I. INTRODUCTION

1. The *Ben cao gang mu* Project

This is the third volume of a project aiming at providing better access to the *Ben cao gang mu* (*BCGM*) 本草綱目, China's great encyclopedia of pharmaceutical lore, first published in 1593 and designated a world cultural heritage text in 2012. In addition to the current volume, which focuses on identifying personal names mentioned and literary sources quoted in the *BCGM*, three others will complete the *Dictionary of the Ben cao gang mu*. They include the first volume, published in 2015, on "Chinese historical illness terminology," and a second volume, published in 2016, tracing all "geographical and administrative designations" mentioned in connection with the more than 1,900 pharmaceutically usable substances listed in the *BCGM*. A fourth volume will offer a historical survey of the identifications of all pharmaceutical substances mentioned in the *BCGM*.

The *BCGM* was composed over more than three decades from perhaps 1547 until 1580. Li Shizhen 李時珍 (1508–1593), who turned to his family tradition of medicine after failing the imperial exams required for entering the civil service, is traditionally named its sole author. In his preface, he mentions assistance provided by several family members. The sheer volume of about 1.6 million Chinese characters written to complete the fifty-one chapters of the *BCGM* suggests, though, the involvement of a team of collaborators exceeding the limited number of his family members. No information is available to identify the size of the team that collected all the data from a vast body of texts of all possible genres and wrote them down within a relatively short period.

Li Shizhen was a practicing doctor and lived at the end of the Ming 明 dynasty. By his time, China had largely turned its back on much of the outside world (with the exception of neighboring inner Southeast Asia) and entered a period of insular-

ity. The Zheng He 鄭和 (1371–1433) voyages that had explored the world of the Indian Ocean were long over and most maritime contact forbidden. Nevertheless, the *BCGM* reflects an era during which immense amounts of information were freely available, yielding a work as large as the *BCGM* with its more than two thousand medicinal monographs and appendices.

Li Shizhen and his coworkers excerpted data from the rich pharmaceutical literature of the previous 1,500 years and numerous other literary sources.[1] In addition, Li Shizhen included pharmaceutical knowledge he had obtained from practitioners and other contemporary sources during his travels throughout the Chinese empire. The current volume focuses on the *BCGM*'s textual sources and the people associated with them. Possibly because of the then-prevalent lack of a standardized approach to citing previously published literary works, users of the *BCGM* may feel themselves confronted with an often confusing inhomogeneity of designations chosen by the *BCGM* authors to refer to their textual sources. Also, as our research has shown, the authors not only occasionally quoted one work under different names in different sections of the encyclopedia but also not infrequently assigned quotes to sources different from the ones where the original wording had been taken from and where they may be found today. Such faults severely impede scientific consultations of the *BCGM*. The uninformed user may be misled as to where a certain quote is from and at what time it found entrance into medical-pharmaceutical literature.

Similarly, the *BCGM* authors referred to the same author differently in different sections, sometimes by providing only one of two, three, or four characters of the name, if not assigning an erroneous name to a quote in the first place. The many individuals mentioned, sometimes only once in an anecdote, sometimes as the authors of frequently quoted texts, may be sources of primary literary transmission, as when they describe their own research results and experience in their works. They may also be sources of a secondary literary transmission, when a later author relates a story or an experience associated with them. The broad gamut of persons named includes several well-known personalities and many for whom perhaps nothing more than the name is transmitted. Others can be identified by browsing the numerous bio- and bibliographical dictionaries available to Chinese studies today. With all of its book titles and personal names identified, the *BCGM* will be more easily used for scientific and other serious research than in the past. These names and titles will permit the reader to trace all statements on pharmaceutically used substances to their original literary sources, to orally transmitted anecdotes, and to the persons behind these sources and the transmission of their contents.

1 Paul U. Unschuld, *Medicine in China: A History of Pharmaceutics* (Berkeley: University of California Press, 1986). Hereafter cited as "Unschuld 1986."

