencao gangmu* 本草綱目), published in 1596, eclipsed this number by listing 1,892 drugs (see Table 4.1). It is important to note that the extensive scope of Tang's work drew some criticism from various Song scholars and physicians who reproached him for including too many drugs, many of which, as he himself admitted, had not been in use for centuries.⁴⁸

When we come to analyze Tang's work we have to ask ourselves, what caused or triggered this dramatic increase in the number of drugs? I claim that the common explanation, which focuses on the expansion in trade and on the increase in import of drugs, does not hold. During the Song dynasty, China indeed experienced an expansion in both internal and international trade volume, but it did not occur dramatically at one point in time. This increase may explain the gradual addition of drugs to the materia medica collection in the *Kaibao Materia Medica*, published in 974 (134 drugs, a 16 percent increase, see Table 4.1) or in the *Jiayou Materia Medica* published in 1061 (99 drugs, a 10 percent increase). However, it cannot explain the change in the *Classified Daguang Materia Medica* published in 1108 (661 drugs, a 61 percent increase). We are back to the question, what caused Su Song, Tang Shenwei, and Ai Sheng to expand the quantity of drugs included in this materia medica by over 50 percent in such a short duration?

It seems that the reason that Tang and Ai added such a bulk number of drugs is probably related to the shift in population to south China, as discussed in the Introduction to this book. The textual source that provided the majority of "new" drugs to Tang's work, almost 500 drugs, was the *Gleanings of Materia Medica* (*Bencao shiyi* 本草拾遺), compiled by Chen Cangqi 陳藏器 (see Table 4.3). Chen, who flourished during the eighth century, originated from the southern prefecture of Siming 四明 (present-day Zhejiang province). We can safely assume that at least part of his collection reflected the drugs used in South China.⁴⁹ The fact that Tang relied on this work so heavily may indicate that he was highly aware of the dire need for southern drugs which are more suitable to diseases endemic to the region. We should remember, as discussed in Chapter 3 (above), that during the second half of the Northern Song dynasty the number of epidemics, most likely originating from the south, almost doubled from that of the first half. Another factor that may have contributed to the need to discuss southern drugs in Tang's collection was the publication of the Song *Treatise* (see Chapter 3, above). Zhang Ji, the author of the *Treatise*, lived in Changsha, southern China, thus probably relied on southern drugs in his formulas.

There are two additional innovations in Tang's work that we should mention. First, it was the first materia medica collection to supply ample data on processing drugs. Drug processing in Chinese medicine can affect clinical therapy, since it may change the properties or the effects of a drug. Presenting this type of information may indicate that doctors during Tang's era searched for better explanations for the clinical effects of drugs. In his discussion about drug preparation, Tang relied on a text possibly as old as the fifth century.⁵⁰

Table 4.3 Number of drugs added to materia medica according to origin

Origin	<i>Materia medica</i> collections	<i>Divine</i> <i>Husband-</i> <i>Men's</i> <i>MM, with</i> <i>Collected</i> <i>Annotations</i> <i>(6th century)</i>	<i>Tang</i> <i>MM</i> <i>(659)</i>	<i>Kaibao</i> <i>MM</i> <i>(974)</i>	<i>Jiayou</i> <i>MM</i> <i>(1061)</i>	<i>Classified</i> <i>materia medica</i>	
						<i>Daguan</i> <i>MM</i> <i>(1108)</i>	<i>Zhenghe</i> <i>MM</i> <i>(1116)</i>
<i>Divine Husbandman's</i> <i>MM (1st/2nd century)</i>	365		365	365	365	365	365
<i>Separate Records of</i> <i>Famous Physicians</i> <i>(3rd century)</i> 名醫別錄	365		365	365	365	365	365
<i>Tang MM</i> <i>(7th century)</i>			120	120	120	120	120
<i>Kaibao MM</i>				134	134	134	134
<i>Jiayou MM</i>					100	100	100
<i>Tangben yu</i> 唐本餘						7	7
<i>Shiliao yu</i> 食療本草 (714)						8	8
<i>Gleanings of MM</i> 本草拾遺 (739)						488	488
<i>Haiyao MM</i> 海藥本草 <i>(~10th century)</i>						16	16
<i>Illustrated MM</i> <i>(1062)</i>						98	103
<i>Xinfen tiao</i> 新分條						35	34
<i>Tang Shenwei's</i> new drugs from personal experience						8	8
Total	730		850	984	1,084¹	1,744	1,748

Source: Adapted from Okanishi 1974, p. 285, also reproduced by Shang Zhijun *et al.* 1989, p. 219.

Notes

The figures in parenthesis mark the year of publication; all are CE.

MM = Materia Medica.

¹ The number of drugs listed (1,084) differs from that in Table 4.1 (1,083). There is a similar difference in the number of drugs added to the *Jiayou Materia Medica* (100 new drugs here vs. 99 in Table 4.1). The reason for this difference probably lies from differences in primary sources or in their analysis. Throughout the chapter, I use the figure of 1,083 drugs but since this table is adapted from Okanishi, I follow his figures here.

Another intriguing innovation in Tang's work is that within the information on each drug he included names of formulas that contain that drug. For centuries different audiences had read materia medica literature and clinical formularies. The former provided a list of drugs with adjoining description of the drug's traits and characteristics. Such books were generally not meant to guide practitioners; instead they were of an encyclopedic nature. Accordingly, they did not include any practical information on the application of drugs in specific formulas. Formularies, on the other hand, recorded proven remedies or prescriptions handed down from master to disciple. Formularies existed mainly within a medical lineage and rarely achieved wider circulation prior to the Song dynasty. By integrating these two genres, though in a rudimentary way, the *Classified Materia Medica* blazed the path for a more extensive and comprehensive integration.

A question begging to be asked is why a prominent physician like Tang devoted almost two decades to compile this enormous work. He did not detail his motives, but Ai's preface to the *Daguan Materia Medica*, which was written to glorify Tang's work, provides us with some insight. Ai begins the preface by detailing the familiar genealogy of materia medica collections and acknowledging Tang's contribution. Then he turns to describe the state of the field. He begins harshly, stating that medicinal drugs harm people more than disease. He says:

We ought to study and think about this [problem]. If we will use books to study these doctrines, use illustrations to ascertain the [drugs'] authenticity, and formularies to discover their effectiveness, there is no need to be poisoned 70 times in order to master drug therapy and no need to break one's arm three times in order to master medicine.⁵¹

Stage IV: Introducing classical doctrines to materia medica collections

In 1116 a lowly official serving as a Gentleman for Fostering Uprightness 承直郎, Kou Zongshi 寇宗奭 (fl. early twelfth century), submitted an innovative materia medica collection to the Imperial Medical Service. Although during the years 1111–1117 Kou served as a Drug Inspector at the Office of Miscellaneous Purchases (*Za mai wu* 雜買務) for the Imperial Medical Service, he could not get his work published.⁵² Only in 1119 his book, *Dilatations on Materia Medica* (*Bencao yanyi* 本草衍義), was published following an intervention by his high-ranking nephew Kou Yue 寇約.⁵³ As the title reflects, Kou's ambitions had not been outstanding: all he wanted was to spread out the meaning of earlier materia medica collections, namely the *Jiayou Materia Medica* and the *Illustrated Materia Medica*. Kou's book, however, signaled a major shift in the materia medica genre and in medicine in general.

The book was a result of a private initiative, much like Chen Cheng's *Expanded Materia Medica* and Tang Shenwei's *Classified Materia Medica*.

Details about Kou's life, his locality, and dates of birth and death are not recorded.⁵⁴ He worked on his text for approximately ten years while serving as an official in Li province 澧州 (present-day Hunan province). Kou's status changed dramatically a few years later, after the publication of his book, once scholars and officials realized its significance. Furthermore, once medical authorities examined the contents of Kou's book, it received high praises and was later, in 1195, added to an edition of the *Daguan Materia Medica*.⁵⁵

Kou's book consists of twenty chapters. The first three chapters provide a lengthy preface and prolegomenon, while the rest of the chapters discuss the traits of specific drugs. The number of drugs discussed in the book (472) is significantly lower than that of former Song materia medica collections, about one quarter of the number of drugs in the *Zhenghe Materia Medica* published some years earlier. Kou focused on a limited number of drugs, which he considered most important for clinical practice, providing more details about each entry. For each drug Kou aimed to expand the understanding of its functions and innate traits. In other words, his discussion was aimed to be more qualitative than quantitative.

Kou wrote his book to serve as a commentary to supplement the *Jiayou Materia Medica* and the *Illustrated Materia Medica*. Kou felt, according to his preface, that the discussions of these two books were too limited in their approach to and analysis of drugs' characteristics and effects.⁵⁶ Unlike the standard set by the *Illustrated Materia Medica*, Kou's book did not include illustrations of drugs. This suggests that the book's goal was to concentrate on drugs' actions and their properties, and to explain how these properties relate to more general doctrines.

Much like his predecessors, Kou corrected mistakes he found in existing texts. Given the authority of earlier materia medica collections held in clinical practice and in medical education, correcting their mistakes was as important as raising new ideas. In addition, he concentrated on classical doctrines and their implications and applications with regard to the use of drugs. Kou also went all out against popular healers and their longevity drug therapy. He says, "I do not know from which generation the Daoist practice of longevity drugs begun. [However,] the number of people this practice killed is legion. In spite of that, generations have admired and valued these practices. This is bewildering." Kou continues saying "[they] pray [hoping that the patient] will not die but actually he dies quickly. They call this wisdom. How can it be?"⁵⁷ Kou considered this usage of alchemical drugs to be a major contemporary problem and he discusses it in several places in his text.

The *Dilatations on Materia Medica* stands out for being the first materia medica collection to discuss the doctrines of Classical Medicine. Most of the discussion appears in the text's extensive three-chapter-long preface. For example, Kou reiterates some motives from the classical canons: "Do not treat those who are already sick, treat them before they are sick," and in

another instance he says, “Dispensing drugs in a perfect way is not as good as maintaining health.”⁵⁸ Kou also reiterates that the naturalistic doctrines of Yin–yang and Five Phases are essential to drug therapy. This topic is further discussed in Chapter 6, below.

Section B: The public pharmacy in China

The increased scope of materia medica collections represents one aspect of the change in drug therapy during the Northern Song dynasty. Our discussion of changes in drug therapy will not be complete if we do not examine a unique institution that probably affected many aspects of dispensing drugs and formulas – the Imperial Pharmacy. The Pharmacy changed the way people obtained and consumed medications during the Northern Song.

In his book *Discussion of Medicine (Yi shuo 醫說)*, dated to 1189, a physician named Zhang Gao 張杲 (fl. late twelfth century) describes the following medical encounter:

In former times, there was a Buddhist monk who contracted a disease with symptoms resembling leprosy. [Unlike leprosy] when the monk’s disease progressed it did not cause skin ulcers or sores. Instead, each morning the monk shed about a pint of white skin. It looked somewhat like snake slough. A doctor told him that this condition was caused by excess consumption of roasted and fried food. The physician prescribed the Detoxifying Realgar Pellet of the *Pharmacy’s Formulary*. The monk took three or four doses and was cured.⁵⁹

This quotation does not stand out as innovative in its diagnosis or treatment among other medical discussion from the Song dynasty (960–1279). Yet there is something unique in the quotation: an allusion to an Imperial Pharmacy, a medical institution established during the Northern Song (960–1127).⁶⁰ This imperial institution impacted the lives of commoners and physicians alike. The Detoxifying Realgar Pellet (*Jiedu xionghuang wan 解毒雄黃丸*) the attending doctor prescribed for the monk’s disease was, according to the record, listed in the Imperial Pharmacy’s formulary.⁶¹ When we examine Song dynasty medical formularies compiled before the publication of Imperial Pharmacy’s formulary, we find no record of this prescription. The Pharmacy prepared and sold these pellets, as it did with a wide range of other medicines. Although the text is not specific on this point, we can assume that the monk bought the Detoxifying Realgar Pellet in a ready-made pre-packed form at one of the branches of the Imperial Pharmacy.⁶²

In the pre-modern era, patients rarely obtained medications themselves. Instead, they relied on traditional healers, the majority of whom either collected medicinal herbs in the wild or acquired them in markets from an array of drug-sellers. Accordingly, there was no guarantee of a reliable and continuous supply of all known drugs. Moreover, the quality of available

medications was often questionable. Doctors had to prescribe, in large part, seasonably available drugs, not necessarily those best suited for the treatment of the patient's specific medical condition. During the Northern Song dynasty the imperial government changed the drug market by establishing an Imperial Pharmacy.

The Imperial Pharmacy was the first government-sponsored and -operated public pharmacy or apothecary in China.⁶³ It was probably the first such institution in the history of human civilization in terms of scale and complexity. According to surviving records, the Imperial Pharmacy, which was established in 1076, existed in various forms at least until the seventeenth century. From its establishment, the Pharmacy was a government-sponsored, -operated, and -regulated institution, oriented toward controlling the drug market; later it transformed into a more medically oriented institution. The main question that we have to ask is why did Song officials persuade the emperor to order the establishment of such an elaborate and costly imperial office, one that was not deemed essential for previous governments? What was the social and medical environment that brought about this institution? Lastly, we need to ask, what was the impact of such an institution, if any, on medical practice?

Given extant data, it seems that the Song government established the Imperial Pharmacy for two reasons: to monopolize and regulate contemporary drug markets as part of Wang Anshi's economic and administrative reforms and to fight epidemics. The former was set to limit the power and the impact of the plutocrats who manipulated market forces to their advantage. Over a number of decades the Pharmacy evolved, adapting unique business strategies to cope with changing environments and economic conditions.

Originally, the Imperial Pharmacy sold individual drugs to patients according to doctors' formulas or prescriptions. The patients would then take these drugs home and make the prescribed preparation according to specific instructions. Often they would place the individual drugs together in water, boil the mixture in order to make an infusion (*tang* 湯), which they then drank. Later on, the Pharmacy began to sell 'pre-packaged preparations' (*heji* 和劑), something akin to ready-made patent medications, in addition to the individual drugs.⁶⁴ This new line of pre-prepared and pre-packaged medicines, which not only transferred the responsibility for and power over preparations from the physician to the patient, but also standardized and centralized the disbursement of medications, had a major impact on medical practice.

In summary, the Pharmacy was a profitable government office while, at the same time, Song officials deemed it an institution for benefiting the people. Although the existence of the Pharmacy must have changed medical practice, we find almost no references to it in medical literature. This oversight was not accidental and probably resulted from the sale of pre-prepared, pre-packaged medications that triggered an unwelcoming reaction by contemporary physicians as discussed below.

The establishment of the Imperial Pharmacy: Wang Anshi's reforms

The Song government did not establish the Pharmacy as a medical institution; rather it was part of broader economic reforms. The Northern Song dynasty, especially from the middle of the eleventh century on, was a period of government activism. I borrow the term “economic activism” from Paul Smith, who states that it is

first, a propensity to participate in the commercial economy both directly, through monopolies and government enterprises, and indirectly, through commercial taxation; and second, a commitment to the use of state power both to promote economic activity and to increase the government's share of the economy's total resources.⁶⁵

One of the most celebrated and debated eras of changes and reforms during the Song dynasty was the last four decades of the eleventh century and the first two decades of the twelfth. During that period, the scholar-official Wang Anshi 王安石 (1021–1086), who served as Grand Councilor during the years 1069–1074 and 1075–1076, instituted wide-ranging reforms of the state's structure. Historians have referred to these reforms as the New Policies of Wang Anshi. These reforms shaped the political and economic landscape of the Northern Song dynasty until its demise.⁶⁶ Wang's policies were abolished following his departure from politics but were reinstated and again removed a couple of times before the end of the Northern Song in 1127.

One of Wang's main concerns about the economy of his era had to do with the role played by the great merchants, whom he labeled the “engrossers” (*jianbing* 兼並). These plutocrats, according to Wang, manipulated the markets' prices by buying products cheaply when in abundance and selling them at a higher price when the market dwindled, thereby accumulating great wealth.⁶⁷ For example, an edict dating to 1072 lamented that “traveling merchants from all over the empire who bring goods to the capital are put in great distress by the ‘engrossing houses’ and many must sell at a loss and go out of business.”⁶⁸ In order to fight these engrossers and as part of the “economic activism” of the New Policies, Wang implemented in 1072 a new economic policy titled the Market Exchange System (*Shiyi fa* 市易法). This was a system of state monopolies, aimed at neutralizing the monopolist and manipulative powers of the large merchant families by assuming the function of primary wholesale distributor.

A set of new government offices, Market Exchange Offices (*Shiyi wu* 市易務), which intervened in commercial activity, implemented this policy. The government established these offices in the capital and in other major cities to control and set the prices of mercantile goods, stabilize markets by buying excess produce during harvest seasons and selling during times of shortage, and making loans to small merchants so that the larger ones could not drive them out of business.⁶⁹ Although we have no definite record that the

Imperial Pharmacy was part of Wang's mission to use government control to regulate the markets, it fits the pattern of action, and Wang's government established it in 1076, at the end of the New Policies period.

The Imperial Pharmacy

In the sixth month of 1076, the imperial Northern Song government expanded the activities of its Market Exchange System by establishing a new office – the Office of Selling Drugs (*Maiyao suo* 賣藥所).⁷⁰ This institution was the precursor of what later became the Imperial Pharmacy (*Heji ju* 和劑局, literally, “Bureau of Prepared Prescriptions”).⁷¹ The Office of Selling Drugs, as its title indicates, was designed primarily as an economic institution with the goal of regulating markets. Unlike other government monopolies established as part of the Market Exchange System, the government established the Office of Selling Drugs (i.e., the Pharmacy) under the authority of the Imperial Medical Service (*Taiyi ju* 太醫局). It was an elaborate institution serving various functions as its alternative name hints – the Office of Processing Drugs (*Shuyao suo* 熟藥所). First and foremost, this office served as an agency for preparing and stocking an inventory of drugs, ready for sale at regulated prices. At the same time, it served as subsidiary of the Imperial Medical Service ready to dispense medication whenever large-scale epidemics erupted.

Initially, the Pharmacy provided a centrally monitored, centrally controlled drug market for the capital district only. Given the chaotic state of the drug market during the eleventh century, the establishment of this office probably enhanced government's crackdown on quacks and charlatans who often prescribed and sold fake drugs. The Pharmacy lowered the prices of drugs, essentially limiting the market share and, at times, even driving the large merchants who monopolized the drug markets out of business.⁷² Shen Gua 沈括 (1031–1095), one of the most prominent scholar-officials of the Northern Song, proclaimed that

During this time, the prices of [Pharmacy's] drugs were lower by one third in comparison to market prices. Each year the Census Bureau wasted 100,000 strings of cash [of possible profit]. All the people of the court praised it [i.e., the Pharmacy]. When the forefathers originally established it, the Pharmacy was a benevolent institution.⁷³

As far as we know the Imperial Medical Service did not instruct physicians serving in official positions to use drugs purchased from the Pharmacy, the only exception being in times of large-scale epidemics when medicines were distributed free of charge. The Pharmacy proved to be a flourishing business. In the first year of its existence it made “a profit of one hundred percent.”⁷⁴ Another imperial record states that the Pharmacy's earnings stood at no less than 25,000 strings of cash for the first year.⁷⁵ The Pharmacy's sales flourished and in

1079, only three years after its establishment, its earnings had grown to 30,000 strings of cash.⁷⁶ In 1113, its total earnings ballooned to 400,000 strings of cash.⁷⁷ This sum was roughly one percent of the total earnings of the imperial government during this period, which stood at around 48 million strings of cash. Just for the sake of comparison, the total annual earnings of another much more prominent and long-standing state monopoly, the Spices and Alum Monopoly, came to about one million strings of cash during this period.⁷⁸

This formidable governmental income from selling drugs at the Pharmacy did not go without criticism from the ranks of scholar-officials. Later writers, who commented on the Pharmacy's role in society and politics, proclaimed that profits hindered this institution from fulfilling what they perceived as its original destiny of benefiting the people.⁷⁹ It seems, however, that their claims were probably motivated by changing political scenes rather than concrete claims since the Pharmacy, at least in its early years, was predominantly an economically oriented institution that stabilized drug prices and supply. Only later, during the early twelfth century, did it shift toward becoming a medical entity servicing the people in addition to, but not instead of, making a profit.

The Pharmacy was composed of two sections as its original titles suggest – a “factory” and a “drugstore.” The first, the Office of Processing Drugs, was responsible for transforming fresh or crude drugs into a prepared form. The second section, the Office of Selling Drugs, was responsible for selling the prepared drugs to customers. We should first focus on the Pharmacy's drug processing function, meaning that certain preparation methods are applied on the crude or raw drugs in order to enhance their effects and to make them more durable than their original form.

Processing drugs, according to Chinese medicine, has two goals. The first is to enhance the potency or modify the specific action or actions of the medicinal material. For example, a fried drug may be regarded as more hot in nature than a fresh drug. Other common processing techniques may cause a drug to affect more specifically a certain visceral system of functions in the body or enhance a specific therapeutic effect, such as drying. This change is achieved usually by processing the drug via baking, frying, roasting, or cooking with a reagent such as wine, vinegar, brine, or ginger, just to name a few. In other cases, the processing is limited to different drying methods. The second goal in processing a drug is to make it more durable. According to traditional Chinese medical compilations, fresh drugs, especially from plant origin, tend to dry up and lose potency. The processing of the crude drugs helps preserve their potency for a longer duration than their original form.⁸⁰ It is important to note that from a modern pharmaceutical perspective, the mere slicing of medicinal material into pieces increases its surface area, thus increasing its potency since more active material can be released while boiling the drugs in water to make the infusion for the patient to drink. Once the processing stage was completed, officials packed and sealed the drugs and transferred them to the drugstore.

The second section of the Pharmacy, the Office of Selling Drugs, stored the sealed packages for sale by imperial officials. It is unclear whether or not the Pharmacy's officials, who were not necessarily physicians, served any function in diagnosing patients or prescribing drugs, as was common in private pharmacies during the Song dynasty and still is at present.⁸¹ It is more likely that physicians not employed at the Pharmacy prescribed the prescriptions for patients who then purchased the medicine at the Pharmacy. Another possibility is that patients came to obtain medications based on their personal know-how. According to surviving historical records, there were no restrictions regarding who could purchase drugs at the Pharmacy.

Historical records suggest that the Pharmacy obtained the drug materials needed to mass-produce the drugs and compounds employing two procedures. The first was based on tributes or taxes. The government devised laws requiring each region to contribute or send the Pharmacy a designated yearly quota of the types of naturally grown herbs, minerals, or animal available locally. The quantities and the types of drug materials varied from region to region.⁸² The second procedure for obtaining drugs was to purchase drug materials from local merchants, local drug growers, or drug collectors. To handle those transactions, the government established the Office of Miscellaneous Purchases (*Zamai wu* 雜買務) under the authority of the Court of the Imperial Treasury (*Taifu si* 太府寺).⁸³ This office employed officials in charge of purchasing “fresh drugs” for the Pharmacy. Those officials, according to the records, were supposed to differentiate between authentic and fake drug material and between similar or identical drugs originating from different geographical origins.

In addition to the fact that the Pharmacy was a profitable imperial institution, it enabled the government to claim it was aiding the people in dire times and showed the emperor's concern to the welfare of the population. Indeed, according to various government records, it played an active role in battling epidemics by compounding specific formulas in large quantity, according to the directions issued by the Imperial Physician's office. These medicinal formulas were then distributed in the affected areas free of charge. There are records of cases during the 1090s when the Imperial Medical Service dispensed drugs from the Pharmacy to treat widespread diseases and epidemics. For example, in 1094 an epidemic raged through the capital district. The emperor, following a tour of the region, dispatched medical officials from the Pharmacy to diagnose the epidemic and prescribe drug medications.⁸⁴

Expanding the Pharmacy's operations

The Imperial Pharmacy did not change during the first twenty-five years of its existence. In 1103, however, the government ordered the two sections of the Pharmacy to become two independent departments bearing new titles: the “factory” – the Office of Producing and Combining Drugs (*Xiuhe yaosuo* 修合藥所), and the “drugstore” – the Office of Selling Out Drugs (*Chu maiyao*

suo 出賣藥所).⁸⁵ Under the new organization, the Pharmacy included seven offices: two sites for preparing the drugs and five sites for selling the drugs.⁸⁶ The number of facilities increased, probably increasing production and sale volume, whereas the Pharmacy's functions and products remained the same: processing simples and selling only processed drugs.

After almost three decades of operations, government officials finally began to acknowledge the beneficial effects of the Pharmacy. In 1103, the Vice Director in the Secretariat-Chancellery (*Zhongshe menxia shilang* 中書門下侍郎), He Zhizhong 何執中 (1044–1117), submitted a memorial to the court stating, “since the benefits of the Pharmacy are so great, it will be proper to promote it by establishing a branch everywhere that already has a Market Exchange Office.”⁸⁷ In other words, He suggested that the government should permit a larger number of towns and cities to establish local satellite branches of the Pharmacy. Based on the evidence we have, it is difficult to be sure if the government accepted He's recommendation or not. However, many Ming dynasty (1368–1644) local gazetteers recorded the existence of a Pharmacy at the prefecture and county level. Moreover, some of these records mention that the specific facility was established during the Song dynasty.⁸⁸ For example, one record mentions the expansion to seven facilities in the Chongning reign period (1102–1106) and mentions that the capital city of each prefecture had to set up a local Pharmacy.⁸⁹ An imperial edict dating to 1109 states:

All the circuits' capitals and prefectures, as in earlier times, have re-established the Office of Preparing Drugs. Continuing the earlier practice, they appointed a Supervisory Official from the Pawnbroking Office to manage concurrently [the purchase of] raw materials for processing drugs. If there is an unfilled position [in an office], then the relevant Imperial Pharmacy and Office of Producing and Combining Drugs should deal with the matter.⁹⁰

Based on this evidence, as well as scattered references from Song-dynasty local gazetteers (see below), we can conclude that branches of the Pharmacy were opened at the prefecture and county levels. Unfortunately, we do not have records stating the number of branches established during this specific period nor how many existed during other eras of the Song dynasty.⁹¹ It is important to note that these local branches of the Pharmacy sold individual drugs furnished by the two factories located at the capital, Kaifeng, or at the Circuit capital.

In 1114, the supervising office of the Pharmacy was transformed into the Court of the Imperial Treasury.⁹² This may indicate the rising status of the Pharmacy, since it became a subsidiary of the Ministry of Treasury rather than the Imperial Medical Service. It may also indicate that the Pharmacy continued to hold its economic function of regulating the drug market and to increase imperial revenues. Besides the change in bureaucratic affiliation,

the Pharmacy's name also changed becoming the Bureau for Benefiting the People (*Huimin ju* 惠民局). Consequently, the name of the factory department also changed to the Bureau of Medical Drugs and Compounding Pre-packaged Prescriptions (*Yiyao heji ju* 醫藥和劑局).⁹³

Originally designed to keep a stable supply of drugs that make up formulas prescribed by physicians, the new title of the Pharmacy's factory came to emphasize the sale of pre-packaged preparations. Hence, the Pharmacy in addition to producing and selling only prepared *drugs* also began to prepare and sell pre-packaged prescriptions in ready-made, easy-to-consume forms, such as pills or powders. Selling pre-packaged prescriptions was not new. However, given the extent of the Pharmacy's operations and the concurrent printing of its formulary, which listed the prescriptions on sale, this change probably impacted the way patients bought medicine. Essentially, it reduced the need to consult a physician prior to purchasing medicine, centralizing a certain amount of medical "power" in the hands of the State and outflanking, intentionally or not, the professional purview of physicians. It is possible that the Pharmacy's change in focus resulted from the need to find a new line of products differing from the prepared drugs on sale at the local branches of the Pharmacy.

The new title of the drugstore, the addition of "benefiting the people" to it, also suggests its new goal, which by now was radically different from the original objective. Upon its establishment in 1076, the Pharmacy served as an economic tool designed to control the drug market and its prices. By 1114, the Pharmacy claimed to focus on benefiting the people and not merely on selling drugs and regulating the market. This change relates to Emperor Huizong's conception of the virtues of the sage emperor and how he should act as one.⁹⁴

The Pharmacy after the loss of the north

The enormous costs of alleviating the military pressure exerted from the north by the Jurchen forces during the 1120s, led the Northern Song government to redistribute resources, affecting also the Pharmacy system.⁹⁵ Eventually, with the invasion of the Jurchens into North China and the establishment of the Jin Empire rule over it in 1127, the Pharmacy, much like many other imperial institutions ceased to function, at least temporarily.

Already, in the final years of the Northern Song dynasty, the effects of the turmoil in the north, as well as the internal unrest, were felt. The historical evidence for this period is inconsistent, but apparently the government reduced the Pharmacy's budget. One document even suggests that the operation had been halted in 1122.⁹⁶ Another record mentions that Hanlin physicians instructed the Pharmacy's branch in Lin'an prefecture (present-day Hangzhou) to dispense medications to treat diseases among the common people.⁹⁷

Once the Jurchen Empire conquered North China in 1127, the Song court fled southward. Only a few years after relocating to the south, in 1136, the

new Southern Song emperor Gaozong (r. 1127–1162) issued an edict ordering the reestablishment of the Imperial Pharmacy system, not only in Lin'an, the new capital of the Southern Song, but also throughout the empire, under the supervision of the Imperial Medical Service. The edict ordered that the new facilities should follow the same organization of the old ones in Kaifeng, the capital of the Northern Song.⁹⁸ It seems that the Pharmacy's benefits were so widely recognized that Emperor Gaozong, in spite of limited economic resources, chose to reestablish it as soon as possible. In 1148, the Pharmacy's name changed to the Bureau of Benefiting the People in Great Harmony (*Taiping huimin ju* 太平惠民局), and its supervising office was once again the Court of the Imperial Treasury.⁹⁹ Shortly thereafter, local branches were also reestablished and the Pharmacy service flourished. In 1151, the Pharmacy's expansion reached over seventy drug-stores scattered throughout southern China alone – i.e., the region governed by the Southern Song dynasty.¹⁰⁰

Meanwhile, although the surviving evidence is rather limited, it seems that the Jurchen Empire itself *also* adopted its predecessor's institution; it kept the Pharmacy functioning in north China. For example, we know that in 1154 the Jurchen government reestablished the Pharmacy in its capital.¹⁰¹ More research is needed to paint a detailed history of the Pharmacy during the Jin dynasty; its fortunes under their rule, however, are beyond the scope of this study.

The formulary of the Pharmacy

We might expect that an imperial office established to control the prices of drugs and set standards to processing them should keep detailed lists of drugs, their prices, and logs of their processing. However, there are no surviving records dating to the Pharmacy's initial years that provide such information or even allude to the existence of such data. Furthermore, we also cannot find any surviving document, or even a mention of such record, listing medications on sale in the Pharmacy and their recommended methods of application for the benefit of the Pharmacy's customers. The only record we have states that during the Yuanfeng reign era (1078–1085) the Imperial Medical Service collected formulas from skilled physicians, formulas that were not included in previously published formularies. The Imperial Medical Service then, according to this record, tested these formulas in order to determine their efficacy.¹⁰² The formulas that proved to be efficacious were recorded and the drugs making them were put on sale in the Pharmacy. At the same time, the Imperial Medical Service compiled a formulary, titled the *Formulary of the Imperial Medical Service* (*taiyiju fang* 太醫局方). This five-chapter-long manuscript with one additional chapter containing a table of contents, listed formulas and the symptoms they treated. The same source that testifies to the existence of this manual also claims that it was subsequently distributed throughout the empire.¹⁰³ However, we have no other record of this formulary, indicating, maybe, that it was never printed.

During the years 1107–1108, a group of scholars headed by a prominent official Chen Shiwen 陳師文 scrutinized the *Formulary of the Imperial Medical Service*. They concluded that the sources of the formulas were not clear and that the book included errors and inconsistencies bearing on the preparation of drugs and on the efficacy of treatments.¹⁰⁴ Consequently, another group of physicians, headed by a distinguished physician Chen Cheng 陳承, revised and updated the “listings of drugs or formulas” of the Pharmacy and compiled a new formulary.¹⁰⁵

The need to revise the existing list was a result, probably, of the changes in the Pharmacy, namely the transition from selling simples to selling pre-packaged preparations (i.e., prescriptions) that took place during the first and second decades of the twelfth century. The resulting book, *Revised Formulary of the Imperial Pharmacy (Jiaozheng hejiju fang 校正和劑局方*, in short: the *Pharmacy’s Formulary*), listed the prescriptions on sale at the Pharmacy.¹⁰⁶ It consisted of five chapters, with one additional chapter serving as a table of contents. The extant version we have categorizes the 297 prescriptions into twenty-one types. It was printed in large quantities and distributed to all prefectures.¹⁰⁷

The *Pharmacy’s Formulary* specified the symptoms treated by each of the Pharmacy’s prescriptions. It rarely discussed additional aspects of medical diagnosis or treatment, especially ignoring theoretical aspects such as Yin–yang or the Five Phases. Moreover, its authors did not discuss how to differentiate the patient’s pattern of disease and the consequent need to determine the appropriate formula that treats this pattern. Nor did it discuss how to adjust the formula’s ingredients and their dosage according to the patient’s specific condition. Given these characteristics, it seems that the formulary was not intended for a medical audience but rather toward an audience of customers who had no medical background but could purchase prescriptions off the shelf by matching them to their symptoms.

In 1151, the book was revised and republished. Its title was also changed to suit the new title of the Pharmacy, namely the *Formulary of the Pharmacy Service for Benefiting the People in an Era of Great Peace (Taiping huimin hejiju fang 太平惠民和濟局方)*. During the years 1208–1252, the book was revised once again and expanded to include ten chapters, five more than in the previous edition.¹⁰⁸

It is plausible to assume that the publication of the formulary and its wide distribution facilitated the use of prescriptions. For example, prescriptions sold at the Pharmacy were used to treat poor patients at the Peace and Relief Hospital during the reign of Emperor Huizong.¹⁰⁹ The ease of purchasing prepared prescriptions from the Pharmacy by using the information in the formulary encouraged the hospital’s doctors to skip the lengthy process of adjusting a formula to the needs of a patient. The treatment may not have been the best possible one, but it was readily available, convenient to use, and cheap.

The Pharmacy and Medical Practice

We have one final issue to address, namely, what was the impact of the Imperial Pharmacy on the medical practice of Chinese physicians? Intuitively, it seems that the establishment of the Pharmacy enhanced the physicians' working environment. In other words, it seems that the Pharmacy's existence should have created a new, and from our modern-day perspective, better working environment for practicing physicians. In order to investigate this issue, I decided to canvass medical literature for references to the Pharmacy from the date of its establishment. The existence of digital databases makes this endeavor both easier and more precise. The one used in this study, *Zhonghua yidian* 中華醫典 (1999, 2001), includes over 700 medical titles. I searched the database for mentions of the Pharmacy's various titles as well as for mentions of its formulary's title. The search focused on texts from the Song, Jin, and Yuan dynasties. The results of this analysis are quite unexpected.

Searching through extensive selection from the writings of physicians, medical officials, or other officials who wrote medical literature or prefaces to such books, reveals that there were very few cases where authors referred to the Pharmacy. Moreover, those references that do mention the Pharmacy discuss only its formulary, never mentioning the Pharmacy's title or name. In contrast, other non-medical records provide ample reference to the Pharmacy, its functions, locations, its merit, and contribution to the fight against epidemics.¹¹⁰

More astonishing is the fact that Kou Zongshi, who served at the Imperial Pharmacy as a purchaser of drug materials, fails to mention the Pharmacy's name, only mentioning the *Pharmacy's Formulary* three times in his *materia medica*.¹¹¹ When he mentions the *Pharmacy's Formulary*, it is only while discussing some minor issues related to specific drugs especially in comparison to their traits as listed in the formulary. Why did Kou ignore the institution where he served as an official? Why not inform his readers about the great advantages the Pharmacy provides for physicians and patients such as the constant supply of a wide variety of drugs neither fake nor overpriced?

Approximately two centuries after its establishment, we find a hint on the physician's perception of the Pharmacy from a physician who directly criticized its formulary and its effect on medicine. Zhu Zhenheng 朱震亨 (1281–1358), one of the most famous doctors of his era, compiled in 1347 a book titled *Elaborations on the Pharmacy's Formulary* (*Jufang fahui* 局方發揮). In the first paragraph of his book, he presents the role of the Pharmacy and the effects of its formulary on both patients and physicians before he casts his criticism:

The Formulary of the Pharmacy is a book.

It is possible according to it to diagnose and make a formula, which in turn are made of single drugs [*yao*]. [Thus] there is no need to seek a

physician, and there is no need for his skill in preparing a formula. All that is required is to pay for a prepared pill or medicinal powder. [In this way], diseases and pains can be cured and alleviated.