2. The Two Conflicting Origins of Chinese Medicine and Pharmaceutics

The *BCGM* is the apex of the development of pharmaceutical literature in China. No other imperial-age (221 BCE–1911) work on *materia medica* prior to or following its publication gathered a comparable wealth of data on the therapeutic application of natural and human-made substances. The *BCGM* is the culmination of a *materia medica* literature that emerged at some time during the later Han 漢 dynasty and was expanded by numerous authors in the course of the following one and a half millennia.

A conceptualized system of healing based on systematic physiology and pathology grounded in a secular natural science had evolved in China beginning with the second century BCE. Its earliest documentation may be found in the *Huang Di nei jing* 黃帝內經 text corpus, including the *Su wen* 素問 and the *Ling shu* 靈樞, and the *Nan jing* 難經, a work drawing on a pool of writings that also left its traces in the *Huang Di nei jing* texts. A fourth text, the *Huang Di nei jing Tai su* 黃帝內經太素, is an annotated amalgamation, dating from the eighth century CE, of passages from the *Su wen* and the *Ling shu*.

The ancient classics of Chinese medicine mention pharmaceutical treatments, but only in passing. They thus fail to reflect the rich heritage of knowledge of the therapeutic potential of hundreds of herbal, animal, mineral, and human-made substances available at the time of the compilation of the *Su wen*, the *Ling shu*, and the *Nan jing*. The absence of available pharmaceutical drug lore from the earliest texts of conceptualized Chinese medicine is evidence of a deep gap that has existed in Chinese therapeutic practice for the past two millennia. This gap separated a health care based on secular science from an approach based on a more pragmatic realism. The former was conceptualized and employed not so much to cure disease as to assist in preventing it. The latter acknowledged disease as a natural and inescapable facet of human life. It focused on the means provided by nature to heal all types of illness.

Chinese conceptualized medicine started from the assumption, inherent in the doctrines of systematic correspondence, that natural laws exist. These laws rule all processes and phenomena in nature, independent of time, space, and persons, be they human or numinous. The doctrines evidencing this entirely secular and rational world view, explicitly setting it off from a belief in the workings of supernatural beings such as demons, spirits, gods, and ancestors, are known today as the yin-yang doctrine and the doctrine of the five phases. They convey an assertion that the maintenance of health is possible, if not guaranteed, if one lives in accordance with the laws of nature. The yin-yang and five phases doctrines offer guidance on how to adapt to the laws of nature and how to survive in a natural environment that is characterized by a constant repetition of mutual overcoming and revenge, of destruction and rebirth.

The political message of "law and order" implicit in early Chinese medicine stood in stark contrast to the notion underlying pharmaceutical therapy that disease—that

is, *luan* 亂, "disorder"—is basically unavoidable. One may use substances or physical exercises to strengthen one's body, but matter is doomed to rot, and the human body cannot escape this fate. Hence, sooner or later disease is a natural aspect of human life. Pharmaceutical knowledge is designed mostly to treat manifest disease.

No other realm in Chinese health care saw as dynamic an expansion as the literature on pharmaceutical recipes. Starting from fifty-two recipes preserved in the Ma wang dui 馬王堆 manuscripts of the second century BCE,[2] a maximum of about sixty thousand was reached in the *Pu ji fang* 普濟方, "Recipes for Universal Benefit," in the sixteenth century.

For more than one thousand years, from the Han dynasties well into the Song 宋 dynasties, the two medical approaches, respectively based on the doctrines of systematic correspondence and on pharmaceutical knowledge, developed in parallel, with virtually no mutual recognition. A sole exception may be seen in the work of Zhang Ji 張機, around 200 CE. He remained isolated, though, in his attempts to explain the effects of pharmaceutical substances on the human body on the basis of the doctrines of systematic correspondence.

Comprehensive attempts at including pharmaceutical knowledge in the secular science of systematic correspondence were initiated only beginning with the early twelfth century. Authors such as Kou Zongshi 寇宗奭 (fl. early twelfth c.) and Wang Haogu 王好古 (thirteenth c.) pioneered the introduction of a pharmacology of systematic correspondence into *materia medica* literature. Likewise, the names of Liu Wansu 劉完素 (1120–1200), Zhang Congzheng 張從正 (1156–1228), Li Gao 李杲 (1180–1251), and Zhu Zhenheng 朱震亨 (1281–1358) are inseparably tied to the emergence of pharmacological schools pursuing different etiological notions related to the application of pharmaceutical therapy.

The creative phase of a Chinese pharmacology based on the doctrines of systematic correspondence lost its momentum with the end of the Song–Jin 金–Yuan 元 era. Too many contradictions showed up between, on the one hand, the effects that a substance was supposed to have based on its parameters of flavor (*wei* 味) and thermoquality (*qi* 氣) and, on the other hand, the effects that practitioners observed in reality. The *BCGM* is the most voluminous example of a status quo eventually reached in *materia medica* literature. Hints at a theoretical explanation for the alleged therapeutic effects are found in quite a few substance entries, with references more often to the yin-yang than to the five phases doctrine. However, a lot of data on pharmaceutical substances, including their effects as individual drugs, and the approximately nine thousand pharmaceutical recipes are provided free of any theoretical justification or reference to the concept of *cong lei* 從類, that is, "like cures like," as, for instance, when a medication based on the stomach of an animal is used to treat the stomach illness of a human patient. The *BCGM* does not avoid demonological, exorcistical references, and not infrequently, chrononumerological notions appear in advice to collect and prepare substances at specific times and to ingest them in certain amounts, with the twelfth month and the number 7 given

2 Donald Harper, ed. and trans., *Early Chinese Medical Literature: The Mawangdui Medical Manuscripts* (London: Kegan Paul International, 1998).

special importance. Similarly, many of the several thousand therapeutic indications encountered in the *BCGM* (see vol. 1 of the *Ben cao gang mu Dictionary*) appear almost entirely unaffected by the yin-yang and five phases doctrines of systematic correspondence.

3. Chinese *Materia medica* Literature

The beginnings of Chinese interest in herbal, mineral, and animal *materia medica* to cure, control, and prevent disease are lost in prehistoric times. The recipe manuscripts unearthed in the early 1970s in the Ma wang dui tombs and since then in other locations, most recently the Lao guan shan 老管山 tombs, offer the earliest evidence now available of a rich lore concerning substances and their therapeutic effects and, most impressive, of a highly advanced pharmaceutical technology, the modification of items derived from nature to obtain drug forms suitable for internal and external application.

The earliest full text of *materia medica* that we have today, describing one individual substance after another with therapeutic indications and certain characteristics permitting identification and evaluation, is assigned to the Han era. It is known as the *Shen nong ben cao jing* 神農本草經, "Divine Farmer's Classic of Materia Medica." For centuries, mainstream *materia medica* texts included the full *Shen nong ben cao jing* and began their characterizations of substances with it.[3]

During China's medieval period (post-Han through Tang 唐), a time first of disunity and foreign invasion and then of a flourishing culture enriched by stimuli from outside during the Tang dynasty, the texts as transmitted became more complex. The corpus associated with the Daoist master Tao Hongjing 陶弘景 (456–536) is one example.[4] By his time, the search for longevity drugs was a major fertilizer of the expansion of Chinese pharmaceutical lore. A complicating ingredient was the arrival of Buddhist medicine in China.[5] It brought not only its humoral traditions but substantial Indian and Western *materia medica* as well, along with specifically Buddhist methods of treatment.

Following the entry of Indian and Buddhist elements, the Tang also saw the introduction of Middle Eastern *materia medica*. In some cases, pharmaceutical substances and theory were introduced by persons of Middle Eastern origin actually present in China. What resulted was a considerable enrichment of the Chinese tradition of *materia medica*, including one herbal largely devoted to Middle Eastern medicinals by an individual of Persian extraction.[6]

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3 See the discussion of this work in Unschuld 1986, 11–28.