From the Song dynasty to the present, imperial and local officials protected it [the Pharmacy's formulary] and used it as a method; Physicians transmitted it as a profession; Patients made it unique as if it was the foundation of life; the common people studied it as an established custom.

Only humble me has doubts [regarding the usefulness of this] formulary. How can this be?⁹¹²

In the above quotation we find the most detailed and specific criticism toward the Pharmacy's formulary. This record may also be read as an indirect criticism toward the Pharmacy itself. Since Zhu lived more than a century after the Song government established the Pharmacy, he enjoyed the benefit of hindsight. What he describes in his book is the impact of the formulary and how officials, physicians, and the common people perceived and used it. The description is quite clear. Looking back, Zhu claims that the formulary of the Pharmacy enabled uninitiated people to prescribe medication based on visible symptoms only. Zhu advocates against the formulary and claims that what separates the good doctor from the uninitiated one is the ability to adapt the formula to the exact condition of the patient. This, in turn, is carried out by correct diagnosis and the understanding of the underlying condition of the patient, which cannot be done without full understanding of the classical medical doctrines.

Contrary to what we might think, it seems that contemporary Song physicians did not have a high regard for the Pharmacy. They either ignored it or criticized its conceivable consequences. They probably could not have sounded direct criticism against the Pharmacy publicly, since an imperial institution was at stake, but given the above evidence it seems that Song-dynasty physicians did not approve of the Pharmacy. They did include in their writings warnings against the uneducated usage and application of drugs, which the Pharmacy's operations may have enabled. This suggests that they perceived the Pharmacy as a threat rather than an advantage. We can infer from their writings that the change in the medical environment was not beneficial for doctors. Charlatans and even educated patients could read the Pharmacy's formulary and accordingly prescribe medication to patients or to themselves, based on prepared prescriptions sold at the Pharmacy. What seems to have been the educated physicians' response was to stress the one aspect of medicine in which they had an advantage, namely classical medical doctrines and their influence on the diagnosis and treatment of a patient. This, along with the expanding imperially sponsored and regulated medical education system, brought these doctrines to the center of medical discussion.¹¹³ These changes, in turn, provided a background for the integration of classical medical doctrines with contemporary Song drug therapy.

Conclusion

Drug therapy was transformed during the Northern Song dynasty. Its literature included a much broader spectrum of drugs and formulas, knowledge of simples became standardized, and drugs and pre-prepared prescriptions became much more accessible and at a larger variety.

The first and most noticeable change was the increase in the scope of literature and knowledge. In both genres, materia medica collections and formularies, we find expansion in the size of the published texts. Materia medica collections more than doubled the number of drugs they included. The reason for this increase is multifold. First, the collection of ancient books provided the editors with ample data never available to earlier editors. Second, the shift of the center of population and trade to South China necessitated the adaptation and inclusion of native southern drugs in the materia medica collections. No longer did the collections focus predominantly on northern drugs. It was Tang Shenwei, who added nearly 500 new drugs, most of which had a southern origin, who changed the focus of materia medica collections. Third, the Song experienced a growth in trade and expansion of markets, which had dramatic impact on drug trade and the availability of previously hard-to-get drugs.

Another noticeable change in drug therapy literature was the increasingly critical view that officials and physicians frequently expressed toward ancient drug therapy. During the early decades of the Northern Song, drug therapy books, both materia medica collections and formularies, focused on reviving ancient knowledge. The editors supplemented the ancient wisdom with very little from contemporary practice. This changed during the second half of the Northern Song, as we find a gradual increase in the number of scholar-officials and physicians who criticize blind reverence of ancient drug knowledge. Instead, they preached that physicians should use only proven drugs or formulas. The reason for this change may be related to the establishment of the Imperial Pharmacy and the expanding trade and growing markets that made a wide variety of drugs readily available. This change may also be attributed to the broader education of physicians that led them to question ancient knowledge.

The Imperial Pharmacy, established in 1076, was originally part of Wang Anshi's reforms. Essentially, it was one aspect of an attempt to impose imperial control over various contemporary private commercial monopolies such as grain and salt, designed to lower the prices of drugs, rice, minerals, etc., and generate revenues for the imperial coffers. The Pharmacy was also designed as a government instrument to aid the population in times of epidemics, as the grain reserves were to help in times of famine. During the reign of Emperor Huizong, only a few decades after its establishment, the Pharmacy expanded its operation, opening additional branches in the capital as well as in various prefectures and districts. This was part of Emperor Huizong's patronage and promotion of medicine. In fact, the

Pharmacy was the first imperial medical institution designed to serve the general public and not solely the court. The Pharmacy, which originally sold only single prepared drugs, began during this era to sell pre-packaged preparations. These medicines in the form of pellets, ointments, powders, or potions along with the publication of the Pharmacy's formulary, made treatment much easier and gave direct access to consumers without the need to go to a doctor. The formulary supplied the treatment guidelines and the Pharmacy sold the specified medication to the patient.

Introduction to Part II

Creating a comprehensive systematic medicine

In the previous chapters we have seen how imperial interest in medicine, the shift of the center of population to the south, and a wave of epidemics prompted the Song government to publish a slew of medical texts. The medical literature included both revised versions of ancient canons and innovative medical treatises. These texts represented diverse medical knowledge that often was not compatible. Some of these texts, materia medica collections and formularies, discussed drug therapy by listing medications for the alleviation of symptoms without discussing the underlying pathological condition. Others were revisions of the canons of Classical Medicine that focused on whole-body understanding of the patient's disorder and used acu-moxa therapy as treatment rather than medications as used in drug therapy. Still other texts, associated with the Cold Damage Disorders genre, became important due to the impact of epidemics but were not compatible with either drug therapy literature or the canons of Classical Medicine.

In Chapter 2 we have seen that the Song government established a medical education and examination system. The medical schools added almost all the newly printed medical texts to their curriculum. Subsequently, a growing number of medical students and physicians were obliged to read these books and to pass examinations drawing on their contents. Thus, the government not only printed and promulgated medical literature, it also ensured that a growing number of physicians read them. These changes transformed the medical environment in China, leading to the creation of a new and comprehensive system of medicine.

The impact of reviving ancient medical approaches

We can begin thinking about the impact of the publication of ancient, largely out-of-circulation canons on Song-dynasty medical theory and practice by reflecting on a somewhat analogous pattern of change that occurred in Western culture. The reintroduction of Galenic medicine to Europe during the Renaissance triggered major changes. During the fifteenth and sixteenth centuries, Galen's medical works were newly translated from Arabic following their reintroduction to Europe from the Moslem world. Many intellectuals

were excited by this new knowledge, which resulted in a new confidence in what were seen as the truths of antiquity. Medicine, consequently, became increasingly dependent on the writings of Galen. The “discovery” and translation of new manuscripts, lost to Western Europeans for centuries, encouraged sixteenth-century scholars to believe they were restoring the venerable truths of Galenic medicine and Aristotelian natural philosophy.¹ I want to suggest that something similar occurred in China during the later half of the eleventh century and during the twelfth century.

The publications of the Bureau for Revising Medical Texts, which were subsequently incorporated into the curriculum of the imperial medical education and examination system, created a new medical environment during the second half of the Song dynasty. Readers of the Bureau’s publications – including physicians, scholar-officials, and students at medical schools – had to cope with a new medical knowledge, namely the doctrines of Classical Medicine and of Cold Damage Disorders, with which they were not familiar. The newly published books, representing different medical approaches – Prescription Medicine, Classical Medicine, and Cold Damage Disorders – used not only a different physiological nomenclature but also a different terminology for pathogenesis, diagnosis, and treatment.

Drug therapy literature, namely materia medica collections and formularies, which was the most common during the early Song dynasty, provided little theoretical discussion and focused mainly on symptoms and their pragmatic alleviation. Classical Medicine texts, not widely available during the early Song, focused on doctrinal discussions, physiology and circulation tracts, pathogenesis of disease, and treatment by means of acu-moxa therapy. In Classical Medicine texts, symptoms were provided mainly to exemplify theoretical discussion rather than providing the basic tokens by which diseases were to be differentiated and treatments applied. Cold Damage Disorder texts focused on formulas for the treatment of febrile disorders but also presented a unique attempt to combine some aspects of the other two approaches. The Bureau’s newly published medical texts challenged readers, both scholar-officials and physicians, due to the apparently incompatible theory, diagnosis, and treatment offered. Accordingly, the scholar-officials and physicians attempted to bridge and reconcile the differences. Of course, ongoing epidemics lent a sense of urgency to the attempt to understand Cold Damage Disorders. The Bureau’s dissemination of the new texts was only the beginning of the synthesis.

Assimilating novelty and change in Chinese culture

Confronted by the newly available medical knowledge presented by the Bureau’s publications, the educated physicians of the Song, either graduates of the medical education system or physicians with access to the newly published canons, could have proceeded in a number of ways. They could have continued applying their “proven” symptom-relieving clinical techniques of

Prescription Medicine, ignoring the newly revised and published ancient medical classics of both the Classical Medicine and Cold Damage Disorders. However, adopting this course of action would have ignored an imperial initiative of advancing medical knowledge. Moreover, this course of action did not fit with the medical education system that taught the classics. Alternatively, Song physicians could have chosen one of the two newly available doctrines, Classical Medicine or Cold Damage Disorders, and adapt their practice while discarding or ignoring the other. Yet another choice, much more remote, could have been to discard existing symptom-oriented doctrines in favor of constructing a completely new medical system. Song physicians followed a different path. They searched for common grounds among the three approaches and constructed theoretical and clinical bridges where there were none. This option enabled them, as often happens in Chinese culture, to reconcile differences and claim that all three approaches came from a common origin, the legendary emperors who allegedly compiled the medical classics. Such a synthesis would present itself as a restored classicism.

Disunity and contradiction were nothing new in Chinese medicine. The medical classics, like those of traditional medicine in other cultures, contained many inconsistencies in terminology, theory, and even regarding the viscera of the body. We find disagreements even within the earliest text of Chinese medicine, the *Yellow Emperor's Inner Canon*.² Therefore, the major goal of each subsequent work was rooting out inconsistencies, thereby restoring the perfectly consistent and harmonious medical doctrines they believed undergirded the first classics.³ For example, the authors of the *Canon of Problems* and the *Canon of the Pulse* coined new terms in order to resolve inconsistent claims regarding the palpation of pulse in various chapters of the *Inner Canon*.⁴ Throughout history, Chinese doctors tried to fit new experience and doctrines into the old framework. When this was not possible, they constructed new frameworks in the spirit of the old.

The approach taken by the Song physicians, attempting to settle differences and combine or harmonize incompatible doctrines, was consistent with Chinese culture. Chinese philosophy, for example, is filled with dualities, the elements of which are usually regarded as complementary and mutually necessary rather than as hostile and incompatible.⁵ In cases of irreconcilable discrepancies, instead of deciding that doctrine A is correct and doctrine B is wrong or vice versa, it was more common to let one fall out of discourse or even suppress it and keep the general discussion seemingly harmonious.

The philosophy that evolved during the last two centuries BCE, explaining the order of the cosmos, the authority of the imperial government, and the processes of the body, is a prominent example. Explaining this development, Nathan Sivin suggested that during this era the universe gradually became a cosmos, namely an orderly and harmonious system. This change commenced when the political order changed fundamentally with the establishment of a unified empire following centuries of disunity and internal wars among states in the ancient Zhou kingship (1050–256 BCE). In molding the new cosmology,

intellectuals drew on every current of thought and philosophy of that time. They constructed the necessary doctrinal bridges and links to produce a systematic and tight structure binding the structure of heaven and earth, and that of the human body, to that of the state.⁶ A few philosophers attacked their predecessors, but the outcome was regularly synthesis. An analogous scenario played out in the medical realm during the Song.

5 Integrating Cold Damage Disorders with Classical Medicine

In Chapter 3, we saw how during the eleventh century a rise in the frequency of epidemics forced emperor Renzong's court to react. The imperial government, working under the assumption that the key to dealing with epidemics was providing medical knowledge to cope with them, established the Bureau for Revising Medical Texts in 1057. The Bureau published a set of ten books, nine of which were revisions of ancient medical classics and one of which was an innovative materia medica collection. Of these ten books, three were versions of Zhang Zhongjing's original *Treatise*, one of which stands out most importantly – the Song edition of the *Treatise*.¹

What was the impact, if any, of the publication of the Song *Treatise* on medical practice or theory? The newly reprinted *Treatise* discussed a unique medical approach – “Cold Damage” – that had been virtually lost for almost eight centuries. We have this to ponder: How was it accepted when reintroduced during the latter decades of the Northern Song dynasty? Before we can address this issue, though, we have to ask what audience read the Bureau's books, including the Song *Treatise*, since at least the first printing's distribution was limited to imperial offices. How did the medical community accept this newly printed old knowledge? Was it rejected or ignored and if so by whom? Who, if any, discussed the Song *Treatise* and in what fashion? Lastly, what were the long-term effects on medicine brought about by the printing of the Song *Treatise*? These questions as well as the process of integrating Cold Damage doctrines, as presented in the *Treatise*, with contemporary practices and the doctrines of Classical Medicine are discussed in this chapter.

In this chapter I analyze how during the eight decades following the publication of the Song *Treatise* in 1065 the medical world – consisting of *both* scholar-officials and physicians – coped with the new medical system.² The number of compilations devoted to Cold Damage Disorders, published after the publication of the Song *Treatise*, increased significantly. It seems that the surge in the number Cold Damage compilations was mostly due to the need for some type of practical knowledge that would enable physicians to cope with the wave of epidemics. The authors of these new works believed they would help the government's initiative as presented in the preface of

the Song *Treatise*, “of all diseases, none is as pressing as Cold Damage Disorders.”³ Initially, during the first two decades following the publication of the Song *Treatise*, scholar-officials, not physicians, conducted most of the explorations into the field of Cold Damage Disorders. Only later, approximately two decades after the publication of the Song *Treatise*, did physicians take the lead in this field, resulting in an increase in the number of publications of books discussing Cold Damage Disorders. This leading role of the scholar-officials was probably the result of their privileges. Scholar-officials had easier access to the text which was stored in imperial libraries. In addition, they were motivated to find a solution to the frequent eruptions of epidemics.⁴

In addition to disseminating knowledge of Cold Damage Disorders, the physicians and the scholar-officials who wrote on the subject searched for ways to integrate the contents of the Song *Treatise* with the contents of government’s publications belonging to other genres such as drug therapy and Classical Medicine. At first, they focused on merging Cold Damage treatments (mostly formulas) with their existing clinical practice. Around the turn of the twelfth century they began combining Cold Damage doctrines with classical doctrines. The increasingly rich mélange was systematized around 1140 with the publication of Cheng Wuji’s 成無己 (~1050~1144) fully annotated version of the Song *Treatise*. In other words, Song writers of Cold Damage texts gradually blended Cold Damage doctrines and practices with the doctrines of Classical Medicine culminating in Cheng’s book.

Contemporary medical practice at the time of the publication of the Song *Treatise*

Before we discuss the Song *Treatise*’s impact on medicine, we have to discuss the contemporary state of medical practice during the late eleventh and early twelfth centuries. Medical books, prefaces, biographies, and imperial records provide the best source material for this purpose, since they represent issues which either physicians, in private compilations, or the government, in official publications, regarded as important.⁵ Being written documents, these texts represent the state of the field among the educated physicians at the time. My goal in reviewing medical practice is to set the stage for the rest of the chapter, where I discuss how the reintroduction of Cold Damage doctrines and practices into the medical scene compelled physicians to bridge differences among Cold Damage, contemporary practice, and Classical Medicine.

Medical practice during the first part of the Northern Song, much like during the Tang dynasty, was mostly the pragmatic symptom-centered practice. The physicians focused on identifying the patient’s symptoms, which determined the appropriate formula.⁶ Each set of symptoms had its unique formula made of a varying number of drugs. The symptom-centered physicians, who had no knowledge about Classical Medicine, did not concentrate

on understanding the physiology of the body and the pathogenesis of disorder – the hub of Classical Medicine. Their routine did not follow the therapeutic logic presented in the classics – namely: observing the patient’s symptoms, differentiating the manifestation type, and analytically determining the desired treatment. Simply prescribing a formula was often the treatment of choice.

In order better to understand some aspects of clinical practice during the Song, I provide below a number of examples of clinical encounters, dating to the early decades of the twelfth century. These examples, not randomly chosen and not claiming to represent a complete picture of Song medical practice, concern two physicians who compiled medical works concerning Cold Damage Disorders.

One example of clinical encounter during the Song dynasty can be found in Xu Shuwei’s 許叔微 (1079–1154) book, *Ninety Discussions on Cold Damage*, published in 1132. In this book, Xu records ninety of his own personal case histories, one of which reads:

Pueraria Root (*gegen* 葛根) Decoction Manifestation Type, Number 20:

A city person named Yang was ill with Cold Damage Disorder. He did not sweat, he had an aversion to wind, and his neck was stiff and tilted to one side. A doctor offered him a decoction made half of Cassia Twig and half of Ephedra Root. I said, “This is not the correct treatment.” What I mean by this is that stiff neck corresponds to the Pueraria Root manifestation type. After three doses [of my recommended decoction], [the patient] began to sweat lightly which expelled [the disorder]. The next day, the neck was no longer stiff, and his pulse was already harmonized.⁷

Another example from Xu’s book concludes with a different outcome:

A person by the name of Tian Zhongrong contracted Cold Damage Disorder. After several days, his body was feverish. His arms and legs were cold and damp. His abdomen was bloated and his eyes were wide open and staring straight. He spoke deliriously and did not recognize [familiar] people. I diagnosed him and told him I could not cure him. . . . Subsequently, he did not recover and died.⁸

Since Xu’s collection of case histories was oriented toward an audience of physicians, it includes the information he believed would be most interesting and important for them. He mentions representative symptoms followed by a formula that corresponds to a Cold Damage category of disorder or manifestation type. Medical authors often use the character *zheng* 證 (translated as ‘manifestation type’) to denote a category for the disorder. This is not the manifestation type, or a pattern of symptoms, used in Classical Medicine. In the above first example, Xu names a manifestation type according to

a formula and not according to the doctrines of the *Inner Canon* such as the Eight Rubrics (*ba gang* 八綱) or the visceral system of functions (*zangfu* 臟腑) as common in Classical Medicine. Xu, like other contemporary authors, does not reveal how he differentiates among manifestation types. This seems to indicate that he expected his audience to understand the manifestation type or syndrome-formula approach.

Another example of the Song medicine practice, appearing in a private jotting, delineates a historical record of a prominent physician famous for treating Cold Damage Disorders, reads:

When he [Zhu Gong 朱肱] was in Nanyang 南陽, the Prefect Sheng Cizhong 盛次仲 became ill and summoned Zhu. After examining the Prefect, Zhu said: “This manifestation type [of the patient] corresponds to the Lesser Radix Bupleurum Decoction.” Zhu requested [the Prefect] to take three doses of the decoctions. Later the Prefect felt fullness. Again Zhu examined him and asked him “where is the medication that you took?” Zhu examined the medication and realized it was Lesser Radix Bupleurum Powder. Zhu said: “When the ancients say to make into rough particles they mean to cut into pieces the size of soy beans, boil it to make a clear extract, and drink it. They called this decoction (*tang* 湯). In this form [of preparation], [the medication] enters the tracts and quickly attacks the disorder. The present [medication] is a powder. It stagnates above the diaphragm. Therefore [you] have feeling of fullness and the disease is unaffected.”⁹

The author of this record, in contrast with Xu’s examples, focuses on the treatment rather than on the differentiation of the condition. He provides a detailed account of the formula’s preparation technique and the possible differing effects in case of deviation from the desired method. He records only the name of the Cold Damage formula that corresponds to the manifestation type. Again, there is neither reference to classical doctrines, such as the circulation tracts or the inner physiology of the body, nor to the Cold Damage doctrine of Three Yin-Three Yang later referred to as the Six Warps. It seems that the author lets the formula and its preparation stand for the clinical process leading to diagnosis.

In their clinical practice, physicians encountered an enormous array of symptoms. Accordingly, the number of registered formulas grew steadily, as evident by the enormous size of the two formularies the Northern Song government published.¹⁰ This growth in the number of formulas was not due to new diseases but probably due to physicians introducing new medicines attempting to further their own clinical practices and careers. Another indication of this trend comes from Zhang Lei 張耒 (1046–1106), an official who also practiced medicine.¹¹ In 1100, Zhang wrote a preface to Pang Anshi’s 龐安石 (1042–1099) important work, *Discussions on Cold Damage and General Disorders* (*Shanghan zongbing lun* 傷寒總病論). He bemoans the endless

number of formulas each made to treat slightly dissimilar manifestations of disorders, and he praises the *Treatise* for partly linking classical doctrines to formulas. According to Zhang, Pang Anshi follows the *Treatise's* footsteps:

Why is it that the excellent physicians of the past did not have the forethought to write formulas? The origins of diseases are without limit and formulas cannot be [formulated] to remedy them all. As a result an unskillful doctor will be confused by what seems to be the case [of a specific patient] and use [an incorrect formula]. The harm can be great. Only [Zhang] Zhongjing's *Treatise* discussed prescriptions for [these] disorders. The fine details are always given in full, and furthermore, he presented methods for adjusting the proportions of ingredients in order to admonish people [about individual differences of disorders and the need to modify the formulas]. The way that truly benevolent person uses his mind; if he were not in touch with the divine he could not do such a thing.

Pang Anshi was also personally worried that there were manifestation types that do not have formulas. So, he wrote a sequel that provides discussions [which make up for what missing]. If the way he used his mind to create techniques was not analogous to that of the ancients, how could have he achieved this? The people of Huainan said that Pang could argue with [the doctrines presented in] the *Treatise [of the Cold Damage Disorders]*. Surely, that is believable.¹²

Zhang in his preface sums up the most profound problem of Song medicine practice. Each set or combination of symptoms, which are obviously limitless, has an attached formula. After centuries of practice the number of formulas grew beyond usefulness, as evident in the gigantic *Medical Encyclopedia* that recorded approximately 20,000 formulas. According to Zhang, the only solution is to return to the patterns of the ancients, and he claims that it had been proposed already by Zhang Ji, the author of the original *Treatise*. Below I argue that it was through the understanding of the *Treatise* that Song physicians built both practical and theoretical bridges between the symptom-centered practice and Classical Medicine.

Zhang Ji's Original *Treatise*

What made the *Treatise* so unique that it carries such weight in the transformations in medicine during the Northern Song dynasty? One of the most noticeable characteristics of the *Treatise*, which may have been the reason for its re-publication, was the fact that it was the only pre-Song medical work that discussed contagious diseases and their treatments.¹³ Additionally, the *Treatise* was the only ancient classical medical canon associated with diseases endemics to south China, or what was regarded as south, during the Han dynasty. Zhang Ji compiled the text when serving as an official in Changsha, which was considered a southern city at the time.¹⁴ When the mid-eleventh

century wave of epidemics hit the empire, it must have seemed reasonable for government officials to revise and publish the *Treatise*. The *Treatise* provided a substantial number of formulas, but unlike the contemporary practice, it used the formulas to classify symptoms. In essence, the formulas are the *Treatise*'s manifestation types. Based on this classification, physicians could modify the ingredients of the formula or their dosage to comply with the specific manifestation of the disorder in the patient rather than prescribe a completely different formula for every group of symptoms.

More important to our current discussion is another trait of the *Treatise*. The *Treatise* was the only pre-Song medical text that attempted to combine canonical doctrines and details of clinical therapy. On the one hand it was a clinical manual providing the reader with medicinal formulas to prescribe to the patient. But, on the other hand, the *Treatise* utilized a classical doctrine, that of Three Yin-Three Yang division, to explain the pathogenesis of Cold Damage Disorder and how it penetrates the body. The fact that the Bureau printed three different editions of the *Treatise* and made them available to a growing audience had important, though probably unintended, consequences for subsequent medical theory and practice.

As a rule, official editors in government-sponsored projects annotated the chosen texts in order to explain difficult characters, unclear passages, and internal contradictions. In many cases this annotation was extensive and relying on and citing other classics. Lin Yi and his colleagues at the Bureau did not follow suit in revising the *Treatise*.¹⁵ They annotated the text sparingly, letting the content speak for itself. This made the Song *Treatise* difficult to comprehend. Lin and the other editors presumably did not possess the required medical knowledge essential for annotating such a book. Another reason for the lack of annotation may have been the lack of secondary literature on the topic.

Thus, at the time of its publication, the Song *Treatise* was not only incompatible with both current practice and classical doctrines, but it also lacked the annotation essential for physicians and scholars fully to comprehend its contents. The task for Song physicians and scholars was first to understand and disseminate the *Treatise* and then to integrate it with existing medical doctrines and practices.

Scholar-Officials' Texts about Cold Damage Disorders

One of the most unexpected but illuminating phenomenon in Song medicine was the involvement of scholar-officials in medical discourse and practice. We looked at this topic in Chapter 2 (above), but we need to return to it from another angle, namely scholar-officials' involvement in medicine with relation to Cold Damage Disorders. During the years 1050–1080, possibly, but not definitely, in response to the wave of epidemics (1045–1060) and the publication of the Song *Treatise*, scholar-officials compiled and privately published a number of texts discussing Cold Damage Disorders. A representative of this

trend is Gao Ruone 高若訥 (997–1055), briefly discussed in Chapter 3 (above). Gao built his medical knowledge around three medical texts which were not widely circulated during his time – Zhang Ji’s *Treatise*, Sun Simiao’s *Essential Prescriptions Worth a Thousand*, and Wang Tao’s *Arcane Essentials from the Imperial Library*. In addition to studying these texts, and in accordance with the literati culture, he noted errors he found in these books and penciled down their corrections. Gao compiled a number of medical works that summed up his medical knowledge and practice, including one that discussed Cold Damage Disorders – the *Classified Essential on Cold Damage* 傷寒類要, which did not survive to the present. In the latter part of his life Gao lived in Wei prefecture (present-day Henan province), serving as a master to a number of disciples who later also specialized in Cold Damage doctrine.¹⁶

The Bureau’s publication of revised medical classics, especially the Song *Treatise*, enhanced the scholar-officials’ interest in Cold Damage Disorders. Private publications by scholar-officials stand out, since they comprise approximately one-third of the newly compiled literature concerning Cold Damage Disorders during the Northern Song.¹⁷ Unfortunately, none of the texts has survived to the present. All we have are titles and scattered information about the authors. The books and their scholar-official authors are listed in Table 5.1.

The scholar-officials’ sociopolitical context illuminates their interest in medicine in general and in Cold Damage Disorders in particular. The typical Song official differed from those of previous dynasties. The long-established practice of granting official status on the basis of recommendation or inheritance was at least partly replaced by competitive examinations, providing opportunity to members of other segments of society to compete for a share of officialdom.¹⁸ Under this system, the central doctoral examination (*jìnshì* 進士) played the most prominent role. Candidates who passed this exam gained high-ranking positions. In other words, during the Song, financial means, enabling families to educate their sons, gradually became important in obtaining official positions. Consequently, rich southern families, who could afford to educate their sons, slowly emerged as new elite, one that lacked the military and aristocratic tradition of the ancient northern clans and focused more on innovation and change. Rising through the ranks of examinations, the new members of the elite were more aware of local problems and the need to solve them.¹⁹

The new examination system made officials much more dependent on their superiors. This was especially true regarding the emperor who served as the top examiner for the final stage of the civil exams. Bureaucrats’ survival in office depended on their qualifications, on their success in implementing policies, and on their ability to please their superiors. Consequently, although scholar-officials were generalists by upbringing, many of them of necessity became specialized experts. In order to compensate for focusing on one specialized field in their work, they expanded their interests and readings outside of work. These interests often included science, medicine, and technology,

Table 5.1 Scholar-officials who published books on Cold Damage Disorders (no texts have survived to the present)

<i>Name</i>	<i>Date</i>	<i>Title of book</i>
Chen Changchong 陳昌充	??	百中傷寒論 <i>Discussions on 100 Sufferings of Cold Damage</i>
Gao Ruone 高若訥	997–1055	傷寒類要 <i>Classified Essentials of Cold Damage</i>
	1049–1054 (years as official)	傷寒類要方 <i>Formulas for Classified Essentials of Cold Damage</i>
Ding Deyong 丁德用	1056–1063 (years as official)	傷寒滋濟集 <i>The Collection of Additional Relief for Cold Damage</i>
Sun Zhao ¹ 孫兆	1064–1067 (years as official)	1) 傷寒方 <i>Cold Damage Formulas</i> 2) 傷寒脈訣 <i>Cold Damage Pulses in Rhymes</i>
Song Di 宋迪	1068–1077 (years as official)	陰毒形證訣 <i>Manifestation of Yin Poisoning in Rhymes</i>
Liu Yuanbin 劉元賓 (Tong Zhenzi) 通真子	1067–1072 (years as official)	1) 通真子傷寒訣 <i>Tong Zhenzi's Rhymes on Cold Damage Disorders</i> 2) 傷寒括要 <i>Essentials of Cold Damage Disorders</i>
Hu Mian 胡勉	??	傷寒類例 <i>Classified Examples of Cold Damage</i>
Shen Gua 沈括	1031–1095	別次傷寒 <i>Differentiating and Ordering Cold Damage Disorders</i>

Source: SYQYJK. The latter two titles are also mentioned in the preface to *Leizheng huoren shu* 南陽活人書 by Zhu Gong.

¹ Sun Zhao served as an official editor in the Imperial Court and not in a medical position, therefore I regard him as a scholar-official rather than a doctor.

which were considered foreign to the interests of the conventional scholar in previous dynasties.²⁰ Officials who possessed medical knowledge often did not hesitate to confront physicians. One such example took place during the early eleventh century:

Xia Wenzhuang 夏文莊 was an official at Qizhou 蘄州 (present-day Hubei). Pang Zhuangmin 龐莊敏 was an official in charge of laws 司法.²¹ Once Pang came down with seasonal disease while he was in the middle of legal proceeding. He took a [medicinal] formula for several days. Suddenly an official reported that Zhuangmin died. Wenzhuang was greatly alarmed and said: “This person has the potential of becoming a Grand Councilor: how can he die?” The official said that the family already put out a mourning notice. Wenzhuang said, “this couldn’t be.” He went himself to observe the situation. He took a candle and looked down at

Pang's face. Then he said: "This does not conform to death!" Xia summoned the attending physician and said: "This is a Yang manifestation type of Cold Damage [Disorder]; you and the other physicians did not treat him correctly; you were mistaken." He urgently took the [vessel holding the] Support the Qi Decoction 承氣湯 and poured the decoction down Pang's throat. Within a moment, Pang Zhuangming was revived. Henceforth, Pang never got sick again.²²

This incident is a good example of scholar-officials' involvement and proficiency in medicine and in Cold Damage Disorders. After introducing the actors, the writer records the origin of the disease to be seasonal, or a disorder of the wider sense of Cold Damage. It is Wenchuang, the official, who makes the correct diagnosis and essentially, brings the presumably dead Zhuangmin back to life by prescribing the correct medicinal decoction. The writer stresses the scholar-official's superiority in the medical arts by quoting him for the correct manifestation type and stressing that it is a Cold Damage type disorder. To drive the point home he admonishes the physicians for the incorrect diagnosis. This story is about the humane nature of the scholar who rushes to save a friend who has the potential to become a distinguished statesman.

Nevertheless, there is still an unanswered puzzle. Why did scholar-officials choose to concentrate on Cold Damage Disorders, as is the case in the above example? One obvious reason is that they took interest in the topic when loved ones contracted febrile Disorders or their home prefecture was affected by epidemics. For example, Song Di 宋迪, who served as official during the years 1068–1077, became interested in medicine when his nephew came down with a Cold Damage Disorder. He called in a number of physicians to attend to his nephew. These physicians saw the patient's thirst and vexation and decided to sweat him and prescribe cooling medications. Following the treatment the child's condition deteriorated rapidly and he died after six days from a condition called "Yin Poisoning" (*Yin du* 陰毒). The physicians' failure to correctly diagnose and treat his nephew inspired Song to study Cold Damage Disorders. The manuscript he compiled, titled *Manifestation of Yin Poisoning in Rhymes* (*Yin du xing zheng jue* 陰毒形證訣), conveyed the correct diagnosis, after the fact, of his nephew's disease.²³

Another reason for scholar-officials to study Cold Damage Disorders was the opportunity to elaborate on an innovative and important medical field, which, in reality, did not require extensive medical background. As we have seen in Chapter 3 (above), Cold Damage was an independent medical approach not widely practiced and neglected for centuries. Cold Damage Disorders presented a unique opportunity for the officials to meditate upon and write in the field of medicine.

Cold Damage Disorders were high on the government's agenda. Two prefaces to books published by the Bureau, as mentioned in Chapter 3, claimed that, "of hundreds of disorders, none is as pressing as Cold Damage

Disorders.”²⁴ Furthermore, the preface to the *Canon of the Golden Casket and Jade Case* claims that Cold Damage knowledge was essential in caring for the people and helping them stay healthy.²⁵ Consequently, by studying and writing on Cold Damage Disorders scholar-officials contributed doubly. First, at the imperial level, they introduced and explained Cold Damage Disorders to both physicians and scholars, hence facilitating its dissemination and application. Second, these officials, many of whom came from south China, invested in medical knowledge that could potentially alleviate severe public health problems back home.

The officials belonging to the bureaucratic elite had various advantages when it came to studying Cold Damage Disorders. The Bureau had published the Song *Treatise* in limited quantities due to, among other things, the high cost of paper and printing.²⁶ Books such as these usually were placed in central and local government offices and sometimes at libraries. Therefore, the private physician, unlike the scholar-official, did not have easy access to a text until it was printed in inexpensive, often privately printed commercial editions. Furthermore, prior to the establishment of the Bureau, medical texts included in the official medical curriculum did not explain Cold Damage Disorders. Thus, possessing a medical background was of no advantage when it came to discussing Cold Damage Disorders. In fact, the officials who had access to the Bureau’s texts knew more about Cold Damage Disorders than most physicians did. Moreover, since Cold Damage was also incompatible with existing medical practices and doctrines, a medical education and background was thus doubly disadvantageous. The epidemic waves allowed members of the new elite to use their unique medical knowledge to further wedge their way into the imperial bureaucracy.

Physicians’ texts about Cold Damage Disorders

The first physician to compile a work discussing Cold Damage Disorders did so approximately fifteen to twenty years after the publication of the Song *Treatise*. A physician named Qian Yi 錢乙 (1032–1113), who is famous for his book on pediatrics, compiled the first manuscript on Cold Damage Disorders by a physician sometime during the Yuanfeng reign period (1077–1085). The title of this book, which did not survive to the present, was *Discussions Denoting the Subtleties of Cold Damage* 傷寒指微論.²⁷ Cold Damage knowledge disseminated to the ranks of physicians via the imperial medical education system and via private reprints that came along decades after the official printing. But these avenues of dissemination were understandably slow. During the early years following the publication of the Song *Treatise* only a limited number of physicians read it. However, during the 1080s Cold Damage doctrines and practice had spread widely enough that physicians began compiling books discussing Cold Damage Disorders. Unlike their scholar-official counterparts who focused on scholastic discussion of Cold Damage diseases and on disseminating that knowledge,

physicians concerned themselves with clinical practice. But working on clinical practice proved to be problematic, since the available literature was incompatible. In other words, physicians faced the following problems: how to fit these newly revived doctrines and practices with those of the prescription medicine practice and how to consolidate the doctrines of Classical Medicine with those of Cold Damage.

The government, as discussed earlier, published the Song *Treatise* along with other medical classics. Almost as soon as they were printed, these texts became part of the curriculum of the imperial medical education system. Physicians, especially those who passed through the education system, faced the task of deciding which doctrine was the best to apply in their medical practice. But this was not the only shaping force during the last decades of the Northern Song dynasty. The advancement of book printing during this era exposed a larger audience to many books including medical ones. This, in turn, must have increased the number of self-educated healers, which may have challenged the practice of the educated physicians. In order to demarcate themselves from the uneducated healers and to bridge the gaps between the two incompatible ancient doctrines, physicians introduced classical doctrine into clinical practice. Initiated physicians chose this path of integrating clinical practice with classical doctrines probably because of their desire to preserve their elite and scholarly status.

The marriage of Cold Damage medicine to contemporary Song medicine advanced gradually. We can distinguish a number of chronological stages. Forced by the need for innovative treatments in the face of epidemics and southern diseases, physicians created a hybrid clinical method adapting Cold Damage treatments to existing clinical methods. Later on, probably trying to add authority to their clinical hybrid, and preserve their accustomed status in the face of a new “threat,” physicians began to explain their altered practice using known medical doctrines. The theoretical discussion, however, was limited to clinical terminology and underlying concepts. This stage may have been facilitated by the new imperial initiative of advocating the use of prepared formulas sold by the Imperial Pharmacy rather than the *ad hoc* preparation of formulas for individual patients. Finally, physicians attempted to integrate the classical texts themselves with the Song *Treatise*. The method they chose, in accord with Chinese culture, was to annotate the Song *Treatise* using the ancient medical classics such as the *Inner Canon* and the *Canon of Problems*. The integration process reached a milestone around 1144 with Cheng Wuji’s 成無己 (~1050~1144) fully annotated version of the Song *Treatise*, *Annotations on the Treatise* (*Zhuji shanghan lun* 注解傷寒論). The evidence for this process is derived from the surviving Song texts about Cold Damage Disorder, listed in Table 5.2. Below I discuss the surviving books, their contribution to the dissemination of Cold Damage doctrines, and how they fit the general process of integrating Cold Damage Disorders with the other two medical approaches – Classical Medicine and Prescription Medicine.