4 Ibid., 28–44.

5 See C. Pierce Salguero, *Translating Buddhist Medicine in Medieval China* (Philadelphia: University of Pennsylvania Press, 2014).

6 Chen Ming 陳明, "The Transmission of Foreign Medicine via the Silk Roads in Medieval China: A Case Study of the *Haiyao Bencao* 海藥本草," *Asian Medicine, Tradition and Modernity* 3 (2007): 241–64.

In Tang times, the manuscript tradition of *materia medica* developed further, including the production of major texts such as the *Xin xiu ben cao* 新修本草, "Newly Revised Materia Medica," compiled by several authors and published in 659 in 54 *juan* 卷 with 850 drug monographs.[7] This was a large work. The text was still firmly rooted in the tradition of the *Shen nong ben cao jing* as revised by Tao Hongjing, but it was much broader than previous *materia medica* manuscripts. Also, for the first time in China, here was a text with illustrations of pharmaceutical substances.

More than any other dynasty, the Song sought to standardize texts of every kind, including medical ones.[8] Among the variety of original Song medical works, the most important are a series of official herbals. These include the *Kai bao xin xiang ding ben cao* 開寶新詳定本草, "Materia Medica Newly Revised in Detail during the *Kai bao* Reign Period," published by various authors in 973, in 21 *juan* with 983 monographs. A revised version with the same number of *juan* was written at the orders of the emperor as the *Kai bao chong ding ben cao* 開寶重定本草, "Rerevised Materia Medica of the *Kai Bao* Reign Period," and published the next year.[9] The *Jia you bu zhu shen nong ben cao* 嘉祐補注神農本草, "*Shen nong ben cao*, Supplemented and Annotated during the *Jia you* Reign Period," was compiled by various authors in 21 *juan* with 1,084 monographs and published in 1061.[10] The *Jing shi zheng lei bei ji ben cao* 經史證類備急本草, "Verified and Categorized Materia Medica for Emergencies, Based on Classics and Histories," was compiled by Tang Shenwei 唐慎微. His manuscript comprised 1,744 monographs in 31 *juan* and was completed between 1080 and 1107. It was officially published in 1108 in a much-expanded official version (but with the same number of chapters and monographs).[11] A further revision shortly thereafter became known as the *Jing shi zheng lei da guan ben cao* 經史證類大觀本草, "*Da guan* Reign Period Verified and Categorized Materia Medica, Based on Classics and Histories."[12] Also a major text was the *Zheng he xin xiu jing shi zheng lei bei yong ben cao* 政和新修經史證類備用本草, "The *Zheng he* Reign Period Verified and Categorized Materia Medica for Practical Use, Newly Revised and Based on Classics and Histories," a revision of the previous work in 30 *juan* with 1,748 monographs.[13] Another important Northern Song herbal, more specialized, was the *Tu jing ben cao* 圖經本草, "Illustrated Classic of Materia Medica," by Su Song 蘇敬 and others, published in 1062 in 21 *juan* with 634 drug monographs. As the title suggests, the emphasis was on illustrations; the drug descriptions came from the

7 Unschuld 1986, 44–45.

8 For an introduction to Song medicine see Asaf Goldschmidt, *The Evolution of Chinese Medicine: Song Dynasty, 960–1200* (London: Routledge, 2009).

9 Unschuld 1986, 55–58.

10 Ibid., 60–64.

11 Ibid., 70–71.

12 Ibid., 72–77.

13 Ibid., 77.

Xin xiu ben cao. This was the first text of its kind in Chinese history whose primary content was illustrations.[14]

Major Southern Song *materia medica* included still another version of Tang Shenwei's work, the *Chong xiu zheng he jing shi zheng lei bei yong ben cao* 重修政和經史證類備用本草, "The *Zheng he* Reign Period Verified and Categorized Materia Medica for Practical Use, Repeatedly Revised and Based on Classics and Histories," published in 1249 in 30 *juan* with 1,746 monographs.[15] It is profusely illustrated, and subsequently illustration became the standard rather than the exception.

By the time Li Shizhen began to assemble material for his encyclopedia, *materia medica* literature had vastly expanded beyond its original structure of an all-encompassing listing of substance descriptions, which reached from the early *Shen nong ben cao jing* through the great herbals of the Song era, when this main tradition ended. Over the centuries, numerous authors had introduced new formats. *Materia medica* literature came to include works focusing on one single substance, on the substances of one geographical region (such as the *Nan fang cao mu zhuang* 南方草木狀, "Forms of Herbs and Trees from the Southern Regions"), or on plants only. Some authors restricted their discussion to substances that served both as food and as medicinals, while others prepared handbooks with an emphasis on the pharmaceutical preparation of each substance. Works in verse helped students to memorize pharmaceutical texts; lists of secondary names enabled pharmacists, physicians, and users to cross terminological barriers among the many regions of China. In short, much more than conceptualized medicine relying on acupuncture and lifestyle, health care and disease management based on pharmaceutical therapy had continuously expanded its knowledge base and armamentarium. Such was the situation when Li Shizhen sat down with his team to compile the largest work ever in the premodern history of Chinese *materia medica*.

4. The Sources Cited

4.1. Materia medica *and Medical Texts*

When compiling the *BCGM*, Li Shizhen and his team relied on the major *materia medica* works described above, with most of their quotes taken from the *Jing shi zheng lei da guan ben cao* and the *Zheng lei ben cao* 證類本草. They also exploited rare and uncommon textual sources, at times including second-hand citations (sometimes not even cited correctly) of lost texts. Another important and common type of source for the *BCGM* was collections of recipes, some of which had been compiled with specific purposes in mind. There were many of these available. Among those used by Li Shizhen, works like the *Qian jin bei ji fang* 千金備急方, "Emergency Recipes Worth a Thousand in Gold," of Sun Simiao 孫思邈, and the *Zhou hou bei ji fang* 肘後備急方, "Recipes for Emergencies to Be Kept Close at Hand," written by Ge Hong 葛洪 and later supplemented by Tao Hongjing, feature most promi-

14 Ibid., 64–68.

15 Ibid., 81–82.

nently. A specialized book in this tradition is the Southern Song *Fu ren liang fang da quan* 婦人良方大全, "Great Compendium of Good Recipes for Women," by Chen Ziming 陳自明.

Also cited, of course, are important general and specialized medical works, such as the *Ban lun cui ying* 癍論萃英, "Condensed Quintessence of Discourses on Macule [Sores]," written by Wang Haogu 王好古 in the thirteenth century, the famous *Zhu bing yuan hou lun* 諸病源候論, "Discourse on the Origins and Symptoms of All Diseases," by the Sui 隋 dynasty author Chao Yuanfang 巢元方, and the classic *Huang di nei jing Su wen* 黃帝內經素問, "The Yellow Thearch's Inner Classic: Basic Questions."

Clinical texts referred to include diagnostic manuals, manuals to keep your parents alive with good medicine, and works concerning key medical diagnostic topics, such as pulse taking. Other texts cited deal with dietary medicine, a popular topic in China, where little distinction was made between what we might consider medicine and food, and the *BCGM* even quotes specialized works on techniques like moxibustion. Finally, the *BCGM* uses veterinary texts as sources, since these often have the same approaches as texts for human medicine, thus their particular value.

4.2 Sources beyond Materia medica *and Medical Literature*

In composing the *BCGM*, Li Shizhen and his team used or at least cited 952 authors. The current dictionary shows first and foremost, clearly and unmistakably, the depth of the written information available to this editorial team. Each entry, where possible, lists the number of times its title is cited, although this figure has a specific meaning and only a limited use because of the *BCGM*'s tendency to refer to works even when they have been lost or are unavailable and the citation is second-hand, usually from an encyclopedia such as the *Tai ping yu lan* 太平御覽, "Imperial Overview of the *Tai ping* Reign Period."