Table 5.2 Surviving Song texts on Cold Damage Disorders

<i>Title</i>	<i>Year</i>	<i>Number of chapters</i>	<i>Compiler</i>	<i>Home province</i>
Song edition of the <i>Treatise</i> 傷寒論	1065	10	Lin Yi <i>et al.</i> 林乙	Unknown
<i>Discussions on the Profound Meaning of Cold Damage</i> 傷寒微旨論	1086	2	Han Zhihe 韓祗和	Border of Hebei 河北 and Henan 河南
<i>Discussions on Cold Damage and General Disorders</i> 傷寒總病論	1100	6	Pang Anshi 龐安時	Hubei 湖北
<i>The Book for Saving Lives as at Nanyang</i> 南陽活人書 Also known as: <i>Book of Classified Manifestation Types for Saving Lives</i> 類證活人書	1108	22	Zhu Gong 朱肱	Zhejiang 浙江
<i>One Hundred Mnemonic Verses on Cold Damage Manifestations</i> 傷寒百證歌	1132	5	Xu Shuwei 許叔微	Jiangsu 江蘇
<i>Subtleties of Cold Damage Revealed</i> 傷寒發微論	1132	2	Xu Shuwei 許叔微	Jiangsu 江蘇
<i>Ninety Discussions on Cold Damage</i> 傷寒九十論	1132	90 discussions	Xu Shuwei 許叔微	Jiangsu 江蘇
<i>Annotations on the Treatise</i> ¹ 注解傷寒論	1144	10	Cheng Wuji 成無己	Shandong 山東
<i>Discussions on Clarifying the Principles of Cold Damage</i> 傷寒明理論	1144	3	Cheng Wuji 成無己	Shandong 山東
<i>Discussions on Drugs and Formulas</i> 藥方論	1144	1	Cheng Wuji 成無己	Shandong 山東

Note

¹ This book, as well as the next two, was printed in 1172. Li Yuqing (1997) claims that Cheng completed the book in 1040 or earlier, not in 1144 as most scholars argue. He based his claim on an analysis of Cheng's birth dates.

Integrating the Song *Treatise* with the contemporary medical practice

The first problem Song physicians had to address, and apparently the most pressing one according to their own account, was the increasing frequency of epidemics. In 1086, Han Zhihe 韓祗和 wrote about the situation in which 70–80 percent of the population was severely affected by Cold Damage Disorders:

Already thirty years have passed from the time of the Zhihe 至和 reign period [1054–1055] to the present. Disregarding the effects of redundancy or deficiency of [of sick people] a given year, the number of people struck by Cold Damage before the summer solstice has been seven or eight out of ten. . . . Because they [contemporary physicians] did not dare to recklessly prescribe Zhongjing's drug treatment for Three Yin disorder, physicians only observed the floating pulse and fullness at the chest and diaphragm then the prescribed bringing-down drugs. Frequently [this type of treatment did] not sav[e] [the patient].²⁸

In order to cope with this disturbing reality, physicians began to study the Song *Treatise*. But since this book represented a third-century unrevised and unedited medical knowledge, Song physicians had to adapt their diagnostic techniques and prescriptions to current clinical settings. Zhang Ji organized the manifestation types in the original *Treatise*, primarily according to the Three Yin-Three Yang categories (*sanyin sanyang* 三陰三陽). For each of these manifestation types and their modifications a medicinal formula is attached.²⁹ The formulas' ingredients and their respective dosages could be adjusted according to the specific symptoms of a given patient. Not surprisingly, the third-century *Treatise* did not concur with eleventh- and twelfth-century clinical practice, and the Song edition, though revised, had not been updated or annotated. Consequently, physicians had to bridge the gap between the Song *Treatise* and contemporary medicine, especially contemporary clinical practice. The authors of the two earliest Song texts on Cold Damage Disorders provided the initial steps in this bridging process; one of them, Han Zhihe 韓祗和 focused mainly on diagnosis whereas another, Pang Anshi 龐安時, focused on nosology.

Emphasizing diagnosis: Han Zhihe

Han Zhihe (~1030–1100), lived in Ci 磁 prefecture (present-day Hebei province). Other than this we have little biographic information on Han, except that he was famous for treating Cold Damage Disorders in his locality.³⁰ In 1086, Han compiled a book titled *Discussions on the Profound Meaning of Cold Damage* (*Shanghan wei zhi lun* 傷寒微旨論). This book consisted of two chapters (*juan*), each containing fifteen sections (*bian*). The fact that neither Han nor his book is recorded in the official history of the Song probably indicates that he was not a well-known physician in his era. The title of the book and its publication year are recorded in a thirteenth-century Song catalogue of a private library, *Catalogue of Books with Explanatory Notices of the Zhi Studio* (*Zhizhai shulu jieti* 直齋書錄解題).³¹ The book did not survive, but during the Qing dynasty (1644–1912), scholars compiling the *Complete Collection of Four Literary Branches* (*Siku quanshu* 四庫全書) reconstructed Han's book from the *Yongle Great Encyclopedia* (*Yongle da dian* 永樂大典) of the Ming dynasty (1368–1644).³²

In the first line of the first paragraph of his book Han clearly states his motivation for compiling the text:

Those who practice medicine [at the present], do not closely examine the [pathological] origin of Cold Damage Disorders. They only state: “This is a Cold Damage Disorder.” They do not understand it arises from inner stasis of yang *qi*, and later becomes heat disorder.³³

The above quotation is not the only instance in which Han laments the contemporary physicians’ lack of familiarity with Cold Damage diagnosis and treatment. One of Han’s goals was to present the contents of the original *Treatise* in a more familiar language to reach a broader audience. He begins with the causes of Cold Damage Disorder, and shows how the disorder penetrates into the body over the course of several days. He links the Three Yin-Three Yang, later defined as the Six Warps 六經, with the classical twelve circulation tracts system, but he does not develop this idea beyond asserting this connection.³⁴ Unlike the earlier scholar-officials who compiled Cold Damage Disorders texts, Han was a practicing physician, thus less interested in scholastic discussion and more sensitive to the suffering of his patients. Consequently, his primary goal was to define basic Cold Damage terminology in contemporary clinical terms. He focused on applying existing clinical diagnostic tools to Cold Damage.

Han’s greatest contribution to the assimilation of Cold Damage doctrine with contemporary practice was his elaboration on pulse diagnostic techniques, most closely tied to Classical Medicine. The original *Treatise*, as well as the 1065 Song edition, did not include detailed information on pulse diagnosis.³⁵ Thus, from a practicing physician’s point of view, the *Treatise* lacked a basic connection to contemporary practice, namely how to diagnose Cold Damage Disorders by palpating the pulse. Han describes the current medical practice, saying:

Contemporary physicians, when treating Cold Damage Disorders, rely only on palpating [two types of pulses], floating 浮 pulse to indicate yang [manifestation] and sinking 沈 pulse to indicate yin [manifestation]. They completely fail to understand how [additional loci on the radial pulse, such as] its foot 尺 and the inch 寸 sections, reveal patterns of yin–yang and excess–deficiency [which are essential to determine the manifestation type]. [These patterns] provide guidelines for whether or not to [apply] sweating or purging [treatment strategies]. Thus, these doctors often transform [treatable] Cold Damage Disorders into more damaging illness 壞病.³⁶

Elsewhere, Han asserts that in order to treat Cold Damage Disorders, physicians must first differentiate the patient’s pulse by palpating three different loci on the wrist.³⁷ In order to set some sort of standards, Han defines twelve

major pulse types and their diagnostic implications regarding Cold Damage. Furthermore, when he discusses treatments and specific formulas, he always refers back to the pulse: “In treating Cold Damage Disorders [physicians must] give the pulse 脈 priority over manifestations 證 (i.e., signs and symptoms).”³⁸ He also states that,

when treating Cold Damage Disorders, generally speaking, if the physician observes the manifestations and not the pulse, then he cannot dispense (*tou* 投) drugs. But if the physician observes the pulse and not the manifestations, even though there are only a few drugs to chose from he cannot cause harm.³⁹

Thus, Han concerned himself mostly with pragmatic clinical knowledge and less with the theoretical foundations upon which it was founded.

In addition to stressing pulses as the major means of diagnosis, Han’s book also provides a limited number of formulas. It is possible that the original text included more information on formulas, but one cannot safely infer this from the surviving version.

Creating nosology of Cold Damage diseases: Pang Anshi

Pang Anshi 龐安時 (1042–1099), who is also known by his style name Pang Anchang 龐安常, was registered in Qizhou 蘄州 (present-day Hubei province). He came from a family that included many physicians in its lineage.⁴⁰ Accordingly, unlike Han Zhihe, his biography can be found in the *History of the Song*. This official biography states that Pang read all the classical medical texts during his informal education.⁴¹ He also possessed an extensive clinical knowledge of Cold Damage Disorders. Due to his reputation, patients flocked to his residence for treatment. Pang, in turn, cared very much for each and every one of his patients. It is recorded that when patients arrived from far away he even accommodated them at his home. The historical records also state that he never hesitated to go the distance to visit a sick person.⁴² This extensive clinical practice, allowed Pang to draw important nosological conclusions from a large and varied cohort of patients. He compiled a total of four books, but only one, *Discussions on Cold Damage and General Disorders* (*Shanghan zongbing lun* 傷寒總病論), has survived. Pang compiled the book during his last years. The book, which consists of six chapters, was not published until 1100, a year after his death. As the title implies, his book was not limited to Cold Damage Disorders. It was a general clinical text with a strong emphasis on Cold Damage. The title implies a conscious attempt to link Cold Damage to the general current of medicine.

In the first chapter of his book, which serves as a doctrinal introduction to the following chapters, Pang lays out the theoretical basis for the rest of the book, which is concerned mostly with diagnosis and treatment. In Chapter 3 (above), I claimed that the term “Cold Damage Disorder” has actually two

meanings: a general category of diseases and a specific pathology. This ambiguity probably confused physicians when they first encountered the *Treatise* both prior and during the Song dynasty. Pang resolved this issue by creating a typology of the various diseases classified under the general title of Cold Damage Disorders. He based his typology on their pathogenesis – from the initial exposure to a cold pathogen following with the illness’s transformations according to the change in seasons. He then listed each disease’s symptoms and noted how they differ from other types of Cold Damage Disorders in the broad sense. After splitting the broad-spectrum definition of Cold Damage Disorder into subcategories defining specific pathologies (see below), he stated that if physicians could ascertain the source of the disease and where it had penetrated the body, then they could apply the correct treatment.⁴³

According to Pang, “yin toxicity 陰毒” was the pathogen that caused Cold Damage Disorders. Winter cold was thought to be toxic to those who had a weak constitution or were unprotected from the elements of weather. In a full-blown Cold Damage Disorder, the head hurts and body aches, the skin is hot, and the person shuns cold.⁴⁴ But Pang realized that many disorders showed these symptoms. He argued that environment and the constitution of the patient cause Cold Damage Disorders to develop along different pathways. This was the core of the terminological ambiguity in the *Treatise* that Pang rectified:

When the disease is immediately manifested [during the winter], the head is painful and the body aches. The interstices of the skin and flesh are hot and the patient is abnormally sensitive to cold 惡寒. I term this condition Cold Damage [Disorder] 傷寒.

If the disease is not immediately manifested [during the winter], then the cold toxicity accumulates in the interstices of the skin and flesh. As spring and summer arrive and yang *qi* 陽氣 is born, the cold toxicity and the yang *qi* of the body struggle with each other in the region where constructive and defensive *qi* 榮衛 circulate. The symptoms are identical to the disease when immediately manifested in the wintertime [but the underlying pathology is different].

Thus, when the disease transforms due to the warm *qi* of the spring, I term it Warm Disorder 溫病. When it changes due to the summer heat, we term it Heat Disorder 熱病. When it changes due to deficient wind at the eight divisions of the year, we term it Wind Attack Disorder 中風. When it changes due to mid-summer heat dampness, we term it Damp Disorder 濕病. When it changes due to *qi* cycles 氣運 and the mutual struggle of wind and heat, we term it Warm Wind Disorder 風溫. The basis of all these orders lies in attack 中 by cold [toxicity] in winter. The changing seasons transform the manifestations of the disease. Therefore, the great [ancient] doctors called all the above disorders Cold Damage Disorders [in the wide sense].⁴⁵

Therefore, according to Pang, patients struck by different Cold Damage Disorders may display similar symptoms, but their pathologies are different, since climatic factors occurring during the four seasons varyingly affect different systems in the human body. Consequently, Pang warns, administering a treatment for Cold Damage without accounting for the influence of other potential or environmental factors is likely to have little therapeutic effect and may even worsen the patient's condition. Pang also warns, "If Warm Disorder is mistakenly diagnosed as Cold Damage, and accordingly the sweating and purging treatment is applied, death will be imminent."⁴⁶ Pang also discussed the effects of the environment on susceptibility to different diseases. "Within one prefecture," he writes,

There are those who live in mountainous regions where yin accumulates. These places may still be icy and snowy during high summer. The people of these regions their *qi* is cold, their pores are closed, thus pathological *qi* rarely harms them. These people live long lives. Those who are ill mostly suffer from Wind Attack Disorder or Cold Disorder. There are those who live in the flat lands where yang accumulates. In these places during the depth of winter grasses still grow. The *qi* of people in these regions is warm and their pores are open. They easily come down with illnesses. Thus, their lives are short. Those who are ill, mostly suffer from Dampness Attack or Heat Disorder.⁴⁷

The same holds if additional external factors, such as dampness or wind, affect the body. The disorder and its pathogenesis will be different even though the observed symptoms may seem to be similar.

Pang thus clarified the long-standing confusion over the term "Cold Damage Disorder." The *Treatise*, following the *Inner Canon*, refers to Cold Damage Disorders without specifying or clarifying their narrow or wide sense. As Pang wrote, "as for the warm febrile disorders occurring from the spring up to the summer solstice, the *Basic Questions* and the *Treatise* called them [all] Cold Damage."⁴⁸ Pang stresses that even clinically "the prognoses of heat disorders, warm damp disorders, and warm wind disorders are not the same. Symptoms for each differ, and treatment uses varying approaches."⁴⁹

Following the doctrinal discussion in the first half of his introduction, Pang discusses general Cold Damage manifestation types. From the second chapter and on, Pang shifts his focus to the clinical realm. In these five chapters Pang discusses various disease conditions, treatment techniques and strategies, and specific prescriptions. The language and the structure suggest that he aims at an audience of physicians not laymen.

Integrating Cold Damage with classical doctrines

Han Zhihe and Pang Anshi attempted to solve the immediate problem of making the contents of the *Treatise* available to a wider audience of doctors

who faced patients struck with Cold Damage Disorders. Han focused on the diagnosis of Cold Damage Disorders, especially pulse diagnosis, while Pang resolved the ambiguity concerning the nosology of Cold Damage Disorders, their associated symptoms, and the preferred treatment for each type of Cold Damage Disorder. Their goal, so it would seem, was to clarify problematic issues when attempting actually to use Cold Damage approach in clinical settings.

As time passed since the publication of the Song *Treatise*, its readership expanded. Moreover, the Song *Treatise's* inclusion in the curriculum of the imperial medical education system substantially increased the number of physicians familiar with its contents. This led to a need for more thorough discussion regarding the obvious differences between Classical Medicine and Cold Damage Disorders. Additionally, as time progressed, physicians accumulated additional clinical experience while treating Cold Damage Disorders. This trend, I would like to argue, caused physicians to turn toward discussing the doctrinal underpinning of their clinical practice. Two physicians, Zhu Gong 朱肱 and Xu Shuwei 許叔微, represent this trend of advancing a unified doctrinal basis for Cold Damage Disorders and Classical Medicine. Zhu made the linkage between the physio-pathology of Cold Damage Disorders, the Three Yin-Three Yang doctrine, and that of Classical Medicine, namely the circulation tracts and the internal *zangfu* viscera. Xu integrated the Eight Rubrics 八綱 used to denote manifestation types in Classical Medicine into Cold Damage.

Unifying the *Treatise's* Three Yin-Three Yang doctrine and the classical tracts doctrine: Zhu Gong

Zhu Gong 朱肱, also known by his professional name Wu Qiuzi 無求子, was registered in Wucheng 烏程, Hu 湖 prefecture (present-day Wuxing, Zhejiang province).⁵⁰ After passing his civil service entry exam in 1088, he was appointed as Auxiliary Court Gentleman Consultant of the Imperial Archives (*Fengyi lang zhi mige* 奉議郎直秘閣). Later he was demoted and moved to Hangzhou. While living there he compiled a text on wine-making titled the *Canon of Wine* 酒經.⁵¹ During the time he was out of office Zhu also became proficient in medicine. In 1114, he was reinstated as official and, given his newly acquired medical knowledge, he was appointed as official doctor at the Medical School 醫學博士. Zhu worked on a book discussing Cold Damage Disorders for almost twenty years (1089–1108). In 1108, he finished his book titled *The Book for Saving Lives as at Nanyang* (*Nanyang huoren shu* 南陽活人書), later this book became known as the *Book of Classified Manifestation Types for Saving Lives* (*Leizheng huoren shu* 類證活人書).⁵²

Zhu's name has often been associated with major changes in Cold Damage doctrine. For example, one of the most prominent doctors of the Qing dynasty (1644–1911), Xu Dachun 徐大椿 (1693–1771), wrote:

[Medical] books compiled by Song dynasty authors expounded upon the *Treatise on Cold Damage Disorders*. They also enabled the readers to grasp [its meaning] and to easily comprehend [its contents]. The book that stands out from the crowd with regard to Zhang Ji's *Treatise* is [Zhu Gong's] *Book for Saving Lives*. This was since the *Treatise on Cold Damage Disorders* simply brought up [in an unsystematic manner] the manifestations that appear in each of the Six Warps, in order to present therapies. Some instances give a single manifestation type that all Six Warps are present. There are also [instances of] a single manifestation type [associated] with different therapies. Thus the reader cannot clearly grasp [the overall scheme].

[Zhu Gong's] book, however, deals with ambiguous [passages] pertaining to the circulation tracts, disease etiology, and changes [in the disorder's] course of transmission [within the body]. It clearly analyzes each item, and appends therapies at the end. Once one reads it one will clearly understand [Cold Damage Disorders]. How can this not be considered the guiding light for later students?⁵³

In his book, Zhu established for the first time during the Song dynasty a definite connection between the twelve circulation tracts and the pathology of Cold Damage Disorders. He did so by analyzing the progress of a Cold Damage Disorder based on the anatomical pathway of the circulation tracts and their corresponding viscera. He also expounded the link between Cold Damage etiology and classical pathogenesis concerning the twelve viscera. The significance of Zhu's book is the fact that he began the process of integrating Cold Damage and the classical doctrines.

During Zhu's lifetime the Song *Treatise* was already available in fairly inexpensive small-character print. Zhu describes the common contemporary practice as follows:

The number of people in this generation who know enough to read [the *Treatise*] is limited. Even if they wanted to read it, they would not comprehend its meaning. Furthermore, there are [physicians who are] fond of using cooling drugs. [When they come across warming drugs] such as aconite 附子 and sulfur 硫磺, they snicker and prefer not to use them. Even in the depths of winter they insist on their patients' drinking cooling medicines, and taking [formulas] such as the Three Yellow Pills 三黃圓. Other doctors are fond of using heating drugs. [When they come across cooling] drugs such as Rhubarb Root 大黃 and re-crystallized Sodium Sulfate 芒硝, they are frightened and do not dare to use them. Even at the height of summer they urge patients to take roasted medicines, and to take formulas such as Gold Fluid Elixir 金液丹. This is not a matter of not knowing right from wrong. It is prejudice and biased argument that became the focal point [of practice].⁵⁴

Zhu is using harsh words to describe the state of drug therapy during his era. Being an educated physician and a scholar who passed the imperial civil service examinations, he laments the fact that most physicians either did not read the *Treatise* or could not comprehend its contents. Consequently, they were biased toward their old popular customs and practices when prescribing formulas designed to treat Cold Damage Disorders. In his book, Zhu attempts to alleviate this situation.

Zhu began working on his book, originally titled *One Hundred Questions on Cold Damage Disorders* (*Shanghan baiwen* 傷寒百問), in 1089.⁵⁵ The book, consisting of three chapters, was arranged in the format of a dialogue between master and disciple, hence its title. The book garnered high praise from contemporary physicians. For example, Zhang Chan 張巖, who wrote a preface to Zhu's revised edition of the book, maintained that it saved numerous lives. But he also added: "it is a pity that although the text's manifestation types are many, the discussion of the circulation tracts doctrine is limited; although the discussion of treatment for males is extensive, discussion of females' treatment is limited."⁵⁶ A few years later, in 1111, Zhu revised and expanded his book to include twenty chapters.

In 1112, Zhu met Zhang Chan while traveling in Zhejiang province. Zhu showed him his revised and enlarged text searching for possible sponsorship. Zhang was sufficiently impressed that he wrote a preface to this edition and offered a new title, *The Book for Saving Lives as at Nanyang* (*Nanyang huoren shu* 南陽活人書).⁵⁷ He also commented on Zhu's new version of the book that "its entries are many, its formulas are numerous, its language is direct, and its categories are clearly classified. This makes studying the text and applying the information easy. Thus, those who use this book are now numerous."⁵⁸ The book was printed in 1118, adjoined by Zhu's own preface. Zhu's book reviews and explains the *Treatise*.

According to Zhu's preface, in his day, patients diagnosed themselves, decided what type of medical problem they had, and, based on this decision, they selected doctors. Zhu describes his predecessor's shortcomings and accordingly his own goals in the following way:

Gentlemen of recent generations such as Gao Ruone 高若訥, Lin Yi 林億, Sun Ji 孫奇, and Pang Anshi have been deeply troubled by this [shortage of writing on Cold Damage for laymen]. One need not, like the scholiasts, [merely] complain [about this] at one moment, and be shocked by it at the next. Thus I have written this simple, readable guide for laymen.

Even though I could not have fully understood the fine details of Yi Yin's 伊尹 [work], I hope to make it possible that in this immense Realm people will not be cut down before their time and elders will not mourn their children. [I tried to make the book] easy to understand and pleasant to read, [with the intent of] gradually influencing doctors' habits and the universal respect for life. How can that be called a small improvement?⁵⁹

By saying that his predecessors did not apply the conventional commentary form, Zhu hints that his contribution went beyond textual commentary. In his text he wants to explain and elaborate on the doctrines in the Song *Treatise*, and make them available to a wider audience.

Manifestation types in the *Treatise* are categorized according to representative formulas and incorporate a six-fold division named Three Yin-Three Yang. During the Song dynasty this division became known as Six Warps (*liujing* 六經). Zhu was the first to directly link the two terms saying that “in the Cold Damage tradition Three Yin-Three Yang [categorization is used]; this is identical to the Six Warps 傷寒傳三陰三陽。共六經。”⁶⁰ The Chinese character denoting this six-fold division is *jing* 經 originally denoting the warp threads in a textile. A common definition of this character in medical context is “circulation tracts” – the circulation tracts along which the *qi* and blood are transported around the human body.⁶¹ The term “tract” is appropriate because *jing* does not imply a vessel or conduit. However, in the *Treatise* this character takes on another meaning – to pass through a stage, as the disease penetrates the body. Zhu was apparently aware of this fact, as Zhang Chan writes in his preface to Zhu’s book, “although the *Treatise*’s contents are correct and profound, they are not meticulous about the circulation tracts system [*jingluo* 經絡].”⁶²

The problem Zhu and his fellow physicians faced was how to fit the *Treatise*’s manifestation types to the circulation tract system that underlay classical, canonical medicine. In other words, Zhu looked for a way to align the circulation tract system of the classical doctrines with the six-fold category of Cold Damage manifestation types. He describes the importance of the circulation tracts saying:

In treating Cold Damage Disorders, first one must know the tracts. Not knowing the tracts is like groping one’s way in the dark (觸途冥行), not knowing the [extent of penetration] of the pathogenic *qi* or the pathogen. Often the disorder is in the Greater Yang, but despite that, physicians’ treatment aims at [attacking] the Lesser Yin. If the manifestation type is Attenuated Yin, then [the physician] should harmonize the Lesser Yin. [This approach] will not expel the cold pathogen. Consequently, the True *Qi* will be harmed.⁶³

The initial discussion of the topic came a decade or two earlier when Han Zhihe proposed to parallel the Three Yin-Three Yang categorization to the circulation tracts. Han, however, did not pursue the topic any further beyond this initial proposition. Zhu’s solution to the problem was to equate the Three Yin-Three Yang with the six tracts of the legs while disregarding those on the arms. By linking these he applied the existing classical physiological and pathological knowledge about the circulation tracts and the internal *zangfu* viscera to Cold Damage and vice versa.

But there was still another problem. How could one connect the seemingly disparate symptoms associated with a given Cold Damage Disorder and the

pathology and clinical differentiation of manifestation types of Classical Medicine? Several variables such as specific symptoms, tongue appearance, and pulse data are classified according to the Three Yin-Three Yang manifestation types. However, as symptoms occur in different regions of the body, they do not seem to have any common cause. For Zhu, the circulation tract system supplied the connection. Once equating the Three Yin-Three Yang of the *Treatise* with the six tracts of the leg, the manifested symptoms of each stage were grouped according to the courses of the circulation tracts on the human body. Following is an example how Zhu categorized two disorders according to their respective warps:

The patient says he has hot sensations 發熱, is abnormally sensitive to cold 惡寒, has a headaches, and a stiff neck, back, and waist. [The physician] then knows the disorder is in the Mature Yang warp [the Urinary Bladder tract]. When the patient experiences hot sensations in his body, his eyes are painful, his nose is dry, and he cannot lie down, then [the physician] knows the disorder is in the Yang Brightness warp [the Stomach tract].⁶⁴

By unifying the two meanings of the character *jing*, namely “tract” and “warp,” Zhu linked the clinical terminology of Cold Damage with that of the canons of Classical Medicine forming a unified doctrinal terminology as a basis for clinical discussion.

Once Zhu unified the two meanings of *jing*, he introduced the tract doctrine as the basis for diagnosis and differentiation of Cold Damage manifestation types. Consequently, he provides a detailed description of the courses of the six tracts of the legs. He even provides six illustrations of a human figure depicting important acupuncture loci on each tract.⁶⁵ This description of the tracts’ courses closely resembles the one appearing in other Song acupuncture texts, such as the *Illustrated Canon Explaining Acu-moxa Therapy Using the Bronze Figure and its Acu-points* discussed in Chapter 1, above. Following the description of the tracts, Zhu provides a detailed analysis of each warp. He presents the possible symptoms associated with each warp and shows how each symptom relates to the corresponding circulation tract. He also shows how symptoms manifest dysfunction of the internal physiological organ that corresponds to the circulation tract.⁶⁶ By doing so Zhu, created a common ground that enabled physicians to apply the classifications of the classical doctrines to Cold Damage. For the first time, classical Chinese physiology served to explain the pathology of Cold Damage Disorders.

Zhu also promoted the *Inner Canon’s* Eight Rubrics as the main manifestation type to be used in differentiating Cold Damage Disorders. Of the eight he chose to focus on two pairs: outer–inner and yin–yang. He writes:

In treating Cold Damage Disorders [one] must determine [whether the manifestation type is] outer or inner. If [one] does not determine this,

then [he will] wrongly apply the sweating and purging (*xia*) treatment approaches. The ancients, therefore, said: “[when using] Cassia Twig to purge the throat, yang becomes excessive and [the patient will] die. [When] depressive *qi* enters the stomach, yin becomes in excess and [the patient will] perish.”⁶⁷

In addition to the two pairs, Zhu specifies that Cold Damage has inner, outer, half-in, half-out, and other specific manifestation types. For each type the treatment differs. He also stresses that even though manifestation types are general categories for patients’ conditions, the physician has to pay attention to the exact symptoms and alter the content of the formula accordingly. For example, he says that all patients who fall under outer manifestation types have hot sensations or fever. But,

if the body is hot and the patient is not thirsty then it is an outer manifestation type that has heat; thus prescribe Bupleurum formula and add to it Cassia twig. If a patient faints and his pulse is slippery then it is an inner manifestation type with heat, thus prescribe White Tiger decoction and add ginseng to it.⁶⁸

He provides similar analysis for the yin–yang pair.

In summary, Zhu Gong’s book marks the first attempt to integrate the classical doctrines with Cold Damage doctrines. Though concentrating on terminology and diagnosis-related assumptions, it is a significant transition from the earlier clinically oriented discussion.

Incorporating the Eight Rubrics and disseminating the *Treatise*: Xu Shuwei

Xu Shuwei 許叔微 (1079–1154) was a native of Zhen prefecture 真州 (present-day Jiangsu province, in what was then south China).⁶⁹ His style name was Zhihe 知付. According to his biography, when he was eleven years old, his father died from a seasonal epidemic. A few months later he also lost his mother. The inability of physicians to help his ailing father encouraged him to study medicine with focus on Cold Damage Disorders in addition to studying for the civil service exam, which he passed in 1132.⁷⁰ Xu was a prolific writer and compiled many books. Four of his texts have survived to the present, three of which discuss Cold Damage Disorders (see Table 5.2). Xu highly praised Zhu Gong’s work and used it as foundation for his own work.

Xu, like the physicians described above, regarded the *Treatise* as highly important for medical practice. He, however, praised it above all others, warning his readers that “discussing Cold Damage Disorders without reading Zhongjing’s book [the *Treatise*] is like discussing Confucianism without first understanding the six classics of Confucius.”⁷¹ This statement suggests that

physicians diagnosed patients according to fixed patterns of symptoms, treating them without understanding the underlying medical doctrines especially those of Cold Damage. During the last decades of the Northern Song we find increasing number of complaints from educated doctors suggesting that the practice of treating symptoms without understanding the underlying pathology became much more prominent. The advancement in printing and a government initiative to promote the sale of the Imperial Pharmacy's prepared prescriptions can explain this type of criticism.

Xu, as Zhu before him, claimed that one of the reasons the prevailing medical practice harmed patients instead of helping them was that physicians either did not have access to the *Treatise* or they did not understand it. In the preface to his most famous book *One Hundred Mnemonic Verses on Cold Damage Manifestations* (*Shanghan bai zheng ge* 傷寒百證歌), Xu writes: "Hence I took the contents of the *Treatise* and compiled from it a hundred mnemonic poems, each delineating a manifestation type. I did this to make it easier for physicians to study and memorize it [the *Treatise*]."72

Xu's book, which consists of five chapters, each containing twenty verses, presents the most essential information of the *Treatise* in a format much easier to comprehend and remember.⁷³ By creating an easily memorizable primer, Xu greatly contributed to the dissemination and popularization of the *Treatise's* doctrines. The renowned Qing dynasty doctor Xu Dachun 徐大椿 (1693–1771) said that, "of those who chose to revere [Zhang] Zhongjing and expound him, Xu Shuwei was the best."⁷⁴

The first two chapters of Xu's book delineate the basic concepts of diagnosis and differentiation of Cold Damage manifestation types. The latter three chapters list the manifestation types with the recommended formulas. In addition to rendering the Song *Treatise* in verse, he also added brief annotations. For example, whenever the Song *Treatise* did not list a formula, Xu provided one. The annotations mostly are attributed to Zhang Zhongjing ("Zhongjing said . . ."), but in some instances Xu refers to other texts including the canons of Classical Medicine. This was the first attempt, though perfunctory, to annotate the Song *Treatise* by using classical canons.

In addition to presenting the contents of the *Treatise* in a simpler format that was easier to remember, Xu contributed to the advance of Cold Damage Disorders in other ways. One of Xu's books, *Subtleties of Cold Damage Revealed* (*Shanghan fa wei lun* 傷寒發微論), is devoted to meditations on Cold Damage in general and the *Treatise* in particular. Xu discusses seventy-two specific manifestation types, each section detailing the pathogenesis and suggests a corresponding treatment. He emphasizes pulse diagnosis or the pulses that characterize the manifestation types and the recommended prescriptions, relying on his own clinical experience.

Xu followed Zhu Gong's work, claiming that the Eight Rubrics should be used as the basic category when a physician determines the patient's manifestation type. He writes:

The treatment method for Cold Damage [is as follows]: initially, [one] must understand [the differentiation of] external–internal and excess–deficiency [manifestation types]. Afterward, the [doctor has to] sit and determine which of Zhongjing’s 397 medicinal formulas [to apply according to the manifestation type].⁷⁵

In order to provide a more precise classification to determine manifestation types, Xu provides differentiation of Cold Damage Disorders according to combinations of the four pairs comprising the Eight Rubrics. For example, he combines the external–internal pair with the excess–deficiency pair to create external excess or external deficiency categories.⁷⁶ In his first work, *Mnemonic Verses*, Xu attempted to spread the *Treatise*’s ideas. In his second work, the *Subtleties of Cold Damage*, he analyzed these ideas attempting to explain them in contemporary terminology.

Xu’s third book on Cold Damage, *Ninety Discussions on Cold Damage* (*Shanghan jiushi lun* 傷寒九十論), is probably the most interesting and innovative of his array of compilations. In order to illustrate the various manifestations of Cold Damage Disorders in unequivocal manner, Xu assembled into one book ninety of his own medical case histories, cases of patients who contracted Cold Damage Disorders. All the cases follow a similar pattern. Each case includes symptoms, diagnosis, manifestation type determination, the applied therapy (i.e., formulas), and often the outcome of the treatment. This is the first compilation concentrating on case histories in the history of Chinese medicine. In subsequent medical literature the medical case histories genre became prominent.⁷⁷ It is unclear why the first medical text that utilizes this genre is a book associated with Cold Damage Disorders. It may have been Xu’s belief that only a presentation of actual case histories can accurately exemplify the application of doctrines in clinical practice dealing with Cold Damage Disorders as he promoted. Following is a sample case history from the text:

Case Number 9: Differentiating a Case of Bleeding from the Navel:

A female patient had contracted Cold Damage Disorder a few days earlier. Her throat was dry. She had irritating thirst. The pulse was stringy and fine. Doctors used the sweating method on her. Consequently, she began to bleed from the nose. Shortly thereafter, her navel began to bleed. Her doctors panicked and fled.

I said: “The cause for these symptoms is drastic sweating of the Immature Yin circulation tract.” In general, it is not appropriate to use a sweating method when the manifestation type corresponds to the Shaoyin circulation tract. Zhongjing said: “drastic sweating of the Shaoyin tract is bound to set the blood in motion.” When someone does not know how to follow this path, [blood] will come out from the mouth, nose, ears, and eyes. This is due to a controversion in the upper part of the

body and exhaustion [of *qi*] in the lower part [上厥下竭]. This is difficult to heal. Zhongjing said: “There exists no way to treat this, no formula to help.” I prescribed Ginger Aconite Decoction 薑附湯. After few doses the bleeding stopped. Following gentle sweating the patient became well again.⁷⁸

The organization of the case history, which is similar in all the cases, is meaningful. First, Xu provides important symptoms, next he names the pulse, and finally, he differentiates the manifestation type. In almost all his cases he points out the errors made by other doctors who treated previously the same patient. This structured presentation of a medical encounter, which includes a specific manifestation type in addition to the list of symptoms, follows the pattern of diagnosis in Classical Medicine, not Prescription Medicine which focuses predominantly on observed symptoms. Moreover, the reference “Zhongjing said” indicates that Xu used the *Treatise* as the foundation for his discussion. By weaving such references into his medical case histories, Xu probably intended both to promote the understanding of Cold Damage treatment and to encourage physicians to use the *Treatise*. Lastly, the emphasis on the mistakes made by other doctors is probably to stress his superior skills arising from the knowledge of the classics and especially the *Treatise*.

Xu claimed that although Zhang Ji’s original *Treatise* categorized manifestation types according to the Three Yin-Three Yang classification, the correct categories should be the Eight Rubrics. This marks another step in integrating Cold Damage doctrines with Classical Medicine. Earlier, Zhu Gong equated the Three Yin-Three Yang with the circulation tracts; now Xu raises Cold Damage to an even higher level of abstraction by defining its manifestation types according to the Eight Rubrics. Once again, he classified symptoms according to the four pairs or according to a more elaborate scheme of permutating two or more pairs, providing practitioners with a simple category that indicates the desirable treatment strategy. For example:

Instances of hot sensations and aversion from cold originate from yang; those with no hot sensations and aversion from cold arise from yin. For excessive yang heat condition that manifest both inner and outer heat, use White Tiger Decoction combined with bamboo leaves. For excessive yin and cold condition with dampness and sunken and taut pulse, the Fourfold Back Flow Decoction and Regulating the Middle Decoction are the most expeditious. For heat heteropathy that enters the stomach and forms toxicity, Greater and Lesser Qi-calming Decoctions are indicated to disperse and purge the heteropathy.⁷⁹

This example asserts that when the manifestation type is yang, hot, and excess, the White Tiger decoction is the best. The text lists, in this manner, additional manifestation types and their recommended treatment. The text also shows how to use the Eight Rubrics in order to understand the pulses when diagnosing.

Integrating the *Treatise* with the *Inner Canon* and the *Canon of Problems*

Zhu's and Xu's books, described above, focused on creating a theoretical basis for Cold Damage clinical procedures by using classical doctrine. The discussion was limited mainly to doctrines applied in clinical practice – namely manifestation types – not to the basic physiological doctrines elaborated in the ancient medical canons. Both the original *Treatise* and the Song *Treatise* lacked such physiological discussion.

Zhang Zhongjing's *Treatise* includes in its title the character *論* 論, meaning “discussion,” “theory,” or “treatise.” This suggests that the text should contain fundamental theoretical discussions on Cold Damage Disorders, but in fact it does not. In other words, the *Treatise* shows the connection between symptoms, manifestation types, and formulas, but does not adduce physiological processes to explain them. In his preface, Zhang claims, probably to add authority to his text, that while compiling the *Treatise* he consulted the *Inner Canon*, the *Canon of Problems*, and other classics. Nevertheless, when reading the *Treatise* one cannot find a single reference to these canons.⁸⁰ This type of connection was the missing step in order to achieve a complete integration between Cold Damage Disorders and Classical Medicine.

This lack of theoretical discussion can be seen in the following example from the original *Treatise*:

In Greater Yang Disorders, when a bringing-down technique [i.e., purging is applied but the patient does not recover, because the patient repeatedly breaks sweat, both the inner and the outer aspects [of the body] are depleted. This will bring about dizziness in the patient. As the patient sweats he will recover without further intervention. This is the case because excretion of sweat harmonizes the outer aspect. If the inner aspect is still not harmonized [i.e., there are manifestations of inner repletion], sweat the patient again.⁸¹

In the above quotation, Zhang presents only one symptom, dizziness, which later Cold Damage texts separated into a number of distinct symptoms. Furthermore, the text does not provide a doctrinal explanation regarding how the author reached his clinical conclusions, although he implies such a foundation by using a harmonization category. Already in the Tang dynasty, Sun Simiao commented on this problem, saying that physicians have been unable to fully comprehend Zhang's teachings due to the lack of detailed elucidation of the physiological and pathological processes of Cold Damage.⁸²

In summary, the *Treatise* lacked explicit references to the canons of Classical Medicine, and prior to the Song edition, did not have extensive annotation. The last stage of integration between Cold Damage Disorders and Classical Medicine occurred after the collapse of the Northern Song in 1127. It took place under the Jurchen, the foreign force that conquered north China

from the Song and drove the dynasty to the south. This feat was accomplished by Cheng Wuji 成無己.

A comprehensive annotation of the *Treatise*: Cheng Wuji

Cheng Wuji, who was registered in Liaoshe 聊攝 (present-day Yanggu 陽谷 in Shandong province), lived most of his life under the Northern Song but published his books during the Jurchen Jin dynasty (1115–1234).⁸³ Cheng came from a family of literati physicians (*ruyi* 儒醫). The dates of Cheng's birth and death are not clear, but recent research suggests that he was probably born between 1044 and 1052. According to the postscript of his book, Cheng lived to be over ninety years of age, which means he died between 1134 and 1144, when he finished his book.⁸⁴ Cheng's contemporaries highly esteemed him as a very proficient clinician. For example, Hebei province Fiscal Commissioner-in-Chief, Wang Ding 王鼎, who compiled the colophon to Cheng's text, wrote: "I personally witnessed him publicly treating patients. Out of one hundred patients none was lost."⁸⁵

Cheng's greatest achievement was a compilation of a new version of the Song *Treatise*.⁸⁶ This book, finished in 1144 but published only in 1172, was the first attempt to fully annotate the *Treatise* using other classical canons. This represents the final stage in integrating Cold Damage and classical correspondence doctrines. Cheng devoted forty years of his life to author the *Annotations on the Treatise* (*Zhu jie shanghan lun* 注解傷寒論), but never saw it come to print.⁸⁷ Cheng's annotation was comprehensive, quoting nineteen sources in 285 annotations. The references included classical canons, acupuncture texts, materia medica collections, and other partial versions of the *Treatise*. The texts he relied on the most were the *Yellow Emperor's Inner Canon – Basic Questions* (105 references), the *Yellow Emperor's Inner Canon – Divine Pivot* (25 references), the *Canon of Problems* (13 references), and the *Canon of the Pulse* (10 references).⁸⁸ The extensive reference to classical texts suggests that he regarded them as the doctrinal basis for explaining Cold Damage Disorders.

In his annotation of the *Treatise*, Cheng drew upon the Bureau's other publications that included sections of the original third-century *Treatise*: the Song *Treatise* (68 references), the *Essential Discussions of Prescriptions in the Gold Casket* (28 references), the *Canon of the Golden Casket and Jade Cases* (9 references), and the Tang-dynasty formulary, the *Essential Prescriptions Worth a Thousand* (10 references).⁸⁹ By doing so, Cheng attempted to resolve internal inconsistencies among the various surviving versions of the *Treatise*. The fact that he included 68 references to the *Treatise* may indicate that he may have had access to another surviving version of the original text.

Cheng's reliance on the *Yellow Emperor's Inner Canon* and the *Canon of Problems* to explain the Song *Treatise*'s terminology, diagnosis, and treatment served two purposes. On the one hand, annotating the *Treatise* by referring to the classical canons provided the *Treatise* with doctrinal authority. On the other hand, by using the classical canons to explain Cold Damage

Disorders Cheng provided a methodology for applying the abstract doctrines of Classical Medicine to everyday clinical practice. During the previous millennium, classical doctrine rarely influenced drug therapy, which was the most common form of treatment. Physicians regarded the canons of Classical Medicine as the theoretical foundation of their practice, but they did not apply them in everyday practice, much like their Western counterparts throughout history who regarded the Hippocratic Corpus as the most authoritative text but rarely applied it in everyday practice.

The structure of Cheng's unique annotation of the *Treatise* is as follows. First, he quotes a section from the *Treatise*. Then, he provides his own interpretation of the original text and cites the relevant references from other sources. Below is an example of the original text and Cheng's annotation of the section on the Greater Yang:

In disorders of the Greater Yang, [the patient] starts sweating, and then [the sweat] flows freely. The patient has aversion to wind and difficulties in urinating. The four limbs are weak and tremble, and the patient has difficulties in bending and stretching them. Aconite added to the Cinnamon Twig Decoction should control the condition.

In disorders of the Greater Yang, the source of the uncontrolled sweating and the aversion to wind is an insufficiency of yang *qi*. Since the patient started sweating, his yang *qi* is all the more deficient and the pores of the skin are not firmly closed. The *Yellow Emperor's Inner Canon – Basic Questions* says: “The urinary bladder [the Greater Yang tract], is the office of the prefectural capital, it stores the dispersed body fluids, and excretes transformed and used fluids.” Regarding the difficulty in urinating, sweating exhausts the dispersed body fluids. [Consequently,] the deficient and weak yang *qi* cannot perform the transformation of the fluids. Regarding the [symptoms of the] four limbs, their source is from the yang *qi*. The four limbs being weak and trembling with difficulty in stretching and bending, the exhausted yang depletes the yang of the dispersed body fluid. The *Yellow Emperor's Inner Canon – Divine Pivot* says: “[Due to the] lack of yang aspect of the dispersed body fluid, bones do not easily stretch and bend.” Use Cinnamon Twig added Aconite Decoction to warm the tracts and recover the yang.⁹⁰

Cheng's goal was to use the classical doctrines of the viscera and circulation tracts to explain the course of Cold Damage Disorders and consequently to apply these doctrines to treatment.

Cheng's annotation of the *Treatise* using the classical canons, especially the *Yellow Emperor's Inner Canon*, was not simply a scholastic exercise. By doing so, Cheng provided Song medicine, for the first time, a unified nomenclature that enabled physicians to comprehensively understand medical doctrines originating from different medical approaches. In other words, this was one of the first instances in which Song medicine had a unified theoretical

basis for physiology and pathology. The best account of Cheng's accomplishments expressed by Wang Wei 王緯, who wrote the preface to Cheng's book when it was printed in 1172:

In antiquity there was a saying: "The urgency of all diseases: none is as pressing as Cold Damage Disorder." Of the books on Cold Damage, none emanated from Zhongjing's. True, Zhongjing's book's meaning is deep and its principles are profound. It does not [however] clarify the [role of the] circulation tracts, it does not explain the transformation of *qi* 運氣, and does not extend the usage of drug properties within the transformation of *qi* doctrine. Therefore, no one [was able] to understand its principles.

Now, Mister Cheng Wuji of Liaoshe 聊攝 [present-day Yanggu 陽谷, in Shandong province] has annotated the *Treatise*. From the inner aspect, he clarified the [role of] the circulation tracts [in Cold Damage]. From the outer aspect, he unified the transformation of *qi* of the heavens [with Cold Damage]. From the middle aspect, he expounded the savor 味 properties of drugs [with relation to Cold Damage]. With great profundity, he created the usage of transformation of *qi* [in Cold Damage]. He comprehensively [corrected] mistakes. [He did all this] in order to explain its [i.e. the *Treatise's*] canonicity. [Judging] from this [annotation], Zhongjing's ideas were obviously a great work.⁹¹

In an attempt, perhaps, to compliment his theoretical work, Cheng compiled a second book, *Discussions on Clarifying the Principles of Cold Damage* (*Shanghan mingli lun* 傷寒明理論), that took a more clinical and practical approach. The book lists and explains fifty important symptoms and manifestation types of Cold Damage. For each entry Cheng provides the pathogenesis, clinical manifestation, and the determination process of manifestation types. For example, he wrote:

Cold Damage with recurrent hot sensations: how does one recognize it? "Recurrent hot sensations" means intense [sensations] that first appear in the peripheral flesh and [cause] burning scattered hot sensations [throughout the body]. It resembles tidal hot sensations or alternating cold and hot sensations, but is distinct from both of these. It is related to agitation (*fanzao*), but not identical to it. Agitation is experienced in the inner aspect of the body. Tidal hot sensations are hot sensations at fixed time intervals, from which they do not deviate. In the case of hot sensations originating from alternating cold and hot sensations, when the cold [sensation] stops the hot [sensation] succeeds it. As for recurrent hot sensations, they occur at irregular times.⁹²

In the above quotation Cheng categorizes the different types of fever based on their respective manifestation types; he does likewise for the other

forty-nine symptoms. This was a pioneering style of analysis. The text was meant to serve as a manual on how to apply the classical doctrines in decision-making during the clinical encounter. However, Cheng did not merely refer to and cite the classical canons; instead, he directly applied the classical doctrines to patient care. Cheng subtly differentiated the important symptoms in a previously unrecorded fashion.

Cheng compiled yet another short manuscript, *Discussions on Drugs and Formulas* (*Yao fang lun* 藥方論), which listed twenty-one of the most important Cold Damage formulas.⁹³ In this text, Cheng focuses on the practical pharmaceutical aspects of these formulas. For each formula he provides guidelines on how to prepare it and discusses the individual characteristics of each drug and their interactions within a specific formula.⁹⁴ Cheng also warns the reader against repeating common mistakes he witnessed in clinical settings. Lastly, he suggests additional applications for each formula, and explains the doctrinal basis for applying the formulas by referring again to the classical canons. Furthermore, he also cites from materia medica texts and formularies to provide the reader with a manual drawing on a number of approaches to medicine.

In summary, Cheng's work marks a milestone in the development of Chinese medicine. It embodied a new form of comprehensive medicine, which at the theoretical level integrated Cold Damage and classical doctrines and at the clinical level applied both doctrines to diagnosis and treatment. It took nearly eighty years for this process to reach completion in the form of a fully annotated version of the *Treatise*. By using the classics to annotate the *Treatise*, Cheng integrated the two medical approaches. Cheng did not limit himself to doctrinal discussion. He applied the same comprehensive analysis to the clinical application of Cold Damage doctrines.

Conclusion

This chapter showed how the publication of the resurrected *Treatise* influenced medical practice and theory. The publication of the Song *Treatise* in 1065 exposed readers to an ancient and mostly forgotten medical approach. The government promoted the *Treatise* and its Cold Damage approach as a public health measure against epidemics and contagious diseases. This approach was new to the Song audience.

Initially, scholar-officials took advantage of special access to compile texts discussing Cold Damage Disorders – two decades before the first physician engaged in this discussion. The bulk of publications by scholar-officials on this topic over a limited period of time suggests that the wave of epidemics and contagious diseases was high on the official agenda. Furthermore, it indicates that medicine, for the first time in Chinese history, became an art worthy of scholar-officials.

Starting from the 1080s, most of the texts discussing Cold Damage Disorders were published by physicians. In addition to disseminating Cold

Damage knowledge, physicians progressively integrated the *Treatise's* content with existing medical practices and doctrines. The earlier texts attempted to integrate the clinical notions of Cold Damage with the prevailing practices. Later publications shifted the focus and discussed the doctrines that underlie Cold Damage practice. Authors of the later publications attempted to apply the classical categorization of manifestation types to the diagnosis and treatment of Cold Damage Disorders. The focus on the doctrine's underlying practice coincides with a government initiative to promote the sale and application of ready-made formulas by the Imperial Pharmacy.

Cheng Wuji's annotation of the *Treatise*, completed in 1144, represents a definite stage in the integration of Cold Damage and classical doctrines. By using the ancient canons to annotate the *Treatise*, Cheng provided theoretical legitimacy to the doctrines of the *Treatise*. On the other hand, he showed that the doctrines of the ancient classics of correspondence were not only applicable but also essential to clinical practice.

Cheng's annotation of the *Treatise* was not the only medical work that integrated Cold Damage Disorders and Classical Medicine. During approximately the same period Cheng finished his annotation, another physician, Liu Wanshu 劉完素 (~1120–1200), compiled an annotation of another medical classic, the *Yellow Emperor's Inner Canon* using, among other sources, the *Treatise* as a reference.⁹⁵

6 Integrating drug therapy with the doctrinal aspect of Classical Medicine

In the previous chapter we traced how Cold Damage literature slowly assimilated the doctrines of Classical Medicine to provide the much-needed theoretical foundation for its practice. This integration is not surprising, since Cold Damage was not a central theme in medical discussion prior to 1065. Once the government printed the *Treatise* and added it to the curriculum of the medical education system, physicians and scholar-officials gradually accommodated this knowledge into their practice. The integration of medical genres was not limited to Cold Damage and Classical Medicine; it was much broader: we find a similar process of integration of classical doctrines into drug therapy. This was a gradual change, evolving predominantly during the twelfth century. It began when the Song government printed the classical canons and included them in the medical education and examination system. Once this literature became available, it became evident that contemporary clinical practices of drug therapy were not fully compatible with the medical physiology and pathology discussed in the canons. We can presume that this initiated a reevaluation of medical practice.

Warning against wanton prescription of medications

The first inkling regarding a change in drug therapy appears during the last decades of the Northern Song dynasty (1100–1127) when we find a number of scholar-officials and physicians voicing warnings about the usage of medications. It is probably not accidental that two admonitions against prescribing drugs appear in prefaces adjoined to materia medica collections. One comes from a scholar-official, Lin Xi 林希, who wrote a preface to a materia medica collection compiled by a Sichuan native physician Chen Cheng 陳承 in 1092:

At the present, doctors practice [only] what is old and they preserve [only practices] which are common. In their undisciplined reasoning they incorrectly use analogies as guidelines for prescribing decoctions. When they are fortunate and some of their prescriptions happen to affect the disease, they say that this [type of practice] is sufficient to cope with the endless domain of disorders. When we closely examine these practitioners' expositions, we see that in an indifferent and unintelligent manner they

consider the *Jiayou Materia Medica* and the *Illustrated Materia Medica* to be empty texts.¹

Lin Xi's comment was not anecdotal. In 1108, we find such a warning coming from yet another scholar-official, Ai Sheng 艾晟, who wrote a preface to a new materia medica collection compiled by a Sichuan physician, Tang Shenwei 唐慎微:

Diseases are not necessarily capable of killing people; [however, presently] there are many cases of drugs killing people. The physicians of the present generation do not thoroughly study the basic warming or cooling characteristics [of drugs] or their slow as opposed to rapid effects. They increase or decrease [a specific drug in a prescription] using undisciplined reasoning. They use this [undisciplined knowledge] to treat disorders. If they are not lucky, their patients are in grave danger. At other times, they succeed in their treatment. How this is different than grabbing a spear and stabbing a person sleeping in his bed?²

These two scholar-officials thought medical practitioners during the last decades of the Northern Song dynasty did not have a firm grasp of drug-related knowledge. But what made prescribing medications so dangerous during this period that Ai compared it to stabbing someone in his sleep? The author does not state the reason since he probably felt it was obvious; we can only hypothesize by taking together these two testimonies. Drug therapy did not have the doctrinal foundation of Classical Medicine, namely the doctrines of systematic correspondence. Without a theory to explain the practice, according to these authors, prescribing medicine was a guessing game at best.

It is possible that the two scholar-officials quoted above may have exaggerated in their descriptions in order to draw readers to the books they prefaced. However, it seems that they were not alone in their depiction of medical practice. Kou Zongshi 寇宗奭 was one of the most prominent physicians during the early years of the twelfth century. He also spells out harsh criticism about the uneducated drug usage in his book *Dilatations on Materia Medica*, compiled during the 1110s. In the second chapter of his book, Kou voices a bold warning regarding the usage of prepared prescriptions or set formulas, which were produced and sold by the Imperial Pharmacy, saying: "If this is so [that people differ in their ways of life and customs and consequently their disorders differ], then prescribing a medication according to [fixed] formulas and using them on a broad basis is surely negligent."³ Following this warning, Kou continues his discussion of the misuse of medications. He finishes the same chapter using a striking metaphor asserting that his contemporaries do not realize the dangers involved in the application of drugs:

Using drugs is like sentencing [a defendant in a trial]. In sentencing there is no room for error, since errors affect human life. Using drugs is similar.

One error can be the difference between life and death. However, in sentencing there is interrogation by an official. When the interrogation is completed there is deliberation, and then the crime is set down in writing. It would seem that humans are fated to one death; one cannot be brought to life again, so [physicians] must be as assiduous [as legal officials].

As soon as they arrive at a patient's household, present-day physicians prescribe drugs [*yao*] according to whatever [symptoms] they see. . . . Some of the mediocre and lowly medical practitioners impulsively and wildly prescribe infusions. . . . How easy it is to kill a patient in this manner!⁴

In this quotation, Kou is criticizing a certain class of physicians that prescribe medicine without an adequate, according to his standards, knowledge. We do not know if these comments arise from actual personal experience or of Kou's personal agenda of promoting the application of classical doctrines in diagnosis and selection of the appropriate drugs. This type of medical practice, according to Kou, is doomed to inflict much more harm than good, or in his words: "How easy it is to kill a patient in this manner!"

The changing medical environment

The problem of drug usage raised by Ai, Tang, and Kou may have resulted from the changes in the number and variety of drugs on the market or from the establishment of the Imperial Pharmacy as discussed in Chapter 4, above. However, given the imperially sponsored materia medica collections that attempted to standardize the field, these claims cannot provide a complete explanation. A prominent scholar-official, Shen Gua 沈括 (1031–1095), in his preface for his book *Beneficial Medicinal Formulas by the Hanlin Academicians Su and Shen* (*Su Shen neihan liangfang* 蘇沈內翰良方),⁵ provides us with a clue for a possible change:

At the present, those who look at diseases [i.e., physicians] only examine the six pulses of the radius – that is all. In antiquity, those who looked at diseases necessarily scrutinized the patient's sounds, his facial hues, his manner and movements, the tone of his skin, his temperament, his leisure activities, and inquired about the habits of his life and his work . . . [only then,] they palpated the patient's pulse at the three positions and at the twelve circulation tracts. When a disease originates from the five *zang* visceral systems of functions, the five hues will respond, the five sounds will change, the five savors will be inclined, and the twelve circulation tracts will move. . . . At the present, those who treat disease rely on one or two drugs. They write down the prescription, add some essential instructions, and hand it [to the patient] – that is all. In antiquity, those who treated diseases first understood and applied [information derived from] the changes of Yin–yang, Five Phases, the four seasons, and their impact on the calendar [*Yunqi* doctrine].⁶

In his preface, Shen delineates the five difficulties in treating disorders all revolving around the importance of choosing and preparing the correct medication for each patient according to his physique and his living environment. He continues for most of the preface to analyze how contemporary doctors strayed from the correct way of antiquity.⁷ Shen claims that the major flaw in contemporary clinical techniques concerns physicians' lack of familiarity with the classical doctrines of cosmology and physiology, or how the transformations of nature resonate in the body. In other words, Shen claims that physicians used rigid and limited patterns of symptoms to assign treatment rather than understanding the cosmology of nature and the physiology of the body to figure out the patient's pathology, prior to the administration of medicine. In short, Shen serves as a good example of a scholar who admonished contemporary practices and praised classical doctrines.

Shen was not alone in his claim that physicians should adapt their medical practice to the newly accessible classical doctrines of cosmology and physiology. A few decades later, Emperor Huizong describes a similar situation in a preface he wrote for the *Medical Encyclopedia*:

I feel sympathy for the stasis of the great way and its accumulated [faulty] common customs, for the prolonged illnesses of my people, and for the undisciplined practices of incompetent healers whose study is not extensive and their knowledge is unenlightened. The regularities of the Five Phases and the transformations of the six *qi*, none of these physicians searches for their hidden meaning. None of these doctors attempts to estimate their further implications. By ignoring small details like the climate and changes of heat and coldness they may cause great harm to the patient [literally: the day is cold or the day is hot, changes in heat and coldness, even the tiniest of errors can become a major mistake after a thousand miles].

If there is excess, they supplemented it, if there is insufficiency they decreased it. At will they used techniques, prescribing herbs and minerals together. Those [of their patients] who died prematurely are half. [This situation is] unbearable indeed!⁸

Huizong claimed that uninitiated healers did not understand how the regularities of the cosmos affect the body's functions and did not apply the doctrines of the classical patient-centered medicine in their diagnosis. Instead, they stressed formulas that alleviated symptoms.

In an environment where only a few copies of canonical works were in circulation, as was the case during the first millennium CE, complaints such as Huizong's would have sounded reasonable.⁹ However, during the Northern Song dynasty, prior to Huizong's reign, there were four major projects of publishing ancient medical texts in which some of the most revered ancient medical works were published.¹⁰ We should also keep in mind that Northern

Song society had a higher rate of literacy and that the ancient canons, by Huizong's era, were available in smaller, less expensive editions. It seems that physicians, who according to Huizong should have been proficient in these texts, either were illiterate or unable or unwilling to apply their contents in clinical practice.

When we examine the medical environment during the last few decades of the Northern Song, we must conclude that it had transformed radically within only a century. Physicians no longer worked in relative solitude, from their training as a disciple under a master to their clinical practice, enjoying only limited discourse with other physicians. Instead, during the Song dynasty, the cohort interested in medicine expanded dramatically to include emperors, scholar-officials, and literati having access to medical books, students at medical schools, and practicing physicians. This cohort represented a much more literate, diverse, and educated group of people involved in medicine. It adopted a more critical reading of classical medical knowledge and a more critical evaluation of contemporary practices.

The growing cohort involved in medicine did not necessarily mean that the quality of medical practice became better; it actually may have been quite the contrary. Uneducated physicians and healers were no new phenomenon, but it seems that the reason for the reported growth of folk healers was due the awareness and criticism by educated doctors. The Imperial Pharmacy and the publication of its formulary may have also enhanced the possibility of practicing medicine without official training. It is probably not a stretch to assume that people who could read the Pharmacy's formulary and had access to the Pharmacy's stores could "put up a shingle" and claim to be a physician.

One of the biggest changes in the medical environment was the result of the population shift to south China, which exposed many to "new" southern diseases. Physicians had to adapt their doctrines and practices to this new physical environment and climate that was radically different from the traditional heartland of China in the north. Moreover, physicians had to incorporate into their practice new types of southern drugs and formulas rarely in use until the Song. Additionally, the availability of texts belonging to the three medical approaches – Classical Medicine, Prescription Medicine, and Cold Damage Disorders – created conceptual problems for physicians, since these approaches presented different perception of the body, disease, and treatment. In other words, they were incompatible. These two changes – one demographic, the other socio-intellectual – compelled physicians to rethink their medical practice.

The problem apparently centered on the inability of physicians to implement classical theory in their daily medical practice. Until the end of the eleventh century, there was no book that linked the classical doctrines of physiology and pathology to the practice of drug therapy. Beginning in the early decades of the twelfth century, we find a number of medical authors that took upon themselves to rectify this problem. It took approximately a century until these bridges were built. Two figures who flourished

during the last three decades of the Northern Song dynasty exemplify the initiation of this change – a low-ranking physician and an emperor. Below I discuss how Kou Zongshi, the physician, and Huizong, the emperor, contributed to the beginning of the integration of classical doctrines into drug therapy. In the latter part of this chapter, I discuss the works of two physicians who furthered this integration – Xu Shuwei and Zhang Yuansu.

Introducing classical doctrines to drug therapy literature: Kou Zongshi

During the Northern Song dynasty, the government commissioned and printed a total of five materia medica collections. These collections, which adhered to the traditional orthodox format, served mostly to standardize the field rather than transform it. It was not until 1119, when Kou Zongshi finally succeeded in bringing to print his *Dilatations on Materia Medica* (*Bencao yanyi* 本草衍義), that a major change was introduced to this genre. Kou's book, discussed in Chapter 4 (above), was the first to present classical cosmological doctrines as part of drug therapy literature. It also discusses, though in a somewhat limited fashion, the implications and applications of these doctrines in the use of drugs. The bulk of the theoretical discussion appears in the three-chapter-long preface.

Kou draws a direct connection between the five savors 五味 of drugs and the climatic environment and its *qi*. By doing so he subordinated the drug's effect to comply with the Five Circulatory Phases and the Six Seasonal Influences doctrine of climatic correspondence. In other words, Kou connected the classical naturalistic/cosmological doctrines with the therapeutic effects of drugs within the materia medica genre. The following quotation represents the foundation for his synthesis:

Heaven and earth differentiated; that which created the myriad things was only the five *qi*. After the five *qi* were decided and ranked, then the five savors appeared. After the five savors appeared, then came the limitless changes and transformations. Therefore it is said: that which give birth to things is *qi*, and that which brings them to maturity is savor. Created in singularity, then it matures in duality; born in duality, then it matures in singularity.

The *qi* of coldness is firm, therefore its savor can be used to weaken. The *qi* of heat is soft or weak, therefore its savor can be used to create firmness. The *qi* of wind is dispersed, therefore its savor can be used to draw together. The *qi* of dryness is drawn together, therefore its savor can be used to disperse. The *chongqi* (thoroughfare *qi* 沖氣) is born from the earth [phase]. Therefore, there is nothing the *chongqi* cannot harmonize. Therefore, its savor can be used to appease or soothe.

If the *qi* is firm, then one is strong; therefore, bitter savor can nourish life. If the tracts are soft or weak, then one is in harmony; therefore salty

sapor can nourish the tracts. If the bones are drawn together, then they are strong; therefore bitter sapor can nourish the bones. If the sinews are dispersed or loose, then they are not cramped; therefore acrid sapor can nourish the sinews. If the flesh is relaxed or soothed, then it is not obstructed. Therefore, sweet sapor can nourish the flesh.

Make it firm? Later [one] can make it weak. Draw together – later [one] can disperse it. You desire to soothe? Then use the sweet sapor, if one does not desire to sooth, then don't. Do not apply it in excess. If it is in excess, then disorder will follow. Those who nourished life and healed disorders in antiquity must have first fully understand this [the doctrine delineated above]. It is rare to be able to treat disorders without fully understanding this [doctrine].¹¹

Kou also advocated applying the classical categorization of the Eight Rubrics and the Four Methods of Examination when prescribing drugs.¹² Kou's greatest contribution, according to many historians, lies in the fact that he was the first to use the term "Channel Tropism" (*guijing* 歸經), which became widespread in later periods, to denote the effects of drugs on specific internal viscera.¹³ In simple terms, Channel Tropism explains drug traits according to the circulation tract doctrine, which is the basis of Chinese classical medicine. He claimed that in order to prescribe the correct dosage of a drug the attending physician needs to ascertain the patient's age and physique and whether the disease is chronic or acute. Prior to Kou's text, physicians prescribed formulas and drugs based mainly on the fixed recommendations of ancient sources, transmitted from master to disciple. According to Kou, who followed the example of the *Yellow Emperor's Inner Canon* and the *Treatise on Cold Damage and Miscellaneous Disorders*, physicians had to be alert to both the patient and the specific disease conditions.

Kou wove together drug therapy's goal of alleviating symptoms with the cosmological knowledge of Classical Medicine. For the first time in the genre of materia medica, the *characteristics* of the drugs were presumed to be according to the terminology of Classical Medicine. For example, drugs are discussed in terms of Yin–yang and the Five Phases and said to affect the *qi* or the *xue* (blood) rather than a given symptom or constellation of symptoms. In other cases, drugs are claimed to affect specific viscera.

Kou's text is the first to treat drugs no longer as simply a means by which to alleviate symptoms but rather as a means by which to harmonize the physiology of the body and that *harmonization* is what alleviates the symptom or symptoms.¹⁴ We find an explicit example of such a synthesis, the description of the drug "human milk." Kou deploys a sophisticated physiological explanation showing in details how human milk actually achieves its effects:

Human milk is very effective in treating the eyes. How so? The human heart produces *xue* [blood]; the liver stores blood. When the liver–lung system receives the blood, then vision is made possible. Now, when water

enters the circulation tracts, their [i.e. the tract's] blood develops. It is also said that when it [presumably the blood] moves up [the body] then it becomes mild, but when it goes down [the body] it becomes menstrual water [i.e. blood]. Therefore, we know that milk is blood. If milk is used as eye drops, then, how can the milk and the blood not be mutually harmonious? Blood is *yin*; therefore its nature is cold. People whose *yang* viscera are cold should not eat a lot of milk, pastries, cheese or similar products.

However, speaking of cow's milk and sheep's milk, in reality [they] too are inseparable from the *yin/yang* [relations] of creation and change, and that is all. . . . For old people who suffer from oral abscesses and cannot eat, drinking hot human milk is good [for them].¹⁵

This quotation represents the beginning of a process of synthesizing drug therapy with classical physiology. If we compare Kou's description of this drug to those of the *Daguan Materia Medica* or the *Zhenghe Materia Medica*, which were published approximately during the same time that Kou compiled his text, we find that they do not include anything that resembles Kou's elaborate discussion. We need to keep in mind, however, that Kou does not provide similar explanations to other drugs. In other cases he is much briefer saying, for example, that a certain drug "cures wind and deficiency of the Large Intestine visceral system of function" or that another drug "boosts the *qi* of the lung."¹⁶ In yet another case he states that a given drug "cures cases of cold *qi* in the urinary bladder . . . also harmonizes the stomach . . . and cures the *qi* of the small intestine extremely well."¹⁷ These seemingly throwaway references to physiology are significant, since we find no such examples in earlier materia medica collections. For the first time, a medical author created some connection between drugs and their physiological effects. By bridging the gap between classical physiological doctrines and drug therapy – that is, by attributing curative effects of drugs to their effect on particular viscera or internal functions, Kou provided foundations for future authors who continued the integration of drug therapy and classical physiological doctrines. Kou's achievements, so it would seem, did not go without notice, as the information contained in Kou's *Dilatations on Materia Medica* was incorporated into the *Chongxiu zhenghe xinxiu jing shi zheng lei beiyong bencao*, which was a new edition (published in 1249) of the *Zhenghe Materia Medica*, thus reaching a much wider audience.

Emperor Huizong's textual project: an attempt to revolutionize medicine

Kou Zongshi stands out as the first author to introduce classical doctrines into a materia medica collection. But this is only half the story. Emperor Huizong, who was deeply involved with medicine, took it upon himself to reshape the theoretical aspect of medicine in general and that of the for-

mulary genre in particular. Convinced that physicians were not proficient in the cosmological doctrines of the ancient classics, Huizong looked for a new way to convey the ideas he considered essential for medical practice. The fact that the ancient classics were more widely available, and that at least some physicians had attended the school of the Imperial Medical Service, which included in its curriculum most of these texts, presumably did not affect the overall situation as Huizong perceived it. It is possible that Huizong reached a conclusion that the problem was in the texts themselves being ancient and written in archaic language.

Huizong undertook to provide physicians with two new complementary medical treatises that included both doctrinal and practical information under one title. The first was the largest and most comprehensive formulary of the Northern Song dynasty, the *Medical Encyclopedia: A Sagely Benefaction of the Zhenghe Reign Period* (*Zhenghe shengji zonglu* 政和聖濟總錄, in short: *Medical Encyclopedia*).¹⁸ The second, the *Canon of Sagely Benefaction* (*Sheng ji jing* 聖濟經), was a unique treatise that wove together classical cosmological doctrines along with miscellaneous practical drug therapy information. Huizong regarded these two books as complementary, since each approached medical knowledge from a different tier, as is evident from his own preface to the *Medical Encyclopedia*:

The words of the *Canon of Sagely Benefaction* are the Way [or, the Dao]. A physician who grasps them thoroughly understands the doctrines. The contents of the *Medical Encyclopedia* are the means. A physician who uses or applies them can end [all] diseases.¹⁹

The *Canon of Sagely Benefaction* stressed the importance of the classical cosmological and medical doctrines. Therefore Huizong refers to it as the Way. This should serve as the foundation of medicine. The *Medical Encyclopedia* is referred to as the means, since it concentrated on presenting medications and the symptoms and diseases they treat. Unlike many earlier formularies, the *Medical Encyclopedia* also stressed and discussed cosmological doctrines and how they impact medical practice.

In his preface to the *Medical Encyclopedia*, Huizong outlined his medical project and its goals as he differentiates the two books:

In the time left over after attending to the myriad affairs of the state, I compiled a book consisting of forty-two *zhang* 章 to clarify the arcana of the [*Yellow Emperor's*] *Inner Canon*. I titled it the *Canon of Sagely Benefaction*. Its intention is profound and subtle; its main ideas are far-reaching 邁遠. It pertains to principles and doctrines; its discussions approach the subtlety of the world.

I also ordered those in the empire with technical skills to present their [knowledge] to the throne, gathered it along with what is stored at the

imperial storehouses, and published them in the Appendix 補遺 and the chapter titled Treatment Methods, a *juan* for each. Altogether there are two hundred *juan* and over twenty thousand formulas. The book classifies the entries according to diseases, and each entry includes [doctrinal] discussion, with generalities added. It begins with the transformations of wind disorders and ends with medicines to be ingested for immortality. Its details encompass specific acu-points and circulation tracts, incantations, and amulets. Everything without exception is in it. I titled it *Medical Encyclopedia: A Sagely Benefaction of the Zhenghe Reign Period*. Its contents are all about practice; it is the means to help attain the divinity of the world.

The basis for awakening the [contemporary] world 馘世 via previous sages lies [in the] earlier [book, namely the *Sheng ji jing*]. The ramifications are in the latter [book, namely the *Sheng ji zong lu*]. If one does not look at the former [book], then the Way [Dao] of healing does not exist. If one does not look at the latter [book], then the means of treatment cannot be applied.²⁰

From these statements it is clear that Huizong saw the two books as a pair, each constituting one part of a synthetic and coordinated reformulation of medicine. Although it is unclear whether Huizong was personally involved in the compilation of the *Medical Encyclopedia*, he did endorse it by writing the preface.²¹ It seems that Huizong's aim was to promote a new order in medicine that was initially defined and propagated by the central government and subsequently meant to be self-propagating among the educated elite. As Nathan Sivin has observed:

What had earlier been an ideal qualification of hereditary physicians was, in the newly fluid social circumstances of the Northern Sung, becoming the key to the definition of an amateur ideal – exactly as was happening in art at the same time. By “amateur ideal” I mean that all skills and goals were subordinated to a way of life. Earlier, to put it as simply-mindedly as possible, the doctor was expected to speak the language of his upper-class patients, since although he was usually an inferior he strove to be better than a servant. But in late traditional China the social mythology of medicine made the ideal doctor the patient's equal. Only a moral (and, to be sure, social) paragon for whom medicine was a facet of self-cultivation could fully comprehend the unity of body, mind, ambiance, and moral life that constituted true health.

It is obvious that for Huizong the Dao was at the same time an ethical and phenomenal balance, uniting the microcosm with its macrocosmic surroundings and with the norms of society. No one less than a philosopher could doctor the body, the cosmos, and the values of the patient at the same time.²²

The doctrine of Five Circulatory Phases and Six Seasonal Influences

One of the major innovations in both of Huizong's two books is the discussion of a unique cosmological doctrine – the doctrine of the Five Circulatory Phases and the Six Seasonal Influences (*wuyun liuqi* 五運六氣, in short, the *Yunqi* doctrine).²³ Scholars studying the Song dynasty consider this doctrine as one of the more significant intellectual changes during the late eleventh and early twelfth century. This doctrine is a cosmological system designed to explain how all the events and objects in the cosmos are interrelated and influence one another. It is based on three numerological systems deeply imbedded in Chinese tradition: First, the astronomical-calendrical elements of the sexagesimal cycle (*gan zhi* 干支), which was the categorization of sixty-year cycles by binomial labels formed by combining one of the ten celestial stems (*tian gan* 天干) and one of the twelve terrestrial branches (*di zhi* 地支);²⁴ second, the three-fold division of Yin and Yang;²⁵ and third, the calculation of the transformation of the Five Phases and internal relationships between its components as well as Six Seasonal Influences (wind, fire, heat, dampness, dryness, and coldness).²⁶

The *Yunqi* doctrine is concerned with the changes of *qi* configurations, both macrocosmic and microcosmic, during various intervals of time (*yun* 運). It provides a pattern that relates the Yin–yang and Five Phases modalities to the changes of the seasons and the sixty-year-based Chinese calendar. According to this doctrine, as long as all the seasonal changes and characteristics appear at their proper time, corresponding changes in the body should occur. However, when climatic factors appear off-schedule, for example a heat wave in the middle of winter or a snowstorm in summer, then these untimely changes promote diseases.

The *Yunqi* doctrine preceded the Song dynasty, but became more common during the second half of the eleventh century. The origins of this doctrine are not clear. Some scholars believe that it originated as early as the Han (206 BCE–220 CE) dynasty and became popular during the Tang dynasty (618–907). The best support for this claim comes from Wang Bing's 王冰 revised and annotated edition of the *Yellow Emperor's Inner Canon – Basic Questions* (762). Wang's edition includes seven chapters (chapters 66–71 and 74) which discuss this doctrine. These chapters have engendered extensive discussion on whether they are authentic Han texts or whether Wang himself added them in the belief that it was his duty to fill the missing pieces with text that supposedly should be there.²⁷ Wang's edition of the *Basic Questions* is the edition that came down to the present. However, we need to keep in mind that Lin Yi and other editors of the Bureau for Revising Medical Texts revised it thoroughly and published it in 1067. Lin and his team, in their preface to the newly revised edition, voiced their suspicion regarding the authenticity of these chapters.²⁸

A good example of a scholar who adhered to the *yunqi* doctrine and preached to others to do so as well was Shen Gua, who wrote that:

Physicians have the technique of the Five Circulatory Phases and the Six Seasonal Influences. With regard to the grand scheme²⁹ it means to foresee the transformations of the universe. Cold and heat, wind and rain, floods and drought, the appearance of rice-borer larvae and locust 螟蝗 [i.e., pests that harm the crops] all have their [seasonal] patterns. With regard to the small scheme it means [to realize] how men's myriad disorders follow the transformation of *qi*, when it rises and declines. At the present, people do not know how to use this [doctrine] and stick to rigid patterns. Therefore their all their techniques cannot be considered accurate.³⁰

Shen claimed to have applied the *Yunqi* doctrine many times. The most dramatic incidence he mentions very proudly took place during the Xining reign period (1068–1077), when, by applying these doctrines, he had successfully “predicted” a heavy rainfall at the capital prefecture after a serious lengthy drought. This prediction surprised the court in its boldness and accuracy.³¹

Soon after Shen complained about the lack of knowledge about the *Yunqi* doctrine, the state of knowledge changed. In 1099, Liu Wenshu 劉溫舒, a Song physician and Vice Rector of Studies in the Imperial Medical Service, who practiced during the late eleventh century, submitted to the throne the first medical book that describes the application of the *Yunqi* doctrine to medicine – *Profound Discussions on Models of Yunqi Doctrine Received from the Suwen* (*Suwen rushi yunqi lun'ao* 素問入式運氣論奧).³² This book, comprising three chapters, embodies the first step in the application of this doctrine to medical discussion. Liu explains and elaborates on the *Yunqi* doctrine as it appears in the seven chapters that Wang Bing supplemented to the *Yellow Emperor's Inner Canon – Basic Questions*.³³ Liu's book includes illustrations of circles that explain visually the application of the doctrine in physiology, pathology, diagnosis, and therapy, predominantly drug therapy.

It was Emperor Huizong, with his deep interest in medicine, that brought the *Yunqi* doctrine to the forefront. By including it in his textual project, he upgraded the doctrine's status and advanced its application in medicine. He also ordered that the doctrine be included in the medical schools' curriculum and instructed that medical examinations include specific questions on the topic.³⁴

Revising medical theory: the *Canon of Sagely Benefaction*

In 1118 Emperor Huizong finished authoring a medical book titled *Canon of Sagely Benefaction*. Due to the complexity of the book, Wu Ti 吳禔, who served as a physician in the Directorate of Education, annotated it before it was brought to print.³⁵ The book, printed and promulgated by the government, was a text that bridges across genres. Some consider it as belonging to drug therapy genre whereas others regard it as belonging to the genre of Classical Medicine.³⁶ The book consists of ten chapters, of which the last two discuss doctrinal aspects related to drugs and formulas. It seems that Huizong's main

goal in compiling this book was to update the classical medical literature. The book discusses the classical doctrines of the *Yellow Emperor's Inner Canon* with relation to contemporary Neo-Confucian perceptions of nature.³⁷ Huizong, in the preface to his book, outlined its goals and contents:

Ever since my succession to the throne, I have been constantly attentive and busy, never daring to be careless day or night. In the time left over after handling the myriad affairs of the state, I clarified the [*Neijing's*] principles and studied its meanings. I devoted myself to the model of high antiquity.³⁸ Accordingly, I discussed the subtle aspects of heaven and man, and traced to the source the principles of man's nature and the will of heaven as embodied in him. I explained the pure and impure aspects of the constructive and defensive *qi*.³⁹ I studied the maturation and decline of the body according to the concept of aging by increments of seven and eight years.⁴⁰ I differentiated abnormal and normal courses [of disorder and therapy] and reflected on pathologies of abundance and depletion [of *qi*]. I assembled this knowledge into a book of ten chapters that included altogether forty-two sections. I entitled it the *Canon of Sagely Benefaction*.⁴¹

The *Canon of Sagely Benefaction* was one of the first attempts since the Han dynasty, in addition to Kou Zongshi's book discussed above, to compile a text devoted to medical theory. Among the doctrines discussed are Yin–yang and the Five Phases, the four seasons, microcosm and macrocosm, and the visceral systems of functions. The text analyzes the relationships between these doctrines and how they affect the body and promote health or induce disorder. In short, the text focuses on the systems of correspondence between the body and the cosmos in which it exists. Huizong summed up his perception of the world and the importance of the cosmological doctrines at the beginning of his preface to the book:

One yin and one yang [i.e., their constant alternation] are called the Dao; bias toward yin or bias toward yang is called disease. Those who fail to clearly understand the Dao have never been able to cure man's diseases. Yin and yang illuminate each other, cover each other, and order each other. The four seasons succeed each other, give rise to each other, and kill each other. The Five Phases in turn become sovereign, are set aside, and serve as ministers.

Human beings are being born and live in their midst, conform to yin and yang, are attentive to the four seasons, and regulate [themselves] according to the Five Phases. With the median comes felicity; with excess comes calamity; with license comes disease.⁴²

The book does not ignore clinical aspects of medicine. It discusses diet, techniques for longevity and prolonging one's life, and drug therapy.⁴³ In a unique

way, it analyzes the classical cosmological and physiological doctrines on the one hand, and shows how to apply them to clinical practice, such as drug therapy, on the other. This is the first book that attempts to imitate the classical canonical genre of the *Inner Canon* while discussing relations of these doctrines to individual drugs as well as formulas.

Two concrete examples are in place to show how Emperor Huizong synthesizes together terminology and doctrines arising from different medical approaches. In the first example, Huizong ties the *Yunqi* doctrine to body's physiology, namely the visceral system of functions. He also ties together the basic principle of the function of the body, the *qi*, drawing on Classical Medicine with the basic trait of drugs, the five sapor, drawing from drug therapy by saying that these are what brings life and finalizes the form. By tying the two approaches and then delineating the correct path to treatment he established a link between Classical Medicine and drug therapy:

The Five Circulatory Phases and the Six Seasonal Influences are the pattern by which the heavens order of the myriad things. The five *zang* and six *fu* visceral systems of functions are the pattern by which men instill law in the world.⁴⁴ Bend and stretch exhale and inhale, all are enumerations of growth and decay excess and deficiency. The natural endowments of things are *qi* and sapor, these bring about life and finalize the form. Disperse that which is in excess and supplement that which is deficient, how can one oppose the supreme rationality of the world.⁴⁵

The second example establishes a much clearer and direct link between the two medical approaches:

Wood is sour, fire is bitter, metal is pungent, water is salty, earth is sweet, this is what brings about the sapor. Combine the Five Phases and this is the order of the sapor. Then if you use Yin–yang you never help one and neglect the other. In accordance with the above, the bones are inclined to receive, sour [substances] can nourish the bones. The muscles are inclined to disperse, acrid [substances] can nourishes the muscles. The pulse is inclined to be soft, salty [substances] can nourish the pulse. The *qi* is inclined to be firm, bitter [substances] can nourish the *qi*. Flesh is inclined to relax, sweet [substances] can nourish the flesh. If one studies the proper way of the sapor, then he cannot be mistaken [in treatment].⁴⁶

Here, Huizong ties the Five Phases, which is one of the fundamental doctrines of Classical Medicine, to the five sapor, which is the fundamental doctrine of classifying drugs. Then he claims that these two should also be applied in conjunction with the Yin–yang doctrine. Lastly, he establishes a connection to the body and its constituents, using Classical Medicine terminology, and how specific drug sapor affects them.

Disseminating clinical knowledge: the *Medical Encyclopedia*

In 1117, a group of scholars completed the work on the largest formulary of the Northern Song dynasty, the *Medical Encyclopedia*. This formulary included information collected from practitioners as well as from contemporary and ancient medical texts.⁴⁷ The contents of the book are divided into sixty-six categories of general manifestation types. This does not differ from earlier formularies. Instead of just providing the reader with the specific formula designed to alleviate the symptom with limited elaboration on how and why, the *Medical Encyclopedia* adds to the discussion of the formula a thorough theoretical explanation serving as a background to better understand the treatment. Contrary to earlier formularies, the number of infusions in this book is limited with a sharp increase in other forms of prescriptions such as powders, ointments, pellets, and boluses. This change is probably linked to the establishment of the Imperial Pharmacy that sold these new forms of pre-prepared prescriptions rather than providing the ingredients for formulas that the patient had to boil at home to make the infusion.

One of the most important characteristics of the *Medical Encyclopedia* is the fact that throughout the text classical doctrines are interwoven with the discussion of formulas. The formulas are categorized according to classical visceral systems of functions rather than solely according to symptoms. The integration of the classical doctrines goes beyond the organization of the contents of the text. In the discussion of each formula the authors meticulously added information regarding its effects on the visceral systems of functions as well as about their correspondence to the Five Phases doctrine. For example, the occurrence of sentences such as “Treating deficient heart *qi*” or “Treating original deficiency in the spleen” are much more abundant than in the earlier Song formulary, the *Imperial Grace Formulary*.⁴⁸

Another example of the integration of classical doctrines with formulas can be seen in the section devoted to acu-moxa therapy (chapters 191 to 194). Chapter 191 begins with a short introduction which includes a discussion about anatomy. The authors claim that without knowing basic anatomy of the skeleton, one cannot accurately locate the acu-points when attempting to apply acupuncture:

All those who use acupuncture should first clearly understand the bones and the joints. Once their knowledge of this topic is definite, they can determine the location of the *jing* and *luo* circulation tracts. [When applying acu-moxa, they need to] determine the [location of a specific] acu-point by means of the standard inch of the [patient’s] body.⁴⁹

The text lists 365 bones and provides spatial measurements for each one, with additional details such as whether the bone is “with” or “without” marrow (*sui* 髓).

Following the introduction to the text, the authors describe the circulation tracts and their acu-points. The text lists the acu-points exclusively according to the fourteen circulation tracts. For each tract, the authors provide extensive introductory discussion, which delineates its course, the courses of its branches, and associated symptoms. Preceding the description of each tract, the authors adjoin a list of its acu-points, followed by their characteristics and the symptoms they treat. The authors also provide specific manifestation types associated with each tract.

Chapter 192 of the *Medical Encyclopedia* begins with a discussion of the eight extraordinary tracts. In the latter half of the chapter, the authors discuss the differentiation and treatment of various pathologies. Tang-dynasty acu-moxa compilations, in comparison, did not concentrate on the differentiation of disorders and their treatments; they only listed the acu-points and the symptoms they treat. In other words, the authors of the *Medical Encyclopedia*, unlike their Tang dynasty counterparts, devoted space to the medical doctrines underlying the therapeutic techniques and to the symptoms they treat.

Chapters 192–194 provide broad categories of pathologies, dividing them into various manifestation types according to symptoms. For each manifestation type, the text lists several acu-points recommended for use in treatment. The preferred technique in most cases is moxibustion rather than needling. The discussion also mentions several techniques of needle manipulation and contraindications to acu-moxa therapy. By including both acu-points descriptions and information about pathologies and manifestation types, the *Medical Encyclopedia* provided the reader a much more versatile manual.

As a final point, the *Medical Encyclopedia*, namely its two first chapters, is one of a handful of medical works that discussed the *Yunqi* doctrine during the Song dynasty.⁵⁰ Since Huizong was a major advocate of this doctrine, he perceived it as the foundation of pathology.⁵¹ Just like Kou Zongshi began his *Dilatations on Materia Medica* with an extensive discussion of the *Inner Canon's* classical cosmology, so do the authors of the *Medical Encyclopedia* begin their books with a doctrine originating from the *Inner Canon*.

Integrating classical physiology with formulas: Xu Shuwei

So far we have seen examples of the initial attempts to bring classical doctrines into discussion concerning drug therapy. These attempts did not presume to integrate these doctrines in the clinical application of drugs; rather the authors mixed them in their writing while stressing the importance of classical doctrine without providing specific means to use them in drug therapy. Approximately one generation following Emperor Huizong and Kou Zongshi, a physician we discussed in the previous chapter, Xu Shuwei, wrote an innovative formulary – *Original Formulary of Classified Manifestation Types for Popular Relief* (*Leizheng puji ben shi fang* 類證普濟本事方, in short: *Original Formulary*, completed probably around 1144). This book

represents another phase in the integration of classical doctrines into drug therapy. Here we find an attempt to interlace together the classical doctrines into the process of determining the pathology and prescribing the most suitable prescription to the patient.

In writing this formulary, Xu used two contradictory approaches regarding the origins of the formula he included. First, Xu selected predominantly formulas that he deemed as “proven,” based on his own clinical experience. This is in accord with Shen Gua’s approach some sixty years earlier when he compiled his *Beneficial Formulas*.⁵² Second, Xu adhered to the bookish orthodox approach of his predecessors, who claimed that the recently revised and printed ancient canons and formularies included the most reliable remedies and doctrines. The tension between these two approaches may have led Xu to realize that he should use the ancient knowledge, especially the classical canons, to explain and support his clinically proven formulas and to a lesser degree discuss formulas arising from ancient formularies. But this is just part of the story. In order to enhance the readers’ understanding of his innovative discussion of formulas, Xu adjoined case histories to the presentation of many formulas. In each case history, he presents a patient and explains how the pathological condition is treated by the specific formula. He also points out the errors of his peers.

Xu, who wrote the book during the later years of his life, drew information from an array of recently printed imperial and private formularies, as well as on his own clinical experience. In his own preface to the *Original Formulary* he writes, “At the present, I am old. I have already collected an overflowing amount of proven formulas and have obtained new meaning [of medicine]. I have recorded this for future generations.”⁵³ The book consists of ten chapters that discuss twenty-five major manifestation types, which in turn are divided into formulas that treat them. The book records 373 formulas compared to about 20,000 in the *Medical Encyclopedia*. For each formula Xu presents the main symptoms or the disorder it treats. Then he lists the drugs making up the formula and their quantities. He also provides instructions on how to prepare and prescribe the formula. Throughout the book there are eighty-one lengthy discussions on the merit and method of applying the formulas, many of which include case histories. The book was printed around 1170, almost thirty years after its completion. This printing was followed by two others during the Southern Song dynasty. It was later reprinted a number of times during the Yuan and Qing dynasties as well as in Japan.

Xu integrated classical doctrines into his discussion of formulas in every aspect, from the basic description of the formula to the elaborate case histories. The first place we encounter reference to classical doctrines is in the description of a formula. If we compare the description in Xu’s book to that of the two great formularies of the Northern Song dynasty, the *Imperial Grace Formulary* and the *Medical Encyclopedia*, we find some subtle but telling differences. These formularies list the symptoms each formula treats, and only

rarely mention the affected visceral systems of functions. The authors did not refer to the pathological process that brought about the disease. Xu, in contrast, frequently mentions in the descriptions of formulas the visceral system of functions and attaches the character *jing* 經 (circulation tract) to them, suggesting that he perceives them as circulation tracts rather than abstract notion of organs. Furthermore, the terminology Xu uses to describe the formulas includes terms borrowed from the cosmological and physiological terminology of Classical Medicine, as shown by the description of the first formula in the book:

Natural pearl pellet 真珠丸 cures the following syndromes arising from deficiency of the liver circulation tract: internal wind evil injury in which when lying down the *hun* soul disperses and not stored and condition in which one shakes with fear.⁵⁴

Here we see that Xu does not merely state that disorders treated by the formula are related to the liver, he suggests causation and refers to the liver as the “liver circulation tract.”⁵⁵

Xu’s formulary did not list simples and their characteristics. However, when discussing the addition or subtraction of a simple to a formula, he once again uses terminology drawing from classical physiological doctrine, especially the effects of the drug on a circulation tract and its adjoining viscera. For example, when discussing the drug “mother of pearl” 真珠母 he claims that “it is the predominant drug that enters the liver circulation tract,” or that “at the present when [kidney *qi*] flows contrary to its pattern and cannot be corrected, then use Sichuan Pepper 川椒 to pull the circulation tracts and then you will achieve harmony.”⁵⁶ Although this feature is only secondary in Xu’s book, it is the first time that we find statements of the effects of simples on classical physiology.

After introducing of each formula, Xu lists its ingredients with the necessary details on differentiating the drug and preparing the formula. Instead of following the blueprint of his predecessors (i.e., naming the formulas, the symptoms they treat, and additional technical material such as preparation method), Xu extends the doctrinal discussion by providing the reasoning behind using of certain formulas and the modifications needed to adapt them when applying them to different manifestation types. The doctrinal reasoning he uses is drawing on the classical physiological and pathological doctrines of Classical Medicine, often quoting ancient canons:

This method [Method of Chinese Aconite Gruel 川烏粥法] is greatly useful in healing arm, leg, and four limbs paralysis. In cases when the pain is severe and the limbs cannot be raised, this is the manifestation type and one needs to prepare the formula in advance to protect against it. The Annals of Mr. Zuo say: “When wind is in excess the endpoints are sick.” This means that the four limbs are the four endpoints. The spleen

visceral system of functions manages the four limbs. When the wind evil [*qi*] invades the liver visceral system of functions then its excess harms the spleen since the spleen phase (earth) is being restrained by the liver phase (wood). Therefore the disease is at the endpoints. The Grain *Qi* 谷氣 is influenced by drugs characterized by wind and dampness. This is the path to enter the spleen visceral system of functions. Therefore, the four limbs will achieve harmony. In comparison to yang prescriptions it is much more potent. I often formulate this formula and give it to people. Once prescribed it is good and effective.⁵⁷

In this example, Xu explains that the origin of the pathology is in wind that injures the liver visceral system of functions, that in turn harms the spleen which manages the four limbs. Xu relies on the Five Phases, more precisely, those associated with the two viscera, and the mutual impact of one on the other to ascertain that his reader understands the pathology. He also provides the therapeutic logic, namely that the drugs of the formula should influence the Grain *Qi* associated with the spleen. For the first time in Chinese medicine, an author explains effects of a formula by discussing the physiological roles of the visceral systems of functions as well as their corresponding *qi* and Five Phases relations.

One of the most interesting facets of Xu's formulary is the fact that he provides a deep understanding of the physiology of the body. He uses pathological conditions to discuss how the body's physiology went astray and results in disorder. For example, in the following quotation he explains how the evil *qi* or the pathogen, fear in this case, harmed a number of bodily systems:

During the Yuanfu reign era (1098–1100), there was a man who contracted a disease. For more than a year he did not recover. He invited a doctor named Wang Sihe to examine him. Wang palpated his pulse and then said: “the cause of the disorder is in experience of great fear, which caused evil pathogen to invade the Liver visceral system of functions. The evil *qi* then takes advantage of the Yangming circulation tract. Therefore the stomach circulation tract is like that . . . If you want now to harmonize the liver's *qi*, then employ the channel tropism [doctrine] 歸經. Then the spleen will not be subdued. Since the spleen is the middle land or the earth phase, it rules the affairs of the four limbs and the whole body. If the *qi* of the spleen is correct then the earth phase gives birth to the metal phase. If the metal phase is prosperous, then the lungs are at harmony. . . .”⁵⁸

In order to explain his treatment strategy, Xu uses here the same term that Kou Zongshi used in his materia medica, namely “channel tropism,” the term that denotes the linkage between a drug and its effects on specific viscera and its circulation tracts. Although he mentions the specific term only twice

in his formulary, Xu applies it throughout. He also relies on the doctrine of the Five Phases, which explains the physiological interactions among the visceral systems of functions.

In the previous chapter we saw that Xu introduced in his book *Ninety Discussions on Cold Damage Disorders*, an innovative medium: the case histories. He used the case histories to enhance the understanding of the doctrinal reasoning behind Cold Damage Disorders. He weaved into the cases quotations from the classics in order to provide authority for the discussed treatments. In the *Original Formulary*, Xu uses similar methodology presenting case histories to explain and exemplify the underlying physiological and pathological doctrines that should serve as a basis for the treatment. The case histories are analyzed in terms of classical physiology and pathology as the following case history shows:

There was a patient who could not eat. [Doctors] prescribed him medication to strengthen the spleen visceral system of functions but it had no effect. I gave this formula, prescribed it and with ease he was able to eat. This disorder cannot be completely explained as deficiency of the spleen. In fact, it is because the *qi* of the kidney visceral system of functions is weak, that the original true [*qi*] is feeble and degraded. It is from this condition that the patient's [spleen] could not disperse and transform food and drink. It is analogous to the middle of a cauldron, which is filled with rice and millet, but below there is no fire. Even if you wait a whole day the rice will not get warm, so how can it transform [become cooked]?⁵⁹

The analogy here is clear. According to the classical doctrines, the spleen visceral system of functions, which is partnered with the stomach, is responsible for transforming foodstuff into *qi* so it can be dispersed throughout the body. However, the spleen depends on the original *qi* which is located in the kidney to enable its own *qi* to transform the food. What is important for us in this example is the fact that in order to explain the effects of a certain formula, Xu chose to provide an elaborate explanation, based on classical doctrines.

The last unique feature of Xu's formulary lies within his doctrinal discussions. It seems that Xu did not limit himself to repeating the information recorded in the canons. Just like any other medical information, he treated the ancient doctrines critically. While studying the classical physiology, Xu encountered a question, one that bothered many physicians in generations to come: "which visceral system of function was most important?" He focuses on two of them, the Spleen and the Kidney. Between the two, he seems to have regarded the Kidney as the prominent one and the Spleen only second. This may seem anecdotal, but it testifies to a deeper understanding of the classical doctrines and sets the path for much fiercer debates in the following century.

In summary, Xu's book exemplifies the integration of classical doctrines into drug therapy manuals at a number of levels. It shows how physicians should apply these doctrines in understanding the patient's condition and accordingly in prescribing the suitable medication. It should be noted, though, that the integrations of classical doctrines, by and large, remains at the level of the formula with very limited discussion at the drug level. Xu's comprehensive integration indicates that he regarded the classical doctrines as crucial for understanding drug therapy.

Integrating classical physiology with drug therapy: Zhang Yuansu

Xu Shuwei was the first physician to present and explain formulas by means of classical physiology. His book was predominantly a clinical manual not a theoretical one. Accordingly, he did not dedicate a separate part to discuss classical physiology, especially the linkage between drug traits and their physiological effects. Only at the close of the twelfth century we find a physician with more theoretical orientation, who comprehensively discussed classical physiology while at the same time expounding its connection to simples and formulas. This feat was accomplished by Zhang Yuansu 張元素.

Zhang (~1120–1200) was a native of Yi prefecture 易州 (present-day Hebei province). His style name was Jiegu 潔古.⁶⁰ According to the preface to his book, he excelled in his studies of the classics from his youth and passed his civil service, *jinshi*, examination at the age of twenty-seven. However, since he committed a taboo offense by writing a forbidden character, he was never awarded an official position.⁶¹ Consequently, he concentrated on studying medicine by reading thoroughly the classical medical canons. At the same time he worked in the clinic prescribing medicinal drugs observing their effect or lack thereof. His best-known medical encounter was when he diagnosed and treated the Cold Damage Disorder of his contemporary and equally famous physician Liu Wansu 劉完素 (1120–1200).⁶² In his surviving works he provided the reader with a firm grasp of classical doctrines, which serve as the theoretical foundation for a better and more efficient application of drugs.

Physicians of later dynasties highly valued Zhang's work. For example, a Yuan dynasty (1271–1368) physician commented that, "Among the medical technique of present day physicians, Zhang's book stands as the king's way of medicine."⁶³ Others ranked Zhang among the most dominant physicians such as Wang Shuhe and Sun Simiao.⁶⁴ The most indicative description of his work is recorded by the imperial historians of the Yuan dynasty who compiled the *History of the Jin Dynasty* saying that, "When Yuansu treated disorders he did not apply ancient formulas recklessly. He had a proverb that said, 'The transformations [of the world] and its *qi* are not equal, old and new proceed on different tracks, ancient formulas and new disorders are not [necessarily] mutually capable'."⁶⁵

Zhang wrote nine books, three of which have survived to the present – *Expounding the Origins of Medical Studies* (*Yixue qi yuan* 醫學啟源, in short: *Origins of Medicine*), *Bag of Pearls* (*Zhenzhu nang* 珍珠囊), and *A Model of Using Drugs according to the Zangfu Visceral System of Function and Root vs. Symptoms* (*Zangfu biao ben yaoshi* 臟腑標本藥式, in short: *A Model of Using Drugs*).⁶⁶

Zhang's first and most important book, *Origins of Medicine*, takes the *Inner Canon* as its doctrinal basis for discussion in a systematic fashion. The book consists of three chapters. The first chapter presents the classical physiology and pathology of the *Inner Canon*, namely the physiology of the *zangfu* visceral systems of functions.⁶⁷ Zhang begins his discussion by presenting the physiology of each of the visceral system of functions, including their cosmological and physiological characteristics. Next, he lists the viscera's associated bodily functions and the mutual influences on other organs of the body. Lastly, he names each viscus's major pathologies. Only after completing this discussion he turns to describe the suitable drug or formula for treating the pathology. The second chapter focuses on symptoms and pathogens. The chapter begins with a very brief discussion of the Five Circulatory Phases and the Six Seasonal Influences doctrine (*wuyun liuqi* 五運六氣), which is followed by a presentation of associated symptoms. Zhang classifies the formulas according to six common manifestation types. He explains how each of the symptoms arises from pathology in one of the visceral system of functions. Following this explanation, he presents various formulas and describes their effects on the body. The third chapter stands out as the most systematic discussion of the traits of simples. It includes their relations to the visceral system of functions, and their physiological effects. The drugs are classified according to five major characteristics which are in accordance with the Five Phases.

Zhang's second and third books are rather short, each consists of only one chapter. The second book, *Bag of Pearls*, is devoted to simples, listing a total of 113 drugs. For each drug, much in the manner of the common *materia medica* format, he lists the attributed traits. But he deviates by adding traits related to classical doctrines of physiology and pathology. This book was the first where the description of simples included their effects on the circulation tracts. The third book, *A Model of Using Drugs*, is divided according to the twelfth *zangfu* visceral systems of functions.⁶⁸ For each viscera Zhang details the most important physiological and pathological traits along with the drugs that best suite the treatment.

Zhang was not the first author to stress the importance of the classical cosmological and physiological doctrines, but he was first to incorporate them systematically into the discussion of both simples and formulas. Zhang believed that in order to be able to prescribe medications correctly, physicians should understand fully the *zangfu* visceral systems of functions. Using his own words in the first chapter of the *Origin of Medicine*, Zhang claims that, "Man has five *zang* and six *fu* visceral systems of functions, deficiency and excess, cold and heat, life and death following the path or

going against it, all this is observed in the form [of the body], in the manifestation type, in the pulse, and the *qi*. If one does not diagnose and palpate the pulse, there is nowhere to draw knowledge from.”⁶⁹ Zhang continues to stress the topic throughout his work.

Zhang’s innovation in defining and using drugs

Drug therapy literature, namely materia medica collections and formularies, relies predominantly on aligning drugs and formulas with symptoms. These texts lacked a pathological explanation for the appearance of the symptoms and how the specific medication affects the condition or alleviate the symptoms. The canons of Classical Medicine, in contrast, predominantly discussed the physiology and pathology of the body, using manifestation types to represent clinical conditions.⁷⁰ When Zhang attempted to integrate Classical Medicine with drug therapy he had to create a new terminology that on the one hand characterized the effects of drugs, and on the other was easily associated with classical physiology and the tokens of manifestation types.

In materia medica literature, drugs are predominantly characterized by their *qi* 氣 (hot, cold, warm, and cool) and their sapor 味 (sweet, sour, pungent, salty, and bitter). These characteristics posed a problem when trying to coordinate the classical pathology with the effects of drugs since they were too simplistic. Zhang supplemented these two with other characteristics to make them more comprehensive.

The “new” characteristics are delineated in the *Origins of Medicine*:

In drugs we find the traits of *qi*, sapor, and “penetrating and superficial” (*hou bo* 厚薄). There are also the methods of “rising and descending” (*sheng jiang* 升降), “floating and sinking” (*fu chen* 浮沉), supplementing and draining (*bu xie* 補瀉), ruling and governing (*zhu zhi* 主治).⁷¹ Each of these is different. At the present, I will record them in detail and select a systematic method of constructing formulas and combining drugs.⁷²

Once he set these characteristics, Zhang continues discussing simples and formulas. To enhance the reader’s understanding he classifies the drugs under broad five categories and for each he lists a pathogen, drug characteristic, and one of the Five Phases. By doing so he uses the doctrine of the Five Phases to explain how a specific drug treats a certain pathogen.

We need to dwell on Zhang’s categorization a while longer, since here lies a major innovation. In addition to expanding the two traditional traits of *qi* and sapor by adding new couples of categories, Zhang linked them with the Yin–yang doctrine. For example, he says, “Sapor is yin, sapor and penetrating is pure yin. When sapor is superficial it is yang with in yin. *Qi* is yang, *qi* and penetrating is pure yang, when *qi* is superficial it is yin within the yang.”⁷³ A few pages later he continues saying that, “The penetrating aspect of *qi* is the yang within the yang. If [a drug’s] *qi* is penetrating then it creates heat.

Pungent and sweet [savors], warm and hot [*qi*] are like this.”⁷⁴ In addition, Zhang added classifications according to a given drug’s action toward the aspects of the body – “deeper–shallower,” “upper–lower,” and “outer–inner.” In this way he created a direct link to classical physiology and pathology. These new categories of a drug’s actions or effects made it easier to link each drug to pathological processes in the body, thus building a bridge between drug classifications and classical physiology and pathology.⁷⁵

So far we have discussed Zhang’s expansion of the characteristics of drugs to ease their alignment with the classical doctrines. This was only the preliminary phase to the core of the integration, namely associating each drug with a visceral system of functions and much more importantly, with a circulation tract. The association of drugs with circulation tracts unified the basis of acu-moxa therapy and drug therapy, thereby creating a systematic medical system based on common doctrinal basis. This, in turn enabled a unified diagnostic and therapeutic practice. In earlier materia medica collections, discussions about the effects of some drugs included references to *zangfu* visceral systems of functions, but not in a systematic manner. Zhang systematized the association and took it a step further. He not only stressed the visceral organs, but also their corresponding circulation tracts. Thus he connected the diagnosis and therapy of Classical Medicine, which relies predominantly on acu-moxa therapy, which in turn is based on circulation tracts, with drug therapy. In other words, Zhang created a unified system that integrated Classical Medicine and its acu-moxa therapy with drug therapy. It was probably Zhang’s most significant contribution.

Zhang claimed that the common practice of prescribing drugs or formulas according to major symptoms was incorrect, since it did not follow the classical method of diagnosis and determining the manifestation types. He stressed that drugs should be prescribed on the basis of the manifestation type, which in turn is tied to the physiology of the visceral systems of function, rather than solely on the basis of symptoms. For example, he claims that “*Coptis Chinensis* 黃連 drains heart fire,” and follows with a list of drugs that drain fire from each of the viscera, finally adding “the above various drugs each drains fire in specific circulation tract.”⁷⁶ This change encompasses all the previous changes into one.

Zhang made a significant contribution to the discussion of simples, but he also changed the art of prescribing formulas. In clinical practice, physicians rarely prescribe simples, instead they prescribe formulas made of a number of drugs. Zhang claims that a decision on the components of a formula should rely on classical physiology, especially on the affected *zangfu* visceral systems of functions and on the eight rubrics used to determine manifestation types. In his opinion, the *qi* and the savor of each simple are only secondary in importance. When compounding a formula from a number of ingredients Zhang did not relinquish the ancient convention of classifying drugs according to the four ranks – Monarch, Minister, Assistant, and Envoy (*jun chen zuo shi* 君臣佐使). He added references to the effects of the formula on the

visceral systems of functions in order to integrate the classical knowledge. Furthermore, he claimed that old formulas did not necessarily treat contemporary disorders.

In summary, Zhang brought the discussion on drug therapy to a new sophistication laying the ground for generations of physicians to come. He set up the conventions for using drug therapy on the basis of classical doctrines from his time up to modern practice of Chinese medicine.

Conclusion

Almost half a century passed before the republication of the classical canons began to show its effects on Prescription Medicine. This probably represents the period necessary for the new knowledge to permeate the ranks of physicians, predominantly via the imperial medical education and examination "system. Once physicians became versed with classical doctrines they faced uneasy reality – clinical practice, which relied mainly on drug therapy, was not compatible with them. Physicians, scholar-officials, and even an emperor faced a tough decision regarding overcoming these discrepancies. Being part of a dynasty that revived and perfected ancient Confucian ideology, they followed the path with medical doctrines as declared by a Southern Song-dynasty physician Chen Yan 陳言⁷⁷ (c. 1121–1190):

The state employs literary, military, and medical officials; these positions were all set up to benefit the people. There has never been a case in which someone has not studied antiquity and obtained [an official post]. Studying the Way of antiquity, although it is different, it is similar. For the Confucian scholars, one must study the Five Classics, the Three Histories, and the various schools, and one hundred schools of thought, only then can be called a scholar. The classics of medicine are the *Basic Questions* and the *Divine Axis*; the history books are the various surviving materia medica collections; the books of the various schools are the *Canon of Problems*, "*A–B*" *Canon of the Yellow Emperor*, *Grand Basis*, and Hua Tuo's book *Zhongzang* 中藏.⁷⁸

The solution was integration of the newly printed ancient knowledge with prevailing medical practice. The first stage of integration was mostly declarative. Authors on the one hand warned against uneducated and wanton application of medications and began to preach the importance of classical cosmology. For the first time we find discussion of correlative cosmology, the impact of changes in nature on humans, and discussions of Yin–yang and Five Phases doctrines. The first writers blended discussion of these doctrines into their works but did not compound them with discussion of drugs or formulas.

The next stage concerned actual clinical practice, namely, how to use the classical doctrines in prescribing and modifying formulas to fit the

manifestation type of the patient. In order to do so, physicians had to rely on classical physiology and pathology. Thus we find association of formulas with visceral systems of functions and deliberations of how an addition or subtraction of a simple will impact the physiological function of those viscera.

The last stage concerned the basic tokens of drug therapy, namely simples or drugs. Drugs were characterized and classified using a rudimentary system of *qi* and sapor. This did not suffice when physicians had to associate them with physiological functions. Zhang Yuansu added classificatory criteria to solve this issue. He also included systematic discussion of classical physiology and pathology, interlaced with the effects of drugs and formulas. By the end of the twelfth century, drug therapy literature was transformed. The integration of classical doctrines into drug therapy took nearly a century to reach this milestone, nonetheless, the integration process continued for decades to come. For example, the change continued with the publication of a unique materia medica – Wang Haogu’s 王好古 (c. 1200–1270) *Materia Medica of Drugs Used for Decoctions* (*Tangye bencao* 湯液本草, compiled around 1246).⁷⁹

There is one issue left to discuss. Physicians who lived in North China under the Jurchen Jin dynasty authored the representative books of the two latter stages discussed in this chapter. This begs the question: did the Southern Song experience similar change? This topic, unfortunately, is too broad to cover in this study. However, if we check the information recorded in Chen Yan’s famous formulary – *The Three Causes Epitomized and Unified: Discussions on Medical Disorders, Manifestation Types, and Formulas* (*Sanyin jiyi bingzheng fanglun* 三因極一病証方論, compiled in 1174) – we find that it made very little progress from Kou Zongshi’s work. As evident from the quotation above, Chen preaches for the usage of classical doctrines. He even devoted the contents of approximately two chapters in his book to the topic, but he never integrated this knowledge into the discussion of specific formulas.

Epilogue

In this study I have laid down the narrative of the changes that occurred in Chinese medicine during the Song dynasty. I also showed how the changes in the eleventh century transformed Chinese medicine into the form that we are familiar with during the later imperial China and up to the present. Part of this process included choosing, revising, and printing the major canons of Chinese medicine, and accordingly setting the dominant theoretical foundations by means of medical education system. The selection of the canons and the consequent integration of contemporary medical practices into them to fit their contents was a turning point in the history of Chinese medicine. Up to this juncture, empirical and theoretical medical knowledge were disjointed both in practice and in literature. Diagnosis and treatment existed in their own reality without the need of complex cosmological doctrines describing the body's physiology and pathology. This is, naturally, a generalization, since some scholars did read the ancient classical canons and may have pondered on their relations to contemporary medical practice.

Bridging the gap between empirical clinical practice and theoretical discussion of the body, namely physiology and pathology, was, in my mind, one of the three major turning points critical in understanding the evolution of Chinese medicine that included: 1) the formation of canonical theory in the Han dynasty; 2) the integration of theory and practice into one systematic comprehensive medicine in the Song dynasty; and 3) the impact of Western medicine from the nineteenth century onwards.

What brought about the change during the Northern Song dynasty?

As discussed above, three main reasons or underlying causes brought about this change. First, personal interest among the Northern Song emperors created a growing interest in medicine and in medical practice. The majority of the Northern Song emperors showed varying levels of interest in medicine, from applying needles or moxibustion as treatment to collecting medicinal formulas; from collecting medical books to commissioning revisions of others; and from writing prefaces to medical books to compiling their own treatise on medical doctrines and practices. This personal interest in and involvement with medicine influenced imperial policy, biasing it toward medicine like never before. This resulted in several book-collection projects

initiated during the late tenth century, leading to book-revision and printing projects during the eleventh, and the establishment of medically oriented institutions during the late eleventh and early twelfth centuries. Although the imperial interest led to collecting, revising, and printing books, it took a second, outside, ecological change to nudge the imperial government to more radical involvement in medicine. This was a wave of epidemics that erupted during the years 1045–1160, requiring a swift response by the emperor and his government to preserve his heavenly mandate.

It is unclear what prompted this wave of epidemics. It may have been the ongoing population shift to south China, a region that hosts a greater number of endemic epidemics than the northern part of China. It may have been the rising volume of trade, the increasing length of trade routes, or even the growing urbanization. What we do know is that Emperor Renzong, his government, and its officials, all took these epidemics as a serious threat that had to be dealt with. The result was the establishment of the Bureau for Revising Medical Texts, staffed by officials and doctors alike. The officials, who occupied the more influential positions, looked for medical literature that can address these epidemics and could help dealing with the ongoing crisis. They found the solution in the form of an 800-year-old canon that was almost out of circulation – the *Treatise on Cold Damage Disorders*. As a matter of fact, this was not one book but rather three incomplete versions of what survived from the original *Treatise*. The selection of this specific medical text represents or exemplifies the third underlying cause that triggered change in medicine during the Northern Song dynasty – the involvement of the literati or scholar-officials in medicine.

The literati, or the *shi* 士, in China almost never took interest in medicine before the eleventh century. The majority of them perceived medicine as a lowly art unworthy of taking interest in let alone encouraging their sons to study it. It is unclear if it was the emperor's interest or the genuine desire to benefit the people, but Song scholar-officials showed growing interest in medicine. The Northern Song scholar-officials came from a different background than those of the Tang dynasty. Knowledge and learning became much more important as passing the *jinshi* civil service examination became the most promising path to become an official. Moreover, these officials, along with the rise of Neo-Confucianism, aspired to fulfill their destiny as officials in the civil service to the best of their abilities. Along with the Confucian stress on benefiting the people, medicine became a preferred manifestation of the Confucian values. This led to personal involvement in medicine, involvement manifested in sponsorship of medical texts, standardizing medical knowledge, promoting medical education, advancing public health policies and medical institutions, and even writing medical texts.

All these changes created a new medical scene. For the first time in Chinese history, medical books were revised, standardized, printed, and promulgated to the empire's prefectures. They were also included in the curriculum of the newly established imperial medical education and examination system.

This made medical texts available to a larger audience, mostly belonging to the literate official elite and to literate physicians. Toward the end of the eleventh century, many of these texts were printed using a smaller and less expensive format, thus expanding their audience even more. This growing audience, exposed to the medical canons of antiquity along with practical empirical medical manuals, gradually realized that an inherent incompatibility subsisted among these texts.

This change in the medical environment brought about a much greater change in medicine. A process of bridging this gap began during the last decades of the eleventh century and the early decades of the twelfth century. We find a number of texts that take the first steps to integrate these genres of medical literature. These texts do not belong to one medical genre or another. Rather we find a *materia medica* collection, Cold Damage compilations, a formulary, and a text proclaiming to belong to the Classical Medicine genre. It is important to note that the authors themselves represented a heterogeneous cohort including doctors, officials, and even an emperor. The incorporation of the empirical practice into the cosmological doctrines of the Han was the solution we find in all these texts.

Over the twelfth century we find texts that show broader and broader integration between the cosmological and physiological doctrines of Classical Medicine, Cold Damage Disorders, and drug therapy. This is exactly the point in time when the integration of empirical and practical medical knowledge as well as Cold Damage doctrines with classical cosmological medical doctrines materializes. This is when a new narrative of Chinese medicine begins, a narrative of the rising status of medicine that incorporates classical learning, thus worthy of scholar-officials' time and efforts.

In summary, changes that occurred during the eleventh century transformed the medical environment for physicians, compelling them to rethink and begin reformulating medicine into a more comprehensively integrated system of doctrine and practices. It should be noted that during the late twelfth century and early thirteenth centuries we find the beginning of differentiation of medical practice into more focused and narrow approaches by the Four Great Masters of the Jin Yuan dynasties (*Jin Yuan si da jia* 金元四大家). This next transformation is indeed an intriguing topic, but separate from the one discussed in this study. The political, geopolitical, social, economical, and intellectual contexts during the late twelfth and thirteenth centuries are all radically different. The mere fact that China was divided into two significantly different empires, the foreign Jin Empire at the north and the Southern Song at the south, makes this a totally and significantly different context.

Notes

Introduction

1. The increase in the number of medical books during the Northern Song dynasty is evident from a survey of surviving literature done by Okanishi Tameto 1969, *Song yiqian yi jikao* (*Sō izen iki kō*) 宋以前醫籍考).
2. Shang Zhijun 尚志鈞 *et al.* 1989, pp. 34–57 and pp. 174–251.
3. A Chinese formula (*fang* 方) consists of a number of simples, or individual drugs (*yao* 藥), with complementary effects combined together to achieve the desired clinical results. Chinese physicians preferred prescribing formulas, not simples, in order to avoid the undesirable side effects usually associated with consuming a single drug. Often, they believed that individual drugs in a formula enhanced or limited one another resulting in a milder effect without the unwanted effects (for further discussion see Bensky and Barolet 1990).
4. Miyashita 1976, 1977, 1979, 1980.
5. I borrow the term from Lloyd and Sivin 2002, pp. xi–xii.
6. Gernet 1985, p. 300.
7. Ho 1967, Hartwell 1982, Dong Guodong 2002, pp. 198–9, Wu Songdi 2000, pp. 122–35 and Bielenstein 1987.
8. Bray 1986 and Ho 1956.
9. This topic of social mobility is widely discussed in the literature. E. A. Kracke (1947) was the first to claim that the examination system engendered significant social mobility. Robert Hartwell (1982) on the other hand sees a transformation in the elite itself, distinguishing a “founding elite,” a “professional elite,” and a “local gentry elite,” rather than in its members. Later works tend to follow one of the two but also narrow the gap and provide a more broad and diverse picture. Thomas Lee (1985) argues for high social mobility in the Song, stressing the importance of schooling and examinations in the formation of the Song elite. Robert Hymes (1986) agrees with Hartwell’s analysis of the various types of elites and focuses on the local elite in one prefecture. However, he questions the reality of the distinction between the professional elite and local gentry. John Chaffee (1995) provides a sophisticated study of the working of the civil service recruitment system, namely the examination system. For a review article on the topic, see Ebrey 1988.
10. Skinner 1977.
11. Shiba Yoshinobu 1970, 1975. See also Hartwell 1989.
12. Hartwell 1962, 1966, and 1967.
13. Chia 2002, pp. 66–7. See also Goodrich 1963, Ji Shaofu 1991, Chia 1996, and Cherniack 1994.
14. See Worthy 1975.

15. For works on the examination and education system as well as the new society of the Song, see Chaffee 1995, Hymes 1986, Hymes and Schirokauer 1993, and Bol 1992.
16. See Elvin 1973.
17. For overview of the history of medicine in China, see Unschuld 1985 and Needham 2000. For discussion on popular medical practices in China, see Nathan Sivin's unpublished paper, "Ailment and Cure in Traditional China" and Strickmann 2002. For overviews of studies on the history of medicine in China, see Sivin 1999 and Hinrichs 1999.
18. For further discussion on medicine during the Warring States and Han dynasty, see Harper 1990 and 1998; He and Lo 1996; Lo 2001; DeWoskin 1983; and Kuriyama 1994, 1995, and 1999.
19. See Kuriyama 1999 and Lloyd and Sivin 2002.
20. See Schipper 1993 and Strickmann 2002.
21. For discussions on Tang medicine, see Lo and Cullen 2005 and Wilms 2002.
22. For further discussion on the concept of disease, see Kuriyama 1993.
23. Unschuld 1985, chapter 3, especially pp. 73–83.
24. I leave *qi* and *xue* without translation since there is no appropriated translation for the terms in English. We might define *qi* as "what makes things happen in stuff" or "stuff that makes things happen." *Xue*, which many authors translate incorrectly as blood, can be described as the Yin vitalities of the *qi* and the blood that carries them. Given these somewhat obscure definitions the reader is advised to consult Sivin 1987, pp. 46–53. The problem of these two substances flowing in the same system of circulation tracts was not examined in the ancient canons of medicine. For further discussion, see Sivin 1987, pp. 117–24.
25. Although the visceral systems of functions carry names of familiar organs, they are viewed as a conglomerate of functions rather than anatomical tissue. Each of the visceral system of functions is associated with a circulation tract, which has acu-points along its path. This is the logic behind the point-stimulation therapy of acu-moxa. Needling or heating a specific locus on a circulation tract can achieve a desired effect on a specific visceral system of functions.
26. The manifestation type, though similar, is not identical in meaning to syndrome. The former is a more flexible classification than the latter, since it had to agree with the perception that medical disorders are considered as a dynamic process rather than a static state. For further discussion, see Sivin 1987, pp. 106–11 and Farquhar 1994, pp. 147–74.
27. Additional stimulation techniques include capping, massage, and in recent years even the use of electricity. For comprehensive discussion of acu-moxa techniques and doctrines see Lu and Needham 2002 and Sivin 1987, pp. 258–64.
28. For further information on drug therapy, see Unschuld 1986, Fu Weikang 1993, Shang Zhijun *et al.* 1989, Xue Yu 1984, Wei and Nie 1994, Bensky and Barolet 1990, and Bensky and Gamble. 1993.
29. See Harper 1998.
30. For a discussion of the meaning of Cold Damage diseases, see Epler 1988.
31. Unschuld 1985, pp. 154–88. Unschuld (1986, pp. 55–84) also discusses Song-dynasty *materia medica* collections. The "Four Masters of Medicine" of the Jin-Yuan era are: Liu Wansu (劉完素), Li Gao (李杲), Zhang Congzheng (張從正), and Zhu Zhenheng (朱震亨).
32. Obringer 2001, Despeux 2001, Furth 1999, and Leung 2003.
33. Hinrichs 2003.
34. See Zhao Pushan 1983 and Li Jingwei and Li Zhidong 1990. Standing out among the general histories of medicine is a recent one, in which Zheng Jinsheng wrote a chapter on the Song dynasty (Liao Yuqun *et al.* 1998). There Zheng provides some analysis of the changes to supplement the informative aspect.

35. See Wan Fang 1982; Liang Jun 1995.
36. See Fan Xingzhun 1943; Wan Fang and Lu Xichen 1987, Wu Hongzhou 1986.
37. See Zhang Ruixian 1988, 1989, 1990, 1993; Gong Chun 1955; Liang Jun 1995.
38. See Li Lin 1997; Zheng Jinsheng 1982, 1983–1984; Shang Zhijun *et al.* 1989.
39. Yan Shiyun 1993.
40. Chen Yuanpeng 1997; see also Chen Yuanpeng 1995.
41. Hymes 1987.
42. For an overview of recent trends in studies concerning traditional medicine in China, see Sivin 1988, Sivin 1999 and Hinrichs 1999.
43. Kohler 2005, pp. 224–9.
44. It is important to note that by specialized writing I do not imply specialization of the modern kind in practice. This topic is open for further research.

Chapter 1

1. For further discussion on the nobility's perception of medicine, see: Hymes 1987, pp. 9–11, 61–6; Needham 2000, pp. 38–42; and Chao Yuan-ling 2000, pp. 66–70. For a general overview discussing the status of medicine and physicians in Chinese history, see Liu Lixiang 2003, pp. 82–5. It should be noted that Hymes 1987 claims that during the Song dynasty medicine was a very unlikely choice for the sons of elite families or imperial officials and it was not until the Yuan dynasty (1276–1368) that medicine became an accepted and more common occupation among men of elite pedigree.
2. *Shi shuo* 師說, *Quan Tang wen*, 558.5645–6.
3. *Xin Tang shu*, 204:5797.
4. SYQYJK, p. 16.
5. For further discussion on Sun Simiao's alchemical work, see Sivin 1968. For discussion on his impact on medical ethics, see Unschuld 1979. For discussion on sections of his book, see Wilms 2002.
6. SYQYJK, pp. 605–6.
7. Another example for the Song-dynasty government activism concerns architecture. In 1103, Li Jie 李誡 (d. 1108), the Director of the Directorate for Construction in Emperor Huizong's government, compiled and published the *Manual on Architecture* (*Yingzao fashi* 營造法式). This was the famous Northern Song guide regarding the construction of buildings based on the principle of modular design. I am grateful to Peter Bol for pointing out this fact to me. For further details, see Bickford 2002–2003; for a selective overview of the emperor's interest in medicine, see Li Jingwei 1989.
8. It is unclear if Huizong participated in the compilation of the formulary or merely commissioned and oversaw the work.
9. Qi Bo was official or physician to whom the Yellow Emperor supposedly addressed his questions in the *Yellow Emperor's Inner Canon*.
10. The “*General Register*” is a direct translation of the Chinese term *zonglu* 總錄. These two characters refer to the *Medical Encyclopedia*, to which this preface was attached. Huizong uses the character *zuo* 作, which I have translated as “written,” since similar language is used to refer to the books by Zhang Zhongjing and Sun Simiao.
11. Here Huizong alludes to *Zhuangzi* section 26, where the “fish trap and rabbit snare” are referred to as the mere means to attain a certain goal, with no independent value otherwise.
12. I leave *qi* 氣 without translation, since there is no satisfactory English translation for the term. (See note 24 in the Introduction, above)
13. Preface to *Zhenghe sheng ji zong lu*. The preface also appears in SYQYJK, pp. 797–8. I am grateful to Nathan Sivin for his help in translating this passage.

14. For an excellent overview of the history of the Song imperial family, the Zhao family, see Chaffee 1999.
15. SS 3.50. Moxibustion is based on burning tinder made of Chinese Mugwort (*Artemisia Argyi* or *Artemisia Vulgaris*) next to, or on, a specific acupuncture locus.
16. These incidences are recorded in the discussion of two specific drugs in the *Kaibao Materia Medica* (974 CE). This book did not survive to the present, but its data was included and noted in the *Classified Materia Medica* (published in 1108, see Chapter 4) under each of the following two drugs – Jin xie 金屬, Ying tian 景天. See also Shang Zhijun *et al.* 1989, pp. 104, 205 respectively.
17. See SS 461:13507, the biography of Wang Huaiyin; YH, 63:20b–21a; and *Junzhai dushu zhi, juan 2*. See also preface to the *Imperial Grace Formulary* in SYQYJK, pp. 714–5.
18. *Sushui ji wen* 6:124; *Song chao shishi lei yuan* 7:68–69; and CB 83:1903–4.
19. *Meng qi bi tan* 9:10a. This anecdote also appears in the *Bencao gang mu* 34:1963.
20. *Songren yishi huibian* 1.27. See also Qian Yuanming *et al.* 1986, p. 271. According to Shi Xuemin and Zhang Mengchen 1998 (p. 511), *Xingxing* is another name for a point on the Superintendent tract (*dumai*), *feng fu* 風府 (GV16).
21. Self-treatment by needling is not an easy task and often not recommended. This is especially true when the acu-point is located at the back of the head one inch above the middle of the natural hairline. This fact puts the record's accuracy in question.
22. Zhang Ruixian 1990 provides a comprehensive analysis of the changes in the status of medicine and its place in Chinese society, especially among the scholar-officials. Chen Yuanpeng 1997 also discusses this issue extensively, especially pp. 162–206.
23. SDZLJ, 158.596. The character *juan* 卷 means “roll” and its extended meaning is volume or chapter. Therefore, 10,000 *juan* in this instance can also be 10,000 volumes. For comparison, the first formulary published by the Song government included 100 chapters. The Three Institutes (*sanguan* 三官) is a collective reference to the Historiography Institute, the Institute for the Glorification of Literature, and the Academy of Scholarly Worthies. In aggregate these institutions constituted what was called the Academy of Veneration of Literature. See Hucker 1985, p. 398.
24. See Haeger 1975, pp. 3–6.
25. SDZLJ, 158.596.
26. SDZLJ, 219.842. It is important to note that prior to the Song, only a negligible fraction of medical knowledge had been transmitted through imperially sponsored compilations. Most clinical knowledge passed among rank-and-file practitioners, never reaching government officials. For example, a prominent Tang-dynasty physician, Sun Simiao, in the preface to his book *Essential Prescriptions*, complained that some medical practitioners in south China who possessed medical knowledge were not willing to pass on to others, including himself, a northerner.
27. SYQYJK, p. 1211 (preface to the *Kaibao bencao*).
28. According to the *Divine Husbandman's Materia Medica*, the three ranks of drugs are those that prolong life, drugs that prevent disease, and drugs that treat diseases. For discussion on the three ranks as well as translation of relevant sections from the *Divine Husbandman's Materia Medica*, the earliest extant material medica collection in China, see Sivin 1987, pp. 181–2 and Unschuld 1986, pp. 5–21.
29. SDZLJ, 219:842.
30. SYQYJK, pp. 721–2; YH, 63:21a–b; SS 207:5311 and 265:9140; and CB, 28:640. There is one mention of an edict dating to 1099 that orders the revision and

- dissemination of the book. It seems out of context and may be a mistake or a futile attempt to revive this book. See CB, 507:12081.
31. YH, 63.20b–21a.
 32. This text consists of two substantially different parts: the *Basic Questions* (*Huangdi neijing suwen* 黃帝內經素問) and the *Divine Pivot* (*Huangdi neijing lingshu* 黃帝內經靈樞). Because the title *Inner Canon* (*Neijing* 內經) is used from the Northern Song dynasty onward as a collective title to the two volumes, I follow this convention and, from this point on, I refer to the entire text simply as the *Inner Canon*. For further discussion about the structure of the canon, see Unschuld 2003, Sivin 1993, Keegan 1988, and Yamada 1979.
 33. For a comprehensive discussion of the Mawangdui texts and their translation, see Harper 1998. See also Lu and Needham 1980, pp. 73–4. For discussion on the origin of acupuncture, see Epler 1980 and Kuriyama 1995.
 34. For elaborate and enlightening discussion on the Chinese perception of the body and how it differed from the Greek one, see Kuriyama 1999. For discussion on the application of macrocosm–microcosm doctrine in Chinese science and medicine, see Lloyd and Sivin 2002, chapter 5, especially pp. 214–26. See also Sivin 1995d and He and Lo 1996.
 35. For further discussion on the topic, see Sivin 1995c, and Sivin 1999.
 36. See Sivin 1995c.
 37. Sivin 1993, pp. 198–9.
 38. Various scholars have suggested two different compilation dates, either 258 CE or 282 CE. See Sivin 1987, pp. 453–4.
 39. For extensive discussion of the “A–B” *Canon of the Yellow Emperor*, see Huang Longxiang 1996, pp. 143–63.
 40. Radial pulse is the foremost diagnostic method in Chinese medicine in general and Classical Medicine in particular. The physician palpates the pulse at the base of the wrist attempting, based on different qualities of the patient’s pulse, to diagnose the disorder of the patient. Pulse diagnosis in Chinese medicine differs radically from palpating the pulse in Western medicine. See Kuriyama 1999, especially chapters 1, 2, and 5.
 41. The date of compilation is not clear. I follow Sivin regarding the dates of this text. See Sivin 1987, p. 455; and Sivin 1993, pp. 201–2.
 42. Sivin 1993, pp. 201–3 and 205–8; Unschuld 2003, pp. 39–58.
 43. This book is recorded under several titles in various sources (*Huangdi neijing mingtang* 黃帝內經明堂, *Mingtang* 明堂, *Mingtang jing* 明堂經). I follow Ma Jixing who refers to all these records as one text and classifies them under one name, *Yellow Emperor’s Canon of the Hall of Enlightened Rule* or the *Huangdi mingtang jing* (Ma Jixing 1990, pp. 295–9). For additional information see Sivin 1993. Okanishi gives a slightly different title *Huangdi neijing mingtang leicheng* 黃帝內經明堂類成 (SYQYJK, pp. 238–9).
 44. For additional information on the Tang editions, see corresponding sections in Kosoto *et al.* 1981.
 45. Other texts from this period, such as the *Zhu bing yuan hou lun*, recommend needling and moxibustion as treatment for various disorders, but they did not devote specific chapters to discuss the topic.
 46. For further discussion about Sun Simiao and acu-moxa therapy, see Fu Weikang 1991, pp. 109–14, and Lu and Needham 1980, pp. 121–7.
 47. Wang, in the *Arcane Essentials*, lists the acu-points associated with the Superintendent tract (*Du* 督) and Conception tract (*Ren* 任) extra tract under the kidney and urinary bladder tracts.
 48. *Wai tai bi yao* 1982 reprint, chapter 39, p. 1077.
 49. This point is discussed in Fu Weikang 1991, pp. 115–21. For further discussion of acu-moxa during the Tang dynasty and Wang Tao’s work on acu-moxa see

- Lin Zhaogeng and Yan Liang 1995, pp. 104–38; Shi Guangyu 1991; and Fu Weikang 1991, pp. 100–29.
50. Ma Jixing 1990, p. 207.
 51. See Chapter 4 for detailed discussion of Taizong's interest in formulas.
 52. The three Tang-dynasty texts are divided as follows: chapter 99, the *Needling Canon*, comprises one text, and chapter 100, the *Hall of Light*, comprises two texts. Based on the analysis of the specific acu-points on the channels, their usage, and the characters used in their names (imperial taboos), researchers concluded that the *Needling Canon* is probably of a later date than the *Arcane Essentials* but can not be a Song compilation (see Feng Hechang 1997, Lin Shucai and Feng Hechang 1996). The *Mingtang* can also be dated to the same period. The compilers of the *Imperial Grace Formulary* did not provide any information regarding the authors of the three original Tang-dynasty acu-moxa texts. Nor did they specify the sources.
 53. *Taiyi ju zhuke chengwen ge* 太醫局諸科程文格, juan 6, pp. 11A–B (SKQS edn). For further discussion, see Tao Yufeng *et al.* 1988, p. 466, article 1541. Yu Yue 俞樾 also quotes this section in *Cha xiang shi cong chao* 茶香室叢鈔·四鈔, juan 7.
 54. We should keep in mind the possibility that the officials who authored the historical records wanted their readers to believe that Renzong was an avid sponsor of acu-moxa therapy. Xu Xi was a doctor from Kaifeng, Henan prefecture. There is no record how or where he received his training, but we do know he was not part of the imperial medical system. He was especially proficient in acu-moxa therapy. After his success in treating the emperor, he became an official and was even appointed as the Chief Steward of the Palace Medical Service (*Shangyao fengyu* 尚藥奉御). For further biographical details, see He Shixi 1991, vol. 2, p. 528.
 55. SS, chapter 462, p. 13520.
 56. Some historical records disagree about the full name of Wang. In some records it appears as Wang Weiyi and in other as Wang Weide 王惟得. For additional discussion see Huang Longxiang 1996, pp. 216–7. I use the former following the convention used in most historical works. The specific dates of Wang's life are also not clear. It is unknown where he is from and his dates of birth and death are approximations. The dates provided above suggested by various secondary sources such as Fu Weikang 1991 (p. 133), and Li Jingwei *et al.* 1995 (p. 163). Li Yun 1988 (p. 68) offers other dates, namely 981–1067.
 57. The edition of the *Illustrated Canon of Acu-moxa* I used is the one appearing in Huang Longxiang 1996. This version reflects, according to the convincing exposition by the compiler, an authentic reconstruction of the original. Huang reconstructed this version according to parts of the text that survived on the stone stele (as discussed below) and according to sections that were copied to other texts during the Northern Song, especially the *Medical Encyclopedia*. Huang's newly reconstructed version differs from the more widely available *Xinkan buzhu tongren shuxue zhenjiu tujing* 新刊補註銅人腧穴針灸圖經, which was compiled in 1186 during the Jin dynasty. The main difference, aside from the additional commentary, lies in the drawings accompanying the text. Huang's edition includes three drawings, which depict the circulation tracts and internal organs, but no acu-points. The 1186 edition included twelve drawings depicting selected acu-points and tracts.
 58. The stone stele was immured in the Beijing city wall around 1445 and was only brought to light in modern times. See Lu and Needham 1980, p. 134.
 59. See Huang Longxiang 1996, pp. 216–17; Li Yun 1988, p. 68; and the preface to Wang's book in SYQYJK pp. 248–9.
 60. See Zhen Tuixi *et al.* 1986.
 61. SYQYJK, pp. 248–9.
 62. Lu and Needham 1980, p. 131.

63. CB, 105:17.B. The Xiangguo Temple was the largest temple in Kaifeng. It was originally built as a Buddhist temple in 555 CE. It was rebuilt during the Tang dynasty (712) and once again during the Song dynasty (996).
64. CB, 105:17.B.
65. For more information regarding dates and earlier records of attempts to cast acu-moxa models see Lin Zhaogeng and Yan Liang 1995, pp. 202–7.
66. None of the bronze models surviving today has internal representations of the viscera, removable or not, as far as we know. See Lu and Needham 1980, pp. 131–3 and Fu Weikang 1991, pp. 135–9.
67. Lu and Needham (1980, p. 133), claim that water, not mercury, was used. Although the text has the character *gong* 汞, mercury, “that would surely have been impossible as an amalgam would have formed, and weakened the walls.”
68. Apparently, one of the figures traveled and was used to make master copies.
69. The quotation is taken from *Qidong yeyu*, 14:175. A translation appears in Lu and Needham 1980, p. 131.
70. For discussion regarding the various standardizations of weights and measures during the Song dynasty and other dynasties, see Wu Chengluo 1937, pp. 91–2, 167–74.
71. Later in the Northern Song we have two cases of dissections of prisoners to better understand the anatomy of the body: *Ou Xifan's Charts of the Five Viscera* (*Ou Xifan wuzang tu* 歐希範五臟圖) dating to the 1040s and *Charts of Internal Organs and Tracts* (*Cunzhen huan zhongtu* 存真環中圖) dating to 1113. Neither of these works survived to the present. For further discussion on works including charts and illustrations of the body in Chinese medicine, see Yan Xin 1992 and Jin Shiyong 1994b.
72. CB, 105:5B–6A.
73. YH, 63:25b.
74. *Ibid.* See also SYQYJK, pp. 98, 104–5, 110–12.
75. YH, 63:22A. It seems strange that only the *Basic Questions* volume of the *Inner Canon* was revised and the other volume, the *Divine Pivot*, was not. Even more perplexing is the fact that contemporary scholars have assessed that Wang Weiyi had access to the *Divine Pivot* when he compiled his *Illustrated Canon of Acu-moxa* (see Huang Longxiang 1996, pp. 224–5). Unfortunately, we have no record that sheds light on this issue. We do know that the government ordered the Bureau for Revising Medical Texts to revise the *Divine Pivot* in 1057, but one of the editors, Lin Yi, commented that the book was already lost. The *Divine Pivot* was eventually revised and published in 1155 by Shi Song 史崧 (see Ma Jixing 1990, pp. 82–3).
76. For a survey of epidemics during the Northern Song dynasty and a detailed discussion of the Bureau for Revising Medical Books, see Chapter 3.
77. Sivin 1993, pp. 205–6
78. The editors of the latter book actually titled it the “A–B” *Canon of Acu-moxa Therapy* (*Zhenjiu jia yi jing* 針灸甲乙經), a name which in later generations became more popular and commonly used.
79. Sivin 1993, pp. 202–4. Liao Yuqun *et al.* 1998, pp. 300–2.
80. *Zhenghe sheng ji zong lu* 政和聖濟總錄, preface. The preface also appears in SYQYJK, pp. 797–8; ZGYJTK, pp. 5272–3.

Chapter 2

1. These are titles of Song-dynasty medical manuals, which include in their titles three surnames of scholar-officials who authored them – Su Shi 蘇軾, Shen Gua 沈括, and Xu Shuwei 許叔微.
2. SYQYJK p. 869.
3. Chen Yuapeng 1997.

4. See Bol 1992, Chaffee 1995, Lee 1985.
5. For a discussion of the topic, see Chaffee 1995, pp. 13–17, 47–55. Chaffee provides one of the most enlightening discussions about the history and social configuration of the Song education and examination systems.
6. It was the highest degree which enabled successful candidates to enter the ranks of officialdom. The other degree, which enabled successful candidates an entry, was “various fields” (*zhuke* 諸科).
7. Chaffee 1995, pp. 50–1.
8. See Chaffee 1995, pp. 74–7. Lee 2000, pp. 77–87, 138–50.
9. Chaffee 1995, pp. 18–43. According to Chaffee’s research, the number of the prefectural candidates at the beginning of the eleventh century stood at 20,000–30,000 and had risen to 79,000 by the end of that century.
10. Bol 1992, pp. 1–6.
11. Fan’s term “good doctor” probably referred to literate physicians who were versed with contemporary medical literature. *Fan Wenzheng gong ji – Zouyi* 范文正集。奏議 (SBCK edn), 2:40a. See also *Nenggai zhai manlu*, Wu Zeng 吳曾, 13:332.
12. For a list of medical books compiled by scholar-officials during the Song dynasty, see Chen Yuanpeng 1997, pp. 134–49.
13. On the various historical titles referring to physicians in China, see Zang Zongdong 1990, 138–47.
14. It is interesting to note that even when high officials came from opposite ends of the political spectrum and often abolished newly implemented policy reforms of the “other” side, the changes in medicine persisted. One such example is the persistence of the Imperial Pharmacy from 1076 through the end of the Northern Song dynasty, in spite of great turmoil in the political scene during the last three decades of the eleventh century. (see chapter 4).
15. See Kondō Kazunari 1986.
16. *Sima Wenzheng Gong chuanjiaji*, pp. 752–5. I am grateful for Philip Claret for providing me with this reference.
17. See Hinrichs 2003.
18. For extensive discussion on this form of transmission of medical knowledge in China, see Sivin 1995c, pp. 177–204, and Wu Yiyi 1994, pp. 36–65.
19. *Han Changli xiansheng ji*, 12:139. For further discussion, see Needham 2000, pp. 101–5.
20. For an extensive discussion of Fan’s reforms, see Liu 1967.
21. *Fan Wenzheng gong ji – Zouyi* (SBCK edn), 2:40a.
22. *Ibid.* 2:40a–b.
23. SHY *zhiguan* 22.35a. The Imperial Medical Service replaced the existing office title *Taiyi shu* 太醫署, which Hucker translates also as Imperial Medical Office (1985, p. 479). The latter title was a remnant from the Tang dynasty that concentrated on medical issues but not on education. The SHY includes a reference that claims that the change in name and designation occurred as early as 992 CE (SHY *zhiguan* 22.35b). However, in recent years, scholars agree that it must be either an error or just a change in the office title since other available records indicate that medical education did not begin until the 1040s. See Zhang and Yuan 1994, p. 41; Liang Jun 1995, p. 99; Zhang Ruixian 1988, pp. 13–14.
24. See Zhang Ruixian 1988, p. 14.
25. For the examination of Hanlin officials by Taizu, see CB 4:26b and SS 1:16. For the search for qualified doctors by Taizong, see *Song Taizong shi lu* 41:2a and SS 5:81. For further discussion see Zhang and Yuan 1993, pp. 33–4.
26. For further discussion, see Chaffee 1995, pp. 66–9.
27. SHY *zhiguan* 22:36b.

28. SHY *zhiguan* 22:36a–b.
29. See Gong Chun 1955, p. 170.
30. The information is based on SHY, *zhiguan*, 22:36a–b. For detailed discussion of the changes in medical education during the mid and later Northern Song, see Gong Chun 1955.
31. SHY *zhiguan* 22:36a.
32. CB 271:11a; SHY *zhiguan* 22:37. See also Zhang and Yuan 1993.
33. In this system, the National University and later, schools at all levels in the empire, were divided into three grades or halls, hence the name. Promotion from grade to grade depended upon periodic examinations. For further information on the Three Hall System, see Chaffee 1995, pp. 77–84. For the implementation of the system in medicine, see SS 157:3689. For further discussion on the topic see Gong Chun 1955 and Zhang and Yuan 1993.
34. See Hymes 1987.
35. SS 155:3613 and *Fan Wenzheng gong ji, juan 2*.
36. SHY *zhiguan* 22:36.
37. Liang Jun 1995, p. 101. CB *juan* 355. See also Zhang Ruixian and Yuan Xiurong 1993, p. 34.
38. CB 472:11272.
39. *Lequan ji, juan* 25:21a–b.
40. CB *juan* 181:2a–b.
41. SHY *zhiguan* 22:36.
42. *Ibid.* 22:38a.
43. *Taiyi ju zhuke chengwen*, 3:1a–2b. See also Lu and Needham 2002, pp. 108–11 (the translation is quoted from p. 109).
44. The Three Schools is a Northern Song-dynasty term referring to the three major schools operated by the Directorate of Education 國子監 – the National University 太學, the Military School 武學, and the Law School 律學. See Gong Yanming 1997, p. 358.
45. This sentence is ambiguous and can be read in two ways. It can either mean that there is no method to promote the graduates of the Imperial Medical Service within the imperial bureaucracy, or that there is no way to encourage gentlemen to become medical practitioners.
46. SHY *chongru* 3:11b.
47. Chen Yuanpeng 1997, p. 183.
48. The officials of the Advisory Office use the term “superior physician” to distinguish the graduates of the Medical School from the “medical workers” mentioned earlier in the edict, referring to contemporary doctors. For further discussion on the different references to physicians in historical literature and their implications, see Zhang Zongdong 1990.
49. SHY *chongru* 3:11b.
50. During the second half of the eleventh century, the Directorate of Education oversaw the operations of the most important and prestigious schools – the National University, the Military School, the Law School, and the Biyong School. For further discussion of the Directorate, see Lee 1985, pp. 58–62.
51. SHY *chongru* 3:13b. A partial translation appears in Hymes 1987, p. 70.
52. *Ibid.* 3:12a.
53. *Ibid.* 3:17b. See also JSBM 135:9b–10a.
54. *Ibid.* 3:18b–19a. See also Gong Chun 1998, pp. 66–7.
55. The chronology of the Medical School is as follows: The government established the Medical School in the ninth month of 1103. On the first month of 1106, an instruction came down to close the schools of literature, calligraphy, mathematics, and medicine and to attach them to the existing schools of the Directorate of Education. The reasons for these actions are not detailed in the records (SHY

- zhiguan* 28:17a). In the second month of 1107, an order came down to reopen the Medical School (SS 20:377). In 1110, an edict was issued that medical students should enter the Imperial Medical Service, and to discontinue the Medical School (SS 20:384 and 157:3687; JSBM 135:9a). In the fourth month of 1113, an order came down to reestablish the Medical School (SS 21:391; SHY *zhiguan* 22:38b). In the first month of 1115, branches of the Medical School were to be established in various prefectures (SS 21:394; SHY *chongtu* 3:17b. See also JSBM 135:9b). In 1117, the Medical School was transferred under the authority of the Ministry of Rites (*Libu* 禮部) (SHY *chongru* 3:21a). In 1120, the Medical School in the capital was abolished. We have records claiming that local branches of the Medical School continued to exist (JSBM 135:10a; SHY *chongru* 3:26a).
56. SS 157:3885; SHY *chongru* 3:13b.
 57. SHY *chongru* 3:12b–13b. For further discussion, see Zhang Ruixian 1989, p. 41.
 58. SHY *chongru* 3:12b–13b. See also Liang Jun 1995, p. 101. For additional information on medical examinations in general, see Needham 1970, pp. 340–78; an updated version appears in Needham 2000, pp. 95–113. For examples of typical questions and answers used in medical examinations during the Song dynasty, see *Taiyi ju zhuke chengwen* 太醫局諸科程文, compiled by He Daren 何大任, sometimes after 1191.
 59. SHY *chongru* 3:14a–14b.
 60. These titles were also long associated with eunuchs and inner-court staff. These titles were not considered “regular bureaucratic post” 職事官 and commanded rather low political respect.
 61. SS 169:4059. For further discussion, see Zhang Ruixian 1988, pp. 40–1; Yi Buyang and Yi Tian 1982, pp. 61–2. For further discussion of medical titles and their ranks, see Miyashita 1967, pp. 134–5.
 62. SHY *zhiguan* 36:102a.
 63. The combination of the two characters 儒醫 does not appear in any official history until the *History of the Yuan Dynasty*, where it appears twice. The CB and the *Zizhi tongjian* also do not include this compound. Although surviving records do not state that applying the term *ruyi* to graduates of the Medical School was a new policy, the appearance of such an innovative and compelling reference to physicians could not, in my mind, have arisen accidentally. According to Needham (2000, p. 42) this term became popular when well-educated scholars turned to study medicine during the Yuan and on to the Ming dynasties. Hymes (1987, pp. 64–6) claims that it was the diminishing number of opportunities to teach that was crucial in leading scholars to become a *ruyi*. However, based on the two following quotations it seems that this term was invented during Huizong’s reign and its impact was not immediate.
 64. SHY *chongru* 3:14b–15a.
 65. See Chen Yuanpeng 1987, pp. 186–7.
 66. SHY *chongru* 3:20b.
 67. See Zhang Ruixian 1990, pp. 23–4. For further discussion on the various titles of doctors following the Song, see Chao Yuan-ling 1995, chapter 3, esp. pp. 174–7.
 68. SDZLJ 224:864. The latter three books are considered the most important texts of Daoism.
 69. Gong Chun 1998, p. 64; SHY *chongru* 4:10b–11a.
 70. For details on Daoism during the Song dynasty, see Skar 2000, pp. 413–63.
 71. Twitchett (1966) provides an analysis of the Fan clan’s involvement with charity.
 72. SS 178:4338–4339. According to the CB (199:4841), the date of the edict is actually 1063, the last year of emperor Renzong’s reign. Similar date appears in the *Songchao shishi* 宋朝事實, 15:5b (SKQS edn).
 73. *Ibid.*

74. CB 108:9919–9920. See also Hucker 1985, p. 288.
75. *Fan Wenzheng gong ji* (SBCK edn).
76. *Penetrating the Book of Changes*, chapter 7 by Zhou Dunyi, in Chan 1969, p. 468.
77. This aspect of intervention has been researched and discussed by T. J. Hinrichs. She has shown that the Song government went out of its way in an attempt to reform the people's beliefs and customs, especially those of south China, in order to conform with the government's standards. See Hinrichs 2003, especially chapters 2–4.
78. *Nenggai zhai manlu* 13:6A–B.
79. Song editor's preface to the *Huangdi zhenjiu jia yi jing*, SYQYJK, p. 218.
80. *Gujin yitong daquan*, vol. 1, *juan* 3 翼醫通考(下), p. 8a (p. 449 of the modern reprint).
81. For comprehensive discussion on the role of Confucian ideology with relation to medicine, see Xu Yiming 2000 and 2002; He Shengdi 1999.
82. See Porter 1993, p. 1232.
83. The term “Poorhouse System” is adopted here since it seems that the Song government, and Huizong in particular, conceptualized a system made of three different and specialized institutions.
84. SDZLJ 186:680.
85. Huizong is using here the characters of the institutions in reverse order to show their meaning and functions.
86. SDZLJ 186:681.
87. See additional edicts recorded in the SDZLJ *juan* 186. Scogin (1978, pp. 32–4) claims that Huizong's government established a new system of welfare institutions referred collectively under the term Poorhouse System 居養法.
88. There is a distinction between two terms when referring to poorhouse, *fa* 法 and *yuan* 院. According to Scogin (1987, p. 33) the former refers to a system or approach, while the latter implies the existence of a specific facility. Prior to 1106 the term “Poorhouse System” 居養法 was used as a general term meaning either the system or the facility depending on whether the relief functions of the facility were listed or not. From 1106 the term Poorhouse 居養院 was used for the facility (SHY *shihuo* 68:132b).
89. The imperial agency of the Left Out of Favor Funerary Park 漏澤園 does not appear in Hucker 1985. For clarity I follow the title “Paupers' Cemetery” proposed by Scogin 1987.
90. SHY *shihuo* 68:128b and 130a–b.
91. CB 503:7a. See also Song Jiong 2000, pp. 75–6.
92. SHY *shihuo* 68:132b–133b.
93. *Ibid.* 68:137a. For metric conversion, see Wu Chengluo 1937, p. 61.
94. Scogin 1987, pp. 33–4.
95. SHY *shihuo* 68:130 or SHY *shihuo* 60:3b. See also Leung 1987, p. 136. For further discussion regarding Su Shi's relief efforts, see Kondō Kazunari 1986.
96. For details on Wu Juhou, see Chang Bide *et al.* 1974, vol. 2, p. 1152.
97. This name was proposed but never adopted in practice (SHY *shihuo* 68:130a).
98. *Ibid.* 68:129B
99. For further discussion on cognation in early China, see Leung 2004.
100. *Song shi* 19:365.
101. *Chunyou Linan zhi* 7:133.
102. SDZLJ 186:680–681. This edict in almost the same wording also appears in the SHY *shihuo* 68:130b–131a.
103. SHY *shihuo* 68:132a.
104. Physicians who lost no more than 20 percent of their patients were rewarded according to the numbers of patients they treated in a year: if over 1,000, they

- received a Monastic Certificate 度牒; if over 500, fifty strings of cash; if over 200, twenty strings of cash. A physician who treated 1,000 patients and lost no more than 10 percent would receive a special bonus (see Gong Chun 1998, p. 43. SHY *shihuo* 68:131b and 68:138a–138b).
105. Scogin 1978, p. 35.
 106. SHY *shihuo* 68:130b.
 107. Scogin 1978, p. 35.
 108. SHY *shihuo* 68:130b.
 109. *Ibid.* 68:132a.
 110. *Ibid.* 68:130b, 168:133b.
 111. For further details regarding the excavated Paupers' Cemetery, see Sanmen xiashi wenwu gongzuodui 1999. The original discovery is outlined by He Zhenghuang 1966, pp. 53–4.
 112. SHY *shihuo* 68:131b.
 113. *Ibid.*
 114. SDZLJ 186:681.
 115. SHY *shihuo* 68:135a; trans. adapted from Scogin 1978, p. 40. Scogin provides additional information about the prevalence of corruption in the system (pp. 40–1).
 116. This type of activist statecraft is discussed extensively in Hymes and Schirokauer 1993.
 117. *Sheng ji jing*, p. 9; SYQYJK pp. 797–8; ZGYJTK pp. 2209–10.
 118. Wu Ti's annotation of the preface, *Sheng ji jing*, p. 15.

Chapter 3

1. SS 178:4338.
2. At first glance it might seem that the imperial government established the Bureau in 1057 to complement the expanding medical education and examination system by revising and printing new medical literature (see Chen Yuanpeng 1997). However, a closer observation shows a more complicated picture. If indeed the Bureau's goal was to complement the education system, then it should have been established twenty years earlier, during the 1040s, when that system was set up. The 1060s certainly show an expansion of the medical education system, but this does not explain the establishment of a unique institution for revising medical literature, nor does it explain the particular selections of medical literature it published.
3. Cold Damage Disorders is a pathological term used by traditional Chinese physicians when diagnosing and treating epidemics. It actually refers to a wider cohort of diseases which in Western medical terms would correspond to certain exogenous, acute, infectious, febrile disorders characterized by rapid onset and progression, and liable to lead to the death of the patient if not treated. Naturally, epidemics and highly contagious diseases are included in the Cold Damage Disorders category (Sivin 1987, pp. xxiv–xxv). Another important issue regarding the definition of Cold Damage Disorders must be mentioned: in Chinese medicine there are actually two different definitions of "Cold Damage," although medical texts prior to the Song often tended to confuse them. The first, "general" definition corresponds with the Western definition of acute infectious febrile disorders. It includes a number of specific disease names, all of which arise, according to Chinese medicine, from the detrimental effects of the cold weather of the winter and evolve differently. The second, "narrow" definition refers only to a particular subset, namely, those diseases which manifest themselves in the winter but not in other seasons. When the disease progresses differently – that is, manifests itself in other seasons, a different name is

attached to each manifestation, such as “warm disorder” (*wenbing* 瘟病) in the spring and “hot disorder” (*rebing* 熱病) in the summer. For a broader perspective on the history of Cold Damage Disorders, see Ye Fazheng 1995.

4. For a discussion of the textual history of the *Treatise*, see Ma Jixing 1990, pp. 110–32.
5. For further discussion on these long-term transformations see Goldschmidt 2005.
6. McNeill 1976.
7. Excerpted from the *Oxford English Dictionary Online* (Oxford: Oxford University Press, 2003).
8. For further information on SARS see, Koh *et al.* 2003, and Xie *et al.* 2004.
9. For studies on epidemics in China during specific dynasties, see Fan Ka Wai 1997, for the period from Han to Tang; Twitchett 1979, for the Tang dynasty; Dunstan 1975, for the Ming dynasty; Benedict 1996, for the late Qing dynasty; and Zhang Zhibin 1990 for a broad historical survey. Katz 1995 provides a discussion of epidemics from socio-religious perspective.
10. The data in Table 3.1 actually shows two changes in the numbers of Cold Damage-related texts, one during the transition between the Tang and Song and another between the periods before and after 1065. As a matter of fact, the first change – an increase to 7.6 publications per century during the early decades of the Northern Song – represents an even greater increase in magnitude compared with the previous period (0.6, 0.7 publications per century). However, since none of the eight texts mentioned survived, and due to the limited information about them in extant historical sources, there is little to work with, let alone draw conclusions about this change. Therefore, although it is intriguing, I leave it unexplained.
11. Based on Okanishi’s work (1969), I analyzed the records of medical books belonging to acu-moxa therapy and drug therapy. I found that the numbers either did not change radically or even decreased during the period analyzed, as can be seen in the following table:

	<i>Northern Song</i>	<i>Tang</i>	<i>Pre-Tang</i>	<i>Total pre-Northern Song</i>
Acu-moxa texts	19	47	42	89
Materia medica collections, <i>Shennong</i> genre	9	6	9	15
Materia medica collections, non- <i>Shennong</i> genre	35	27	60	87

12. Such names include Heat Disorders (*rebing* 熱病), Warm Febrile Disorders (*wenbing* 瘟病), Summer Heat Disorders (*shubing* 暑病), Warm Febrile Epidemics (*wenyi* 瘟疫), and Cold Epidemics (*han yi* 寒疫).
13. We would expect to see a similar increase in the *New History of the Tang* since it was also compiled during the eleventh century, but we do not find it. One explanation might be that the original Tang dynasty records did not show anything that would have enabled the Song editors to introduce this terminology. This was not the case with the *History of the Five Dynasties*, since its older version already included at least one reference to Cold Damage.
14. See Zhang Zhibin 1990, Liang Jun 1995, pp. 92–94. Zhang’s data is also presented in Ma Boying 1994.

15. It is important to note that neither of the above data sets is exhaustive. I tried to cover the sources more thoroughly, but since I relied mostly on central government data collections the reliability of my data is also far from complete. For further discussion about the problems of recording epidemics and their implications with regard to population, see Hymes 1997.
16. *Shuowen jiezi*, 7 下:15b (modern reprint p. 156).
17. Some scholars claim that there is one reference to *yi* in the *Huangdi neijing suwen* (see Guo Aichun 郭霏春 edn reprint, 1992, vol. II, p. 1203). However, this reference is found in one of the so-called “lost” chapters, not in the core text. The quotation is: “The Yellow Emperor said: I heard that when the various epidemic disorders (五疫) arrive they spread easily. No matter how big or small [the patient], the symptoms are similar.”
18. See *Guoyu cidian* (online dictionary), as well as Luo Zhufeng *et al.* 1990–1995 *Hanyu dacidian*, vol. 8, pp. 287, 337.
19. *Shuowen jiezi*, *juan* 7 下:13b (modern reprint p. 155).
20. Sivin 1987, p. 286. One exception is the digital version of the *Guoyu cidian*, which also defines *li* as epidemic. This is not the primary definition, however. The Six Excesses – wind, cold, heat, moist, dry, and fire – are manifestations of climatic change in the realm of nature over the four seasons. Under normal conditions they are called the “Six Climatic Configurations” (*liuqi* 六氣), but when abnormalities appear they can become causative factors in medical disorders (Sivin 1987, p. 275).
21. Volkmar 2000, p. 149.
22. See Dunstan 1975, Imura Kōzen 1936.
23. See Twitchett 1979.
24. I got acquainted with some of these sources while reviewing secondary studies, including Liang Jun 1995, pp. 92–4; Feng Hanyong 1994, pp. 12–6; Liu Boji 1974, pp. 281–6.
25. The epidemics listed in Table 3.3 are arranged chronologically. For each record I provide the source, the place where the epidemic occurred, and the Chinese term denoting the epidemic. The information presented should be viewed as a rough estimate of the distribution of the actual events. In order to present the data in a visual form, I partitioned the table into nine twenty-year intervals (marked by a line), starting in 960, the date the Song dynasty was established, and ending in 1140, thirteen years after the fall of the Northern Song dynasty.
26. Although this period extends beyond the span of the Northern Song, it is included in the analysis to show the impact, if any, of the dynastic rout that led to the break-up of the empire.
27. I chose this division over a division into ten-year intervals to avoid the resulting cumbersomeness. It must be conceded that if we arrange the epidemics by the ten-year division, the spike as shown in Figure 3.1 will not be as noticeable.
28. See Table 3.3. In her PhD dissertation T. J. Hinrichs has raised doubts about two records during these fifteen years, claiming that they record either the same epidemic, or none at all (Hinrichs 2003, pp. 141–2). I tend to disagree with this, but even if these are records of the same epidemic the perception of the government and of the emperor was still there, since when they received the reports they had no way to determine whether it was a new epidemic or not.
29. For further discussion on the Mandate of Heaven see Creel 1979, pp. 367–80; Graham 1989, esp. pp. 111–36.
30. See Bielenstein 1950.
31. Emperors instituted new reign periods to mark a new beginning in their policies, often on the occasion of an auspicious astronomical sign or a glorious event such as a military victory, and always as an affirmation of the sovereignty of

- the ruler. In many cases we find that when emperors implemented new policies they did so after having inaugurated a new reign period. For further discussion, see Wilkinson 1998, pp. 176–9.
32. It should be kept in mind that the *History of the Former Han* is different from the *History of the Song* in a number of ways that have a direct bearing on an analysis on Bielenstein's lines. First, when Ban Gu 班固 compiled the *Han shu*, belief in portents was much stronger than in later times. Second, the *Han shu* is the product of a single author, whereas the *Song shi* is the end result of a complex and continuous bureaucratic process in which officials and historians assembled the dynastic record for posterity year by year and reign by reign (Twitchett 1979, pp. 40–2).
 33. Examining Figure 3.3, we see that during the period 1041–1048 only two epidemics were recorded over eight years (one every four years), whereas in the following reign period (1049–1054) three epidemics are recorded over five years (one every twenty months).
 34. For more information on that conflict and on the political landscape of the Northern Song, see Bol 1992, Chaffee 1995, and Liu 1988.
 35. For detailed analyses of economic change during the Song see Hartwell 1962, 1967 and 1982, Elvin 1973, Haeger 1975, Shiba 1970, and Ma 1971.
 36. SYQYJK, p. 668.
 37. SS 12:231.
 38. *Ibid.* 12:241.
 39. *Ibid.* 178:4338.
 40. *Ibid.* 178:4338; *Linchuan xiansheng wenji* 臨川先生文集, 84:883; YH 63:23B. CB 163, 3917. The *Qingli shanjiu fang* contains a well-known prescription against epidemics and *gu* 蠱 poisoning formulated by a famous doctor from Fuzhou 福州, Lin Shiyuan 林士元.
 41. *Wenxian tongkao* 文獻通考, 223:1797a (Academia Sinica database edition). See also SYQYJK, p. 729 and YH 63:23B–24A.
 42. The author is probably referring to incomplete editions of the *Huangdi neijing suwen* and *Zhu bing yuan hou lun* 諸病源候論.
 43. SYQYJK, p. 668.
 44. According to Hucker (1985, p. 436), the title “Palace Secretary” was in use during the Tang dynasty, but not afterwards. However, in this context it seems more suitable to use this translation than the title “Military Affairs Commissioner,” which Hucker claims applied during the Song dynasty.
 45. *Guang ji* (compiled around 723) was the title of a formulary compiled by a Tang dynasty physician named Li Longji 李隆基 (fl. 712–756). This book did not survive.
 46. CB 186:5B.
 47. See Wan Fang 1982, and Zhang Ruixian 1988, pp. 5, 8–10.
 48. The two overseeing directors of the Bureau were Qian Xiangxian 錢象先 and Fan Zhen 範鎮. Their other positions were the Grand Masters for Closing Court (*chaosan dafu* 朝散大夫). For further details see CB 198:4789; the preface to the Bureau's edition of the *Treatise* as it appears in SYQYJK, p. 352; and the preface to the Bureau's edition of *Essential Prescriptions Worth a Thousand* (*Beiji qianjin yao fang*), *ibid.*, pp. 605–6. Also, see Zhen Zhiya 1994, p. 214.
 49. Zhang Yuxi, who served as chief editor, held the titles of Auxiliary in the Academy of Scholarly Worthies (*zhi Jixian yuan* 直集賢院) and Examining Editor (*jiantao* 檢討) in the Institute for the Veneration of Literature (*Chongwen yuan* 崇文院); Lin Yi, who served as sub-editor (*jiaoli* 校理), was Chief Minister of Imperial Entertainment (*guangluqing* 光祿卿) and Auxiliary (*zhi* 直) in the Imperial Archives (*bige* 秘閣); Zhang Dong, who acted as proofreader (*jiaokan* 校勘), held the titles of Aide (*cheng* 丞) in the Palace Administration (*dianzhong*

- 殿) and Sub-editor in the Imperial Archives; and Su Song, who served as editor (*jiaozheng* 校正), was an Erudite (*boshi* 博士) at the Chamberlain for Ceremonial (*taichang* 太常) and a Sub-editor at the Academy of Scholarly Worthies (*Jixian* 集賢). See CB 186:5b and Li Yun 1988, pp. 546, 867, and 318.
50. See Li Yun 1988, p. 546. It must be conceded that it is difficult to know who among these officials was or was not a physician, since at that time many literati, some serving as officials in non-medical posts, had been trained as physicians via a master–disciple relationship. For the purpose of this study, officials are considered as physicians only if they occupied certain bureaucratic medical positions, if they had passed through the imperial medical education system, or if their official biography designated them as a physician.
 51. For further biographical information see He Shixi 1991, vol. 2, p. 204 and vol. 1, p. 232. It seems that these two physicians were taken on to aid in the compilation of the materia medica collections. The Hanlin Academy was established in 738 and its members soon gained governmental importance as palace counselors for the emperors. See preface to the Bureau’s edition of the *Jiayou Materia Medica* (*Jiayou bencao*), in SYQYJK, pp. 1212–13. For more information on the titles, see Hucker 1985, p. 223.
 52. See SYQYJK, pp. 5–6.
 53. *Zhizhai shulu jieti* 直齋書錄解題, 13:371–2.
 54. Shang Zhijun *et al.* 1989, Zheng Jinsheng 1982.
 55. Actually the Bureau published eleven texts, but two of these are different versions of the *Essential Prescriptions Worth a Thousand*.
 56. As the name indicates, the *Illustrated Materia Medica* included drawings of all the listed drugs. A need to standardize drugs and unify their knowledge was probably the motivation behind the addition of drawings to the text.
 57. For the sake of clarity, I did not allocate a special category to the two formularies, the *Essential Prescriptions* and the *Arcane Essentials*, since I wanted to stress their connection to Cold Damage Disorders.
 58. Preface to the Bureau’s edition of the *Basic Questions* (*Su wen*), in SYQYJK, p. 16.
 59. Wan Fang 1982, p. 48; Liang Jun 1995, pp. 83–4.
 60. Liao Yuqun *et al.* 1998, p. 302.
 61. SYQYJK, p. 129, preface to the official Song edition of the *Canon of the Pulse* 宋刻脈經牒文.
 62. SYQYJK, pp. 1216–17.
 63. In order to make the translation less cumbersome I have omitted the official titles supplied in the text. See SYQYJK, p. 1214.
 64. Two of the formularies were indeed revised by the Bureau, indicating their importance. However, we should keep in mind that they also included sections on Cold Damage Disorders.
 65. See SYQYJK, p. 352 (preface to the *Treatise*) and p. 630 (preface to *Qian jin yao fang*). The specific wording may differ among the prefaces, but the notion stays the same.
 66. That they were the directors is suggested by their titles as they appear at the end of the Song preface to the *Qian jin yao fang*.
 67. For Gao’s biography see SS 288:9684.
 68. Guo Xiumen *et al.* 2003, p. 34. See also Chang Bide 1974, vol. 3, pp. 1758–9.
 69. Gao Wenzhuang is another name for Gao Ruone; see Zhou Yixin *et al.* 2004, p. 38. The quotation is from Guo’s self-preface to his *Shanghan buwang lun* 傷寒補亡論, in SYQYJK, p. 462.
 70. See *Mingchen beizhuan yuanyan zhi ji*, 6:18a.
 71. See *Bishu luhua*, 上:21.
 72. Guo Xiumen *et al.* 2003, p. 36.

73. Some scholars date the first reference to this type of disorder to the Shang dynasty (1766–1122 BCE). Others date it to the Warring States period (403–221 BCE), based on a record of the term in the *Classic of Mountains and Seas* (*Shanhai jing* 山海經). However, these records do not convey the same meaning as the later medical category of Cold Damage Disorders. For further discussion see Wan Xiaogang 1995, p. 89 and Ye Fazheng 1995, pp. 1–4.
74. The Six Warps (named after the lengthwise threads in weaving) represent a three-fold division of yin and yang – immature yin 少陰, mature yin 太陰, attenuated yin 厥陰, immature yang 少陽, mature yang 太陽, and yang brightness 陽明. Originally, in the *Inner Canon*, the Six Warps are aspects of the cyclic process of *qi* circulation. In the *Treatise* (third century CE), the Six Warps came to represent the six stages of penetration of the Cold Damage Disorder into the body. Thus, the Six Warps served in the *Treatise* as the basic manifestation type for diagnosis.
75. The common name of the text in contemporary times is *Shanghan lun*, which includes only a part of the original text that focuses on Cold Damage Disorders. Since the original text was lost soon after its compilation and that various incomplete editions have circulated until the Song, I will refer to all of these editions as “the *Treatise*” to simplify the discussion. It should be noted that in some historical records the *za* 雜 character in the *Treatise*’s title was mistakenly written as *zu* 卒.
76. For further biographical details on Zhang Ji, see Li Yun 1988, pp. 449–50 and He Shixi 1991, vol. 2, pp. 664–84. When discussing the term “South” in China we have to understand its context. The “South” changed from dynasty to dynasty as the population shifted from the traditional North to the more fertile, agriculturally richer, and less populated South. Changsha is located, actually, in what we consider at present to be Central China, not the South.
77. See preface to the *Treatise*. I used the text in SYQYJK, pp. 350–1 and *Song ben shanghan lun*, p. 2.
78. See Sivin 1987, p. 85 (n. 45).
79. Ma Jixing 1990, p. 110. It should be noted that a controversy exists over whether the section about pulse diagnosis was originally compiled by Zhang Ji or added by the first editor, Wang Shuhe, or even later, during the Song dynasty.
80. *Shanghan lun*, sections 1–2, 4. The translation is taken from Sivin 1987, p. 86.
81. Wang’s given name was actually Wang Xi 王熙. However, most sources refer to him by his style name, Wang Shuhe. For further discussion on Wang’s role in revising the *Treatise* see Ma Jixing 1990, p. 114 and Ye Fazheng 1995, pp. 28–9.
82. Ma Jixing 1990, p. 114.
83. Given the scarcity of sources it is difficult to determine the extent of circulation with certainty. However, since we have only a single piece of evidence mentioning an incomplete version of the *Treatise* in Sun Simiao’s account, I assume that the book was generally out of circulation. Ma Jixing 1982 and Huang Huang 1989 reach similar conclusions. See also Ma Jixing 1990, pp. 117–21 and Ye Fazheng 1995, p. 53.
84. See chapters 9 and 10 in the *Essential Prescriptions Worth a Thousand* 千金要方.
85. Ma Jixing discusses in his work which sections of the *Treatise* survived in a number of Tang dynasty texts. This indicates that physicians knew about the existence of the *Treatise* but could not obtain the complete text. Therefore they only included bits and pieces that were available to them at the time. See Ma Jixing 1990, pp. 117–23.
86. See Qian Chaochen’s 1994 reconstruction of the Tang edition of the *Treatise* (*Tang ben shanghan lun* 唐本傷寒論).
87. *Tang hui yao*, chapter 82, pp. 1524–5.

88. Ma Jixing 1990, p. 118–21.
89. For complete biographical details on Gao, see Chang Bide *et al.* 1974, vol. 3, pp. 1768–9 and Zang Lihe 1921, p. 893. Ma Jixing (1990, p. 123) claims that Gao was the last ruler (*mozhu* 末主) of the Jingnan state (*Jingnan guo* 荆南國), but I found no support for this claim.
90. See Preface to the Song edition of the *Treatise*, where the editors voiced this criticism (SYQYJK, pp. 352–3). It seems that in addition to criticizing Gao, there is a veiled criticism against the government officials who ignored the text and did not revise and publish it.
91. It is unclear which version the authors used, but some scholars claim it was Gao Jicheng's. See Ma Jixing 1982, p. 2 and Qian Chaochen 1990, p. 23.
92. Ma Jixing 1990, p. 123. Some scholars, such as Ma, state that the compiler of this formulary probably used Gao's edition of the *Treatise* as the basis for this section. Others, such as Ye Fazheng (1995, p. 54), claim that it was an independent edition of the text.
93. Lin Yi's preface to the *Canon of the Golden Casket and Jade Case*, in SYQYJK, p. 375.
94. The *Treatise's* greatest impact may be due to its title, which retained half of the original title. It is possible that the Song editors thought that this was indeed the most authentic version, and therefore entitled it the *Treatise*, the other two receiving different titles.
95. Lin Yi's preface to the *Canon of the Golden Casket and Jade Case*, in SYQYJK, p. 375.
96. This book, according to some scholars, is a modified version of the original *Treatise*. It was revised and given a different name because it was based on another ancient fragment of the *Treatise* transmitted to the Song. The latter is supposedly the second part of the original *Treatise*, focusing on miscellaneous diseases and Cold Damage Disorders in women and children. For further discussion, see Ma Jixing 1990, pp. 124–32.
97. See Ma Jixing 1990, pp. 124–5. An additional version of the *Treatise* available today is an early eleventh-century Japanese version, entitled *Kōhei shōkanron* 康平傷寒論, which predates the Song revision.
98. SYQYJK, pp. 352–3.
99. *Ibid.*, p. 352 (preface to small-font edition of the *Treatise*).
100. See preface to the *Treatise*, *ibid.*, p. 353. That so many prominent officials signed the preface to the *Treatise* was probably designed to show unequivocally that the Imperial Government thought it was an important, if not essential, canon.

Chapter 4

1. The Chinese character *bing* 兵 is ambiguous. It can mean either 'soldiers' or 'weapons'. The meaning of the sentence, however, does not change radically if one meaning of the word is used and not the other. Since the author does not provide any hint which one he intended to use, I chose to translate *bing* as soldiers since a general would more likely deploy soldiers.
2. SYQYJK, p. 1228. This book is discussed below. Lin Xi was registered in Fujian. He passed his *jinsshi* examination in 1057. He died during the reign of emperor Huizong (1100–1126) at the age of sixty-seven. See Chang Bide *et al.* 1974, pp. 1339–40.
3. Important materia medica collections and formularies are listed in Tables 4.1 and 4.2 at the end of this chapter.
4. For further discussion, see Unschuld 1986 and Shang Zhijun *et al.* 1989. The majority of drugs originated from plants, followed by animals and minerals. For example, the great materia medica of the Ming dynasty, *Systematic*

- Materia Medica* (*Bencao gangmu* 本草綱目, compiled in 1596), included 1,892 drugs of which 1,173 from plants (62 percent), 444 from animals (23 percent), 275 from minerals (15 percent) (Bensky and Gamble 1993, p. 5).
5. Shi Jigang 史繼剛 1994, pp. 103–7.
 6. SYQYJK pp. 1190–4. See also Schmidt 2006, Unschuld 1986, pp. 28–43 and Needham 1986, pp. 308–21.
 7. Sivin, 1987, pp. 179–80. It is important to note that this does not apply to drugs from animal or mineral origin, since the concentration of their active ingredients do not fluctuate according to seasons.
 8. Preface to *Illustrated Materia Medica*, as it appears in SYQYJK, p. 1216.
 9. The *Tang Materia Medica* is also referred to as the *Revised Materia Medica* (*Xin xiu bencao* 新修本草). A group of twelve scholars and physicians, headed by Su Jing 蘇敬, compiled the text following an imperial edict in 659. This was the first materia medica collection commissioned by an imperial government in the history of China.
 10. Liu Han, being a medical official, represented the official *bencao* tradition, whereas Ma Zhi, being a Daoist priest, represented more popular, unofficial, privately compiled materia medica collections.
 11. The three physicians were Wu Fugui 吳復圭, Wang Guangyou 王光祐, and Chen Zhaoyu 陳昭遇. See SYQYJK, p. 1210, quoting from YH 63:19b–20a, and the preface to *Jiayou Materia Medica* as it appears in SYQYJK, pp. 1213–4. See also biographies of Liu Han and Ma Zhi in SS 461:13505 and 13506, respectively. For modern secondary sources, see Shang Zhijun *et al.* 1989, pp. 44–6, 204–6; Zheng Jinsheng 1982; and Unschuld 1986, pp. 55–60.
 12. The *Gleanings of Materia Medica* was compiled by a Tang official – Chen Cangqi 陳藏器. The *Materia Medica with Notes on Pronunciation and Meaning* was compiled by Li Hanguang 李含光 (683–769).
 13. See Shang Zhijun *et al.* 1989, pp. 45–6, 204–6 and Zheng Jinsheng 1982.
 14. At this point it is important to note that the only Song-dynasty materia medica to survive – the *Classified Materia Medica*, compiled in 1082–1098 – included, in the customary manner, all the information recorded in the earlier materia medica collections as a foundation upon which the author added his own data. In other words, earlier materia medica collections survived since they were embedded in the *Classified Materia Medica*. Contemporary scholars reconstructed the earlier materia medica collections on the basis of this information, including the *Kaibao Materia Medica*.
 15. Preface to the *Kaibao bencao*, SYQYJK, p. 1211.
 16. *Ibid.*
 17. For further discussion on changes in print culture during the Song, see Chia 2002.
 18. Preface to the *Kaibao bencao*, SYQYJK, p. 1211.
 19. The unique printing of this work, using different character sets for each layer of earlier texts, for example “full” (regular) and “empty” (white characters on black background) characters, enabled scholars in imperial China as well as contemporary scholars to reconstruct the earlier versions of materia medica collections. In pre-printing era, writers or editors of materia medica collections used black and red ink to distinguish between contemporary commentary and ancient sections.
 20. Preface to the *Jiayou Materia Medica*, as it appears in SYQYJK, pp. 1212–13.
 21. *Ibid.*
 22. *Ibid.*
 23. *Ibid.*
 24. The most important collections they consulted were *Shu (Sichuan) Materia Medica*, *Gleaning of Materia Medica*, *Materia Medica of the Master of Rihua Temple* (*Rihua zi bencao* 日華子本草), *Discussions on the Nature of Drugs*

- (*Yaoxing lun* 藥性論). See Shang Zhijun *et al.* 1989, pp. 47–9, 206–10 and Zheng Jinsheng 1982.
25. The Preface to the *Jiayou Materia Medica* indicates that 1,082 drugs were included in the work (see SYQYJK, pp. 1212–13). However, a few contemporary scholars claim that the number is actually either 1,083 (Zheng Jinsheng 1982 and Shang Zhijun *et al.* 1989) or 1,084 (Okanishi 1974). I follow the former, namely 1,083.
 26. Su Song was not a physicians but a scholar-official with broad horizons on scientific inquiry. He served as a paramount Grand Councilor during the last part of the reaction against Wang Anshi's New Policies (1092–1093). His areas of interest covered astronomy, geography, and medicine. In 1088, a group he headed completed a great water-driven astronomical clock incorporating an escapement device. For further discussion, see Su Kefu *et al.* 1991, especially pp. 1–30, 102–16, and 205–9.
 27. In the original text the characters for Cnidium are 鼈床 but they should be 蛇床.
 28. Preface to *Illustrated Materia Medica*, as it appears in SYQYJK, p. 1216.
 29. *Ibid.*, p. 1214.
 30. *Ibid.* See also p. 1217.
 31. *Ibid.*
 32. For detailed analysis of the organization of *Illustrated Materia Medica*, see Shang Zhijun 1990, pp. 210–4.
 33. SYQYJK, pp. 1215–6.
 34. For a discussion on the bronze model and how it served to standardize acu-moxa therapy, see Chapter 1, above.
 35. SYQYJK, pp. 1128–9.
 36. Chen Cheng was a well-known physician during his time, famed especially for his application of cooling drugs. He was born in Sichuan province but did most of his work in Zhejiang province.
 37. Shang Zhijun *et al.* 1989, p. 215.
 38. SYQYJK, p. 1229.
 39. Okanishi (1969, 1974) records additional materia medica works, which could have been published prior to Chen's work; however, none is as comprehensive and based on the official materia medica publications.
 40. Tang was born in Jinyuan 晉原 (present-day Chongqing, Sichuan). Later, during the Yuanyou reign period (1086–1093) he moved to Chengdu and lived there the rest of his life. For a more detailed discussion, see Shang Zhijun 1993, especially pp. 5–6 and Li Yun 1988, p. 765.
 41. Taken from the colophon to Tang Shenwei's materia medica written by Yuwen Xuzhong as it appears in SYQYJK, pp. 1229–30. For information about Yuwen Xuzhong see Chang Bide *et al.* 1974, p. 559.
 42. For detailed discussion about the sources, see Shang Zhijun *et al.* 1989, p. 220.
 43. Most historians attribute 1098 as the date when Tang finished his work. However, one source claims that Tang finished an initial version of the book in 1082. For detailed discussion of the topic, see Ma Jixing 1990, p. 276.
 44. For biographical information on Ai Sheng, see He Shixi 1991, vol. 1, pp. 175–6.
 45. For biographical information on Cao Xiaozhong 曹孝忠, see He Shixi 1991, vol. 2, pp. 594–5.
 46. An important feature of this edition is the fact that it incorporated part of the innovative materia medica collection by Kou Zongshi, *Dilatations on Materia Medica* (*Bencao yanyi* 本草衍義), published in 1119 and discussed below. For additional details, see Shang Zhijun 1993, pp. 3–5.
 47. For detailed discussion, see Shang Zhijun *et al.* 1989, pp. 49–51, 216–22, Zheng Jinsheng 1983, and Shang Zhijun 1993. One puzzle still unsolved is the variance between the number of drugs discussed in Tang's original manuscript and the number included in the published version.

48. Zheng Jinsheng 1982, p. 205 quotes Wang Ji's 王繼 criticism. For the complete commentary, see SYQYJK, pp. 1276–7.
49. See Shang Zhijun *et al.* 1989, pp. 49–51, 190–3, 216–22 and Shang Zhijun 2002, pp. 470–84.
50. One of the books that Tang relied on is *Lei Gong's Discussions on Drug Preparations* (*Leigong bao zhi lun* 雷公炮炙論), presumably compiled by Lei Xiao 雷斅. Ma Jixing (1990, pp. 268–9) follows the common understanding and dates the book to the Former Song dynasty (420–479). However, a more recent article claims that the books should be dated to late tenth or early eleventh century (see Zhu Yaping 1992).
51. SYQYJK, p. 1235. At the end of the description Ai is alluding to the legend about how Emperor Shen Nong, who is attributed with writing the first materia medica, became familiar with the characteristic of drugs.
52. Li Yun 1988, p. 834–5. As part of his job Kou was responsible for purchasing drugs for the Imperial Pharmacy.
53. SYQYJK, p. 1223. Apparently, its original title included the character *guang* 廣 instead of *yan* 衍. The title changed in 1195. See Shang Zhijun *et al.* 1989, p. 239.
54. We do know that Kou Yue came from Jie zhou 解州 (present-day Shanxi province). Thus, it will be safe to assume that Kou Zongshi came from the same place.
55. Wan Fang and Lu Xichen 1987, p. 34. See also Unschuld 1986, pp. 85–6.
56. *Bencao yanyi*, chapter 1, p. 4.
57. *Ibid.*, chapter 5, p. 29.
58. Preface to *Bencao yanyi*, p. 6 and p. 5. Kou quotes from the *Suwen*, chapter 3, which discusses preventive medicine and the notion of treating the non-sick.
59. *Yi shou*, vol. 1, 3:41–2. For biographical information on Zhang Gao, see He Shixi 1991, vol. 2, p. 649.
60. The Imperial Pharmacy appears in historical records under several titles as detailed below. For the sake of simplicity, whenever I discuss this institution I will refer to it as the Imperial Pharmacy or simply as the Pharmacy.
61. The pellet is composed of the following ingredients: realgar (*xionghuang* 雄黃), radix curcuma aromatica (*yujin* 郁金), and fructus crotonis (*badou* 巴豆).
62. The word “pharmacy” is sometimes confusing and has more than one meaning. According to the *Oxford English Dictionary*, the word pharmacy has four meanings. The relevant two for our case are, “The art or practice of collecting, preparing, and dispensing drugs, especially for medicinal purposes; the making or compounding of medicines; the occupation of a druggist or pharmaceutical chemist,” and “A place where medicines are prepared or dispensed; a drug-store or dispensary.” The dictionary actually gives two additional definitions which are not important to our discussion, since they do not focus on the practice of selling drugs: “A medicine or medicinal potion,” and “The use or administration of drugs or medicines.”
63. The Pharmacy was the first institution devoted to controlling drug prices as well as to preparing and selling drugs to the general public. Before 1076 and prior to the Song dynasty there were other medical institutions devoted to provide medication to the Palace. For example, the Palace Medical Service (*Shangyao ju* 尚藥局) which served the throne and the high officials or the Medical Service in the Secretariat of the Heir Apparent (*Yaozang ju* 藥藏局) which served the heir apparent and his entourage. It is obvious that these offices were not designed to serve the general populace except, maybe, during times of major catastrophes such as epidemics, when they dispensed medications to the people. The Pharmacy differed from these earlier institutions in many ways and hence its uniqueness.

64. I chose to translate the term, *heji*, which literally means “harmonious prescriptions,” as pre-packaged preparations differently to make the meaning more comprehensible to the modern reader. Pre-packaged preparations. These are medications ready-made for consumption that cannot be modified, similar to present-day medicines. These pre-packaged forms include for example powders (*san* 散), pellets (*wan* 丸), ointments (*gao* 膏), and potions (*yin* 飲). Formulas recorded in formularies as recommended treatment for medical disorders, on the other hand, are often adjusted by doctors to meet the specific needs of the patient.
65. Smith 1993, p. 77.
66. For further information on Wang Anshi, see Teng Ssu-yu 1989; Liu 1959.
67. See Smith 1993, pp. 84–8; and Bol 1992, pp. 249–50. For further discussion on the economic policy of the Song dynasty and particularly the notion of “engrossers,” see Oberst Zhihong Liang 1996.
68. SHY *shihuo* 37:14a.
69. Hucker 1985, p. 426.
70. There are conflicting records regarding the exact date in which the imperial government established this office, which is the precursor of the Pharmacy. One record of the SHY claims that the pharmacy was established in the ninth year of the Xining reign period, 1076 (SHY *zhiguan* 27.12), while another claims that it was established in the ninth year of the Qingli reign period, 1049 (SHY *zhiguan* 22.35). The source of the disagreement lies probably in a copying error since the Qingli reign period has only eight years and not nine.
71. Another title of the Pharmacy was the *Huimin ju* 惠民局, literally the Office of Benefiting the People (Liang Jun 1995, p. 86). Liang claims that the government intention was to consolidate the existing bureaus dealing with production and sale of drugs into one office. The earlier offices were the Storage of Prepared Medications (*Shuyao ku* 熟藥庫) and the Office of Combining Drugs (*Heyao suo* 合藥所).
72. Tang Tingyan 2001, p. 83.
73. *Huimin yaoju ji*. This one-page text by Shen appears also with only minor changes in *Guixin za zhi* by Zhou Mi, pp. 423–4.
74. SHY *zhiguan* (74), 27.42.
75. CB 289:10b; *Qing bo zazhi jiaozhu*, p. 12.
76. CB 297:3b.
77. *Tiewei shan congfan*, 6.85; *Qing bo zazhi jiaozhu*, p. 515.
78. Frederick Mote provides figures claiming that the government income during 1086 was 48 million strings of cash (Mote 1999, p. 117). In comparison, Tang Tingyan claims that the total state income was 60 million strings of cash (Tang Tingyan 2001, p. 85). For discussion of the Spice and Alum Monopoly data, see Worthy 1975, pp. 111–13.
79. *Qing bo zazhi jiaozhu*, p. 515.
80. Unschuld 1986, pp. 239–51.
81. Fan Xingzhun 1943, 1: 37–8. One of the earliest visual evidence of such a practice is depicted in the famous twelfth-century painting, *Going up the River on the Qingming Festival* (*Qingming shanghe tu*). At the far left part of the painting, we see the physician’s stall and his private pharmacy.
82. The information on drug quotas of various regions recorded in *Yuanfeng jiuyu zhi* is summarized in chapter 10 of the *Bin tui lu*; see also Shi Jigang 1994, pp. 103–4.
83. SHY *zhiguan* 27.1b; SHY *li* 17.87b.
84. SHY *zhiguan* (72), 22.38a, SHY *zhiguan* (74), 27.15b, and SHY *shihuo* 59.5–6. Additional examples when the Pharmacy dispensed drugs to battle epidemics occurred in 1123 (SHY *zhiguan* 36.97), 1138 (SHY *shihuo* 59.21), 1146 (SHY *zhiguan* 36.104), 1164–65 (SHY *shihuo* 59.41), and 1167 (SHY *shihuo* 60.14).

85. The new title of the drugstore is almost identical to the earlier title with the addition of one character *chu*. This addition, however, does not change the meaning. The new titles of the offices are recorded in a SHY edict (*zhiguan* 27.21–22) published a decade later. The *Qing bo zazhi jiaozhu* (p. 525) records the names of the factory and the drugstore as the *heji* 和劑 and *maiyaosuo* 賣藥所, respectively.
86. SS 165.3907; *Tiewei shan congtao* 6.85.
87. SHY *zhiguan* (74), 27.17b.
88. For just a sample of records see *Yingchuan jun zhi*, compiled by Chen Lian in 1413 (block print edition), p. 3; *Taiyuan fu zhi*, compiled by Zhang Shenyan in 1612 (block print edition), p. 6; and *Suzhou fu zhi*, compiled by Lu Xiong between 1368–1398 (block print edition), p. 92. I am grateful to Joseph Denis for providing me with the data concerning the Ming gazetteers. Leung (1987, pp. 137 and 160) lists a number of gazetteers discussing the pharmacy and also provides a map depicting the state of pharmacies in Jiangnan region in 1566. Only further research into the contents of local gazetteers will fully reveal the prevalence of the pharmacy as well as other medical institutions at the local level.
89. *Huizhou fuzhi*, vol. 1, pp. 180–1.
90. SHY *zhiguan* 27:19b–20a.
91. Wan Fang and Lu Xichen 1987, p. 33.
92. SHY *zhiguan* 27:21–2; SS 165:3907–9.
93. SHY *zhiguan* 27:21.
94. Goldschmidt 2006, pp. 275–323.
95. Wan Fang and Lu Xichen 1987, p. 33.
96. SS 165.3907.
97. SHY *zhiguan* 36.97.
98. SHY *zhiguan* 27.66.
99. YH 63.25a; SHY *zhiguan* 27.67.
100. Wan Fang and Lu Xichen 1987, p. 34.
101. *Jin shi*, 5.103.
102. *Taiping huimin hejiju fang*, preface, Okanishi 1969, pp. 774–5.
103. *Junzhai dushu zhi*, vol. 2, p. 299.
104. *Ibid.*, pp. 774–5.
105. For information on Chen Cheng and his two collaborators, Pei Zongyuan and Chen Shiwen, see He Shixi 1991, vol. 2, pp. 415–16; vol. 3, pp. 121–2; vol. 2, pp. 462–3, respectively.
106. The formulary of the Imperial Pharmacy appears in different sources by various titles; the most common are: *Taiping huimin hejiju fang* 太平惠民和劑局方, *Ju fang* 局方, or *Hejiju fang* 和劑局方.
107. Ma Jixing 1990, p. 177.
108. Ma Jixing 1990, p. 177–8.
109. SHY *shihuo* 60.9b and 68.140a.
110. These sources include official histories, private histories, various *bi ji* compilations, and local records.
111. *Bencao yanyi*, 4.23, 5.27–28, 5.34.
112. *Jufang fahui*, 1.942.
113. See Goldschmidt 1999, esp. chapter 4; Zhang Ruixian 1988.

Part II Introduction

1. See Siraisi 1999, Lindemann 1999.
2. The most obvious example has to do with the internal visceral system of functions. The *Inner Canon* does not even provide a definite number of *zang* and *fu* viscera and carries a controversy regarding some of them, namely what is the *sanjiao*

- 三焦 and whether the *mingmen* 命門 is a viscera or not. Sivin (1987) provides additional examples; see pp. 39–40, 124–7, 156–9, 166–7.
3. The early classics were compiled during or shortly after the Han dynasty. These canons consisted of: *Yellow Emperor's Inner Canon* (first or second century BCE), *Canon of Problems* (first or second century CE), *Canon of the Pulse* (280 CE), and “A–B” *Canon of the Yellow Emperor* (256/282 CE).
 4. The term they proposed in these canons was the “three regions (of the body) and nine positions of pulse taking” (三部九候). For further discussion see Sivin 1987, pp. 173–4.
 5. For an extensive discussion on how Chinese philosophy solves conflicts among different currents of thought, see Bodde 1981, pp. 237–98.
 6. For complete discussion of the topic, see Sivin 1995d.

Chapter 5

1. In this chapter, the term “*Treatise*” refers to the original work by Zhang Ji (or Zhang Zhongjing) of the third century CE. The term “*Song Treatise*” refers to the newly revised Bureau’s edition of the original *Treatise*, published in 1065.
2. In my discussions in this chapter, I limit myself to physicians educated either by the imperial system or by means of master–disciple relationship. I base my analysis on records made by these physicians or regarding them.
3. SYQYJK, pp. 352–3; *Song ben shanghan lun*, p. 1.
4. The imperial government did not actively impose the practice suggested in the *Treatise*. However, in Chinese culture, once the government revised a text and regarded it as a classic, physicians, especially the educated ones who served as officials, and people who passed the imperial civil service examination, were expected by their patients to demonstrate knowledge in the field and apply the recommended treatments.
5. We possess today approximately thirty-five Northern Song medical books. The number of extant prefaces to Song medical books is larger, providing us with information about the contents of these lost books and the context of their compilation. Additionally, we have various official records about medical education, official and private biographies of physicians, and accounts of medical cases in the official histories and other various writings of the Song. Unfortunately, most of these records do not include detailed accounts recorded by physicians or patients.
6. In Chinese medicine the doctor questions his patient for his symptoms as well as additional information regarding his living environment, habits, and preferences. The pulse and the tongue serve as the objective data to go along with the intake from the patient.
7. *Shanghan jiushi lun*, p. 10 (*Gegen Tang zheng* 葛根湯證).
8. *Ibid.*, p. 13 (item #26 *Dengmu zhishi zheng* 瞪目直視證).
9. *Bozhai bian* 泊宅編, 7:41.
10. In 992 the government published the largest formulary to that date, the *Imperial Grace Formulary*, which included a total of 100 chapters and 16,834 formulas. In 1122 the government published an even larger formulary, the *Medical Encyclopedia*, which included 200 chapters and roughly 20,000 formulas. See Table 4.2, above.
11. Zhang Lei served as the Assistant Magistrate in the Chamberlain of Ceremonials 太常少卿 during the reign of Huizong (1100–1126), see Li Yun 1988, p. 452. Chang Bide *et al.* (1974, pp. 2232–3) record Zhang’s dates as 1054–1114.
12. *Shanghan zongbing lun*, p. 206.
13. *Bei ji qian jin yao fang* (Sun Simiao’s *Essential Prescriptions Worth a Thousand*) also discusses contagious diseases but, as mentioned in Chapter 4, above, chapters that focus on this topic are mainly copied out of the *Treatise*.

14. The term Southern China is misleading. Traditionally until the Song dynasty, the center of political power and the majority of the population were located around the Yellow River in northern China. Gradually, more and more people moved to the south and consequently the frontier region shifted southward. Changsha is located in present-day central China. However, during the Han dynasty it was at the south of the empire. Oddly enough, in generations following the Northern Song, physicians often complained that the *Treatise* included only formulas treating northern disorders and none for the south – see *Junzhai dushu zhi*, p. 864, and Ye Fazheng 1995, p. 65.
15. In contrast, the Bureau's officials, editing the *Basic Questions*, corrected numerous errors and added many lines of annotation to the text. See Lin Yi's preface to the *Basic Questions* as it appears in SYQYJK, pp. 16–17.
16. Li Jingwei *et al.* 1988, p. 756.
17. The total number of Cold Damage books compiled during this era was twenty-four (see Table 3.1).
18. For discussion on the examination system and its impact on Song society, see Chaffee 1995.
19. For an overview of the topic, see Ebrey 1988.
20. The best example of this trend is probably Shen Gua. See Sivin 1995b.
21. Xia Wenzhuang was the posthumous title of Xia Song 夏竦 (985–1051). Pang Zhuangmin was the posthumous title of Pang Ji 龐籍 (988–1063). For further biographical information on these two officials, see Chang Bide *et al.* 1974, vol. 3, pp. 1807–08 and vol. 5, pp. 4253–55.
22. *Shilin yan yu* 石林燕語, 10:151.
23. SYQYJK p. 394.
24. The two prefaces are to the *Treatise* and to the *Essential Prescriptions Worth a Thousand*.
25. SYQYJK, p. 375.
26. See Carter 1925, pp. 55–70 and Ji Shaofu 1991, pp. 74–103.
27. Qian Yi, also known as Qian zhongYang 錢仲陽, was a Song-dynasty physician from Dongping, in Yun prefecture, Shangdong Province. For further biographical details, see He Shixi 1991, vol. 3, pp. 315–18.
28. *Shanghan wei zhi lun*, 2:23.
29. Prior to the Song, these categories (later defined as Six Warps 六經), though classifying manifestation types, did not have any linkage to the manifestation types of Classical Medicine. Consequently, the *Treatise* was incompatible with the classical medical literature.
30. Han Zhihe's biographical information is so limited that even his name appears in two variations. Sometimes it appears as Han Zhihe 韓祗和, which seemingly is the most common one. However Han's name is sometimes written as Han Qihe 韓祗和 (Cao Dongyi and Wang Wenzhi 2001, p. 12). For further discussion on Han's problematic biographical information, see He Shixi 1991, vol. 3, p. 363 and Cao Dongyi 1990, p. 48.
31. *Zhizhai shulu jieti*, 13:374.
32. It is plausible to assume that Han's book survived in a private collection and somehow ended in the imperial archives sometime between the fall of the Song and the establishment of the Ming dynasty. For information on Han's original book, see Li Yun 1988, p. 865. The work on the *Yongle Great Encyclopedia* was completed in 1408. For more details, see Wilkinson 1998, pp. 165–6.
33. *Shanghan wei zhi lun*, p. 1.
34. Han's discussion regarding the tracts in *juan* 1, p. 1-1 (CSJC edn) is very brief. It correlates the Three Yin-Three Yang categorization to the six circulation tracts of the leg and the six of the arm. Han's conclusion is that those of the leg are more important since they are the ones affected during winter. In other words,

- he attributes almost no importance to those of the arm. Later physicians, such as Zhu Gong, paid much closer attention to the topic and constructed a more comprehensive integration (see below).
35. This is an open debate and it is unclear if the information on pulse diagnosis existed in the original *Treatise* or was added later. Following Ma Jixing's analysis, I presume that Cheng Wuji added the two sections on pulse diagnosis to his fully annotated *Treatise*, around 1140. However, a point to consider is that the names of the two sections of the Han Zhihe's text are identical to those of the Song *Treatise*. For further discussion, see Ma Jixing 1982, and Ma Jixing 1990, pp. 110–17, 123–30.
 36. *Shanghan wei zhi lun*, p. 3.
 37. *Ibid.*, p. 5.
 38. *Ibid.*, p. 2.
 39. *Ibid.*, p. 9.
 40. For further biographical information, see He Shixi 1991, vol. 3, pp. 420–4.
 41. Like many doctors of his time, Pang received his education from his elders in the family and from private tutors, not as a student at the Imperial Medical Service.
 42. SS 462:13520–2. See also Tao Yufeng *et al.* 1988, pp. 123–5.
 43. *Shanghan zongbing lun*, pp. 2–3.
 44. Zhang Songcheng *et al.* 1993, pp. 23–5.
 45. *Shanghan zongbing lun*, pp. 1–2.
 46. SYQYJK, p. 401.
 47. *Shanghan zongbing lun*, pp. 3–4.
 48. *Ibid.*, 5:121.
 49. *Ibid.*, p. 2.
 50. For further biographical information, see He Shixi 1991, vol. 1, pp. 217–20.
 51. This book survived to the present. In some collections it appears as *Zhu Gong's Canon of Wine* 朱肱酒經 or *The Northern Mountain's Canon of Wine* 北山酒經.
 52. For detailed discussion of Zhu Gong's life and work, see Zhang Songcheng *et al.* 1993, pp. 50–62.
 53. Originally from *Yixue yuanliu lun* 醫學源流論 (活人書論), p. 117. See also SYQYJK, p. 417.
 54. *Leizheng huoren shu*, p. 1.
 55. See Zhang Songcheng *et al.* 1993, pp. 19–20 and also modern editor's introduction to the reprint of the *Leizheng huoren shu*, pp. 1–4.
 56. See Zhang's preface to Zhu's in *Leizheng huoren shu*, preface, p. 1 or as it appears in SYQYJK, pp. 421–2.
 57. According to traditional Chinese history Zhang Ji helped the people of Nanyang. Consequently, another famous physician, Hua Tuo 華佗, named the *Treatise* the “book of saving lives.” Thus Zhang Chan gave Zhu's book a title including references to these two legendary physicians, applying the common practice of drawing on earlier sages to attain authority (see Zhang's preface to the book, p. 1). During the last decades of the Ming dynasty editors of the book added fragments from another medical work and titled this compilation *Book of Classified Manifestation Types for Saving Lives* (*Leizheng huoren shu* 類證活人書). See the modern publisher's introduction to Zhu's book.
 58. Zhang's comment is recorded in the preface to Liu Wansu's 劉完素 book *Suwen xuan ji yuan bing shi* 素問玄機原病式, see SYQYJK, pp. 78–82, 415.
 59. This quotation is taken from Zhu's own preface, see *Leizheng huoren shu*, preface, pp. 1–2. Also see SYQYJK, p. 412.
 60. *Leizheng huoren shu*, 22:199.
 61. The character *jing* 經 has many other meanings in Chinese. One of the most common is a canonical text. The circulation tract system also serves as an external representation of the internal viscera.

62. *Leizheng huoren shu*, preface, p. 1. See also SYQYJK, p. 421.
63. *Leizheng huoren shu*, 1:1.
64. *Ibid.*
65. *Ibid.*, 1:2–10.
66. *Ibid.*, pp. 11–14. The tract system of the body is an external representation of the internal viscera. This is the means by which acu-moxa therapy affects the internal physiology.
67. *Ibid.*, chapter 3, p. 27.
68. *Ibid.*
69. Even though Jiangsu may not be considered as south China. Zhen prefecture was at the southernmost tip on the Yangzi River. Since it falls in the Yangzi delta I consider it as south. For further biographical information, see He Shixi 1991, vol. 2, pp. 542–5, and Chen Kezheng 1989.
70. Zheng Songcheng 1993, pp. 50–1.
71. SYQYJK, pp. 443–4.
72. *Ibid.*
73. In China it was a common practice to rhyme text in order to make it easy to memorize. Another example for this genre of medical literature is the *Rhyming Text of Pulses* (*Mai jue* 脈訣) compiled by Cui Jiayan 崔嘉彦 during the years 1174–1189.
74. SYQYJK, p. 417.
75. *Shanghan fa wei lun*, 2:1.
76. See *Shanghan fa wei lun*.
77. Medical case histories existed in Chinese writings prior to this text but the authors were mostly non-doctors. These medical case histories were recorded mainly in official histories and in private compilations. Although not titled *yi'an* 醫案, namely “case histories,” a term that became common in later periods, the cases in Xu’s book are definitely case histories. For further discussion, see Cullen 2001, pp. 297–323.
78. *Shanghan jiu shi lun* (Xu Shuwei, *Ninety Discussions on Cold Damage*), pp. 5–6 (item #9). Quoted from *Three Works on Shanghan lun by Xu Shuwei* (Xu Shuwei’s Xu Shuwei shanghanlun zhu san zhong 許叔微傷寒論著三種). Shanghai: Shangwu yinshu guan, 1956.
79. *Shanghan bai zheng ge*, p. 4.
80. See Zhang’s preface to the *Treatise* as it appears in SYQYJK, pp. 350–2.
81. *Song ben shanghan lun*, p. 47, #93.
82. See Chapter 1, above.
83. For further biographical information see He Shixi 1991, vol. 1, pp. 379–81.
84. See postscript to *Shanghan mingli lun*. These dates do not agree with the conventionally accepted dates of his birth between 1060 and 1068. These dates are important for two reasons. The first involves the years in which he published his texts. According to the accepted dates they were compiled in 1142 or 1144. However, given the new dates of birth and consequently death, these dates must be placed earlier. For further discussion see Li Yuqing 1997; Li Jingwei *et al.* 1988, p. 113; Li Yun 1988, pp. 142–3.
85. SYQYJK, p. 364, line 3. For biographical data regarding Wang Ding, see Chang Bide *et al.* 1974, vol. 1, p. 194.
86. Cheng did not annotate the other parts of the original *Treatise* published by the Bureau.
87. Ye Fazheng 1995, p. 268.
88. These references add up to 54 percent of the total references in Cheng’s annotation.
89. These references add up to 37 percent of the total references in Cheng’s annotation. The above data is borrowed from Ye Fazheng 1995, p. 267.

90. *Zhu jie shanghan lun*, p. 59.
91. SYQYJK, pp. 363–4.
92. *Shanghan mingli lun*, p. 1.
93. This text is included, in some editions, as the fourth and last chapter of the *Discussions on Clarifying the Principles of Cold Damage*.
94. The details he provides include the yin–yang nature of the drug, which of the five savors is associated with it, and which of the four categories of formula preparation 君臣佐使 the drug occupies.
95. Liu Wanshu 劉完素 (~1120–1200), also known as Liu Shouzhen 劉守真 or Liu Hejian 劉河間, was a Jin-dynasty (1115–1234) physician from Hejian, Hebei province. When Liu was twenty-five years of age he focused his studies on the *Inner Canon*. He studied the text for many years and it became the basis for his medical practice. He presented his new exposition of medical knowledge and practice in his book titled *Profound Model of Disease Origin According to the Basic Questions* 素問玄機原病式. In this book he used all the existing commentaries of the *Suwen* volume of the *Inner Canon*, materia medica collections, and the *Treatise on Cold Damage Disorders*, to compile a new text integrating ancient and contemporary knowledge to delineate the origin of diseases.

Chapter 6

1. SYQYJK, p. 1229, preface to the *Expanded Materia Medica* (see Chapter 4).
2. *Ibid.*, p. 1235, preface to the *Daguan Materia Medica* (see Chapter 4).
3. *Bencao yanyi* 2:12. For alternative translation see Unschuld 1986, p. 99.
4. *Ibid.* 2:16. This remark by Kou Zongshi was not unique. It exemplifies a new rhetorical tack by physicians. Elsewhere in his book, Kou voices similar criticism; see *Bencao yanyi* 1.8 and 2.13. Other examples can be found in the preface to the *Medical Encyclopedia* (*Zhenghe sheng ji zong lu* 政和聖濟總錄, see below), and in Xu Shuwei's three works on Cold Damage Disorders.
5. In contemporary literature, this text is often referred to as *Beneficial Medicinal Formulas of Su and Shen* (*Su Shen liangfang* 蘇沈良方). For additional bibliographical material, see Sivin 1995b, third selection, pp. 47–8. Although Su Shi's 蘇軾 (1036–1101) name appears in the book's title, it seems unlikely that he and Shen collaborated, since it is hard to find two more contradictory figures, coming as they did from two opposite sides of the Song social and philosophical spectrum. It is safe to assume that Shen was the compiler of the text. Later editors probably added Su's name to the title and a few medicinal formulas associated with him to the contents of the book to provide the text additional authority.
6. *Su Shen neihan liangfang*, preface, pp. 1–2. See also SYQYJK, pp. 731–3.
7. Shen's reference to antiquity should be understood in Chinese terms. In using the term antiquity, Shen alludes to mostly the clinical application of the classical doctrines. In his book, he mentions the underlying doctrines only briefly and focuses on the desirable clinical procedures.
8. *Sheng ji jing*, p. 8; SYQYJK, pp. 797–8; ZGYJTK, pp. 2209–10.
9. After the fall of the Han dynasty in 220 CE, physicians rarely had access to medical canons. Instead, the number of clinical manuals, mostly formularies, increased and this genre became more prominent. These manuals, stressing the clinical aspect of medicine, rarely included information about the doctrines of Classical Medicine.
10. The four projects took place roughly during the years 970–990, 1026–1035, 1057–1065, and the 1090s. The main ancient medical texts are: the *Yellow Emperor's Inner Canon*, the *Yellow Emperor's Canon of Eighty-one Problems*, the “A–B” *Canon of the Yellow Emperor*, and the *Pulse Canon*.

11. *Bencao yanyi*, p. 4–5.
12. The Four Methods of Examination in Chinese medicine are: Interrogation, Visual Inspection, Auditory and Olfactory Examination, and Palpation (*wang, wen, wen, qie* 望聞問切).
13. See Ye Xianchun 1980, Wu Yanfang 1990, and Li Zhongwen 1981.
14. For further discussion, see Unschuld 1986, pp. 89–90.
15. *Bencao yanyi*, 16:101.
16. *Ibid.*, 15:98 and 9:60, respectively.
17. *Ibid.*, 10:65.
18. It is unclear whether Huizong only commissioned this book or, as certain records claim, actively participated in the compilation process. See *Sheng ji zong lu*, preface; SYQYJK, pp. 797–8; Zhao Pushan 1984.
19. *Sheng ji zong lu*, preface; SYQYJK, pp. 797–8.
20. *Ibid.*
21. It is safe to assume that Huizong had an impact on the contents of the *Medical Encyclopedia*, as is evident from the first two chapters discussing the *Yunqi* doctrine (see below).
22. Nathan Sivin, “Ailment and Cure in Traditional China” (unpublished manuscript).
23. The term *yunqi* is actually a fusion of a longer term – *wuyun liuqi* 五運六氣. Manfred Porkert has translated *yunqi* as “Phase Energetics” (Porkert 1974, pp. 55–6). This is not the best translation for this doctrine, since it does not imply its transformational aspect. As with my decision not to translate the term *qi*, I decided to leave this term in its original Chinese form.
24. The ten celestial stems are in turn divided into five yang and five yin, and the twelve terrestrial branches into six yang and six yin.
25. There are six modalities in this subdivision of yin and yang, namely Mature Yin 太陰, Immature Yin 少陰, Attenuated Yin 厥陰, Mature Yang 太陽, Immature Yang 少陽, and Yang Brightness 陽明.
26. For further explanation of the system and how it works see Despeux 2001, Quan Yijing and Li Minting 1987.
27. Sivin 1993, Keegen 1988, Yamada 1979.
28. What most scholars agree on is that during the Song, Jin, and Yuan dynasties interest in the *yunqi* doctrine peaked. (Despeux 2001).
29. Shen may be alluding to notions we define as macrocosm, i.e., grand principle, and further in the *yunqi* quotation to microcosm, i.e. small principle. I prefer the more literal translation without inserting our terminology to the text.
30. *Meng qi bi tan* (SKQS edn), 7:14b. Catherine Despeux 2001 provides a slightly different translation for this passage (p. 140).
31. *Meng qi bi tan* (SKQS edn), 7:15b–16a.
32. He Shixi 1991, vol. 3, pp. 246–7.
33. Chapters 66–71 and 74, see Unschuld 2000, pp. 39–58, especially pp. 46–8.
34. For complete discussion of Huizong’s impact on medicine, see Goldschmidt 2006.
35. There is very limited information regarding Wu Ti besides the fact that he annotated the book, and was originally from Shaowu 邵武 in Fujian 福建. For further information, see He Shixi 1991, vol. 1, p. 405, and the introduction to the 1990 reprint of the *Sheng ji jing*, p. 4.
36. Okanishi in SYQYJK classifies it as a drug therapy text. Zhang Canjia (1998, pp. 105–6) classifies it as belonging to what I define as Classical Medicine.
37. See Qiu Hongzhong 1993.
38. Here Huizong is alluding either to the general doctrines of antiquity or, more likely, to the title of the first chapter of the *Huangdi neijing suwen* 黃帝內經。素問, titled *shanggu tianzhen lun* 上古天真論.
39. The original text has the character *rong* 榮 instead of *ying* 營. However, given the fact that this character is followed by the characters *weiqi* 衛氣, it seems that

- the correct character should be *ying*. Similar claim appears in Wang Li 2000, p. 509; Li Jingwei *et al.* 1995, p. 1041.
40. Literally, the sentence should be translated as, “I studied the prosperity and decline of the seven and eight.” The seven and eight age concept appears in the *Suwen* volume of the *Inner Canon* 1:9–13. There, Qi Bo, the emperor’s advisor, explains to the emperor the changes in a person’s body over a lifetime for both females and males. For the former the increments are of seven years and for the latter of eight years. It is important to note that the *Inner Canon* presents the ages as multiples of seven and eight, namely two times seven, three times eight, etc.
 41. *Sheng ji jing*, p. 9; SYQYJK, pp. 797–8.
 42. *Ibid.* The translation is adapted, with slight changes, from an unpublished translation of the preface to the *Sheng ji jing* by Nathan Sivin.
 43. For further discussion of the clinical aspects of Huizong’s canon, see the modern editor’s introduction to the 1990 reprint of the *Sheng ji jing*, p. 2.
 44. Wu Ti who annotated Huizong’s canon comments on this sentence, saying: “The five *zang* are internal the six *fu* are external, there is yin there is yang, thus it is the yin and yang of the world” (*Sheng ji jing*, p. 177).
 45. *Ibid.*, p. 177.
 46. *Ibid.*, p. 179.
 47. SDZLJ 219.843.
 48. I am basing this claim on computerized search of the two texts using the digital database of Chinese medical works, *Zhonghua yidian* 中華醫典, Version 2.0, 2002.
 49. *Sheng ji zong lu*, *juan* 191, p. 3123.
 50. Zhao Pushan 1983, p. 54; Yan Shiyun 1993, pp. 9–13.
 51. Liao Yuqun *et al.* 1998, p. 318.
 52. *Leizheng puji ben shi fang*, preface, p. 83. See also SYQYJK, p. 845. Claiming to use “proven” remedies was not unique to Xu and we find such claims in many prefaces from this period; for example, SYQYJK p. 818.
 53. *Leizheng puji ben shi fang*, preface, p. 83. See also SYQYJK p. 845.
 54. *Ibid.*, *juan* 1, p. 91.
 55. Similar examples can be found on pp. 118 and 120 for the formulas 葶藶丸 and 四仙續斷丸 respectively.
 56. *Leizheng puji ben shi fang*, *juan* 1, p. 91.
 57. *Ibid.*, 3:107.
 58. *Ibid.*, 1:94.
 59. *Ibid.*, 2:100.
 60. The exact dates of Zhang’s birth or death are unknown and the above is only an estimate. For further biographical details, see Ding Guangdi 1999, pp. 176–91.
 61. *Yixue qiyuan*, preface, p. 12, SYQYJK, p. 967. See also *Jin shi*, 131:2812 – the biography of Zhang Yuansu.
 62. *Ibid.*
 63. *Zhongguo yiji kao*, 51:681.
 64. *Ibid.*, 3:24.
 65. *Jin shi*, *juan* 131, p. 2812.
 66. The six books that did not survive are: *Medical Formulas* (*Yi fang* 醫方), *Annotation of the Canon of Problems According to Drugs* (*Yao zhu nanjing* 藥注難經), *Diagnosis According to Zhang Yuansu* (*Jiegu jia zhen* 潔古家珍), *Zhang Yuansu’s Materia Medica* (*Jiegu bencao* 潔古本草), *Formulas for Child Delivery and for Preserving Life* (*chanyu baosheng fang* 產育保生方), *Formulas for Correcting Faults in Qian Yi’s Formulary* (*Bu que Qianshi fang* 補闕錢氏方).
 67. *Zangfu* is sometimes translated as organs. However, I prefer to follow Sivin’s translation (1987), “visceral systems of functions,” since it does not carry the weight of the term “organ” in Western culture and medicine.

68. For some reason, Zhang did not discuss the pericardium visceral system of functions. It is possible that the logic behind Zhang's decision has to do with the fact that it was a later addition to the system that originally included only eleven viscera. See Sivin 1987, pp. 125–7.
69. *Yixue qiyuan*, 1:14.
70. For further discussion on manifestation types, see Sivin 1987, pp. 109–11 and in contemporary practice, see Farquhar 1994, pp. 147–74.
71. The latter term, 主治, is often glossed as “the principle therapeutic effect of a drug” (see Luo Zhufeng *et al.* 1990–1995, *Hanyu dacidian*). However, given the structure of the sentence, the translation is ambiguous.
72. *Yixue qiyuan*, 3:51.
73. *Ibid.*, 3:48.
74. *Ibid.*, 3:53.
75. Zheng Hongxin 2006, pp. 91–5 and Ding Guangdi 1999, pp. 176–87.
76. *Yixue qiyuan*, 3:49–50.
77. For biographic detail, see He Shixi 1991, vol. 2, pp. 411–12.
78. *Sanyin jiyi bingzheng fanglun* 2.33
79. Unschuld 1977.

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Abbreviations

CB: *Xu zizhi tongjian changbian*

CSJC: *Congshu jicheng chubian*

JSBM: *Xu zizhi tongjian changbian jishi benmo*

SBCK: *Sibu congkan*

SDZLJ: *Song dazhaoling ji*

SHY: *Song huiyao jigao*

SKQS: *Yingyin wenyuange siku quanshu*

SS: *Song Shi*

SYQYJK: *Song yiqian yiji kao*, see under Okanishi Tameto 1969

YH: *Yuhai*

ZGYJTK: *Zhongguo yiji tongkao*, see under Yan Shiyun *et al.* 1990–1994

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