Many *BCGM* sources are, in fact, cited in this manner and usually do not mention the precise secondary or tertiary source from which the information was actually taken. This methodology may lead to some confusion. For example, the *BCGM* cites two works called *Guang zhou ji* 廣州記, "Records of Guang zhou," which are additionally referred to as *Guang zhou zhi* 廣州志, "Guang zhou Gazetteer," by mistake. Both *Guang zhou ji* texts are lost, so the twenty-eight references to them in the *BCGM* cannot be to the originals but must be to fragments in secondary sources such as the *Tai ping yu lan* or the similar *Yi wen lei ju* 藝文類聚, "Collection of Literature Arranged by Categories." While early sources such as the *Qi min yao shu* 齊民要術, "Essential Arts of the Common People," clearly differentiated between them, from Song times on people citing them second-hand were more and more unaware of their authorship and occasionally regarded the two texts as one. The *BCGM* partook of this confusion in its many second- and third-hand citations of these works.

Other typical sources, some well known, some rare, include historiographical texts: standard histories of the Han (two), Tang (two), and many other dynasties, many private histories (that is, written by individuals and not officially issued by the government), and collections of documents such as the great government en-

cyclopedia *Da Ming hui dian* 大明會典, "Collected Statutes of the Great Ming." Some focus on institutions, for instance the *Tang hui yao* 唐會要, "Institutional History of the Tang," and the *Tong dian* 通典, "Comprehensive Statutes," China's first purely institutional history, written in the late eighth century by Du You 杜佑. Widely used were gazetteers containing descriptions of specific areas and their customs, including general gazetteers for the whole of Ming China, such as the *Da Ming yi tong zhi* 大明一統志, "Comprehensive Gazetteer of the Great Ming," and geographical works, some dealing with mythogeography rather than real geography, such as the *Shan hai jing* 山海經, "Classic of Mountains and Seas."

In the *BCGM* we also find many accounts of foreign countries, discussions of local products (usually from a narrow region), and citations of texts devoted to science and technology or to natural science in general, such as the *Bo wu zhi* 博物志, "Monograph on a Wide Range of Things," and the *Tai ping guang ji* 太平廣記, "Extensive Records of the *Tai ping* Reign Period." Li Shizhen and his team also used various agricultural manuals, like the Toba Wei 魏 *Qi min yao shu*, by Jia Sixie 賈思勰. This is far more than a simple agricultural manual, however, with contents reaching from rich practical botanical and zoological material to detailed veterinary information. They also used monographs on plants, such as the Ming *Ai ye zhuan* 艾葉傳, "Notes on Mugwort," by Li Yanwen 李言聞, and the Tang *Cha jing* 茶經, "Tea Classic," by Lu Yu 陸羽, and on specialized topics like beekeeping, such as the *Feng ji* 蜂記, "Bee Records," by Wang Yucheng 王禹偁.

Further, the *BCGM* cites works of philosophers such as the *Baopu zi* 抱朴子, "Master Embracing Simplicity," of Ge Hong 葛洪, classics and commentaries on these classics like the *Mao shi cao mu niao shou chong yu shu* 毛詩草木鳥獸蟲魚疏, "Commentary on Herbs, Trees, Birds, Beasts, Insects, and Fish in the Mao Book of Songs," by Lu Ji 陸璣 (also appears as 陸機), and dictionaries and lexicographical texts of every sort (including rhyme references) and commentaries on such texts. There are citations of literary collections, such as those of the Song polymath Su Shi 蘇軾, who also contributed many essays, and even entire specialized works as source material, anthologies of particular kinds of literature like poetry and classical essays, individual poems, songs, and rhapsodies (*fu* 賦), letters with relevant information, books of essential texts to support the study of calligraphy with many reproduced inscriptions, and individual inscriptions preserved in general compilations. Other literary references were major works such as the *Wen xian tong kao* 文獻通考, "Comprehensive Study of Literary and Documentary Sources," an anthology and discussion written by Ma Duanlin 馬端臨 during Yuan times, collections of short stories and individual short stories, "brush notes" (*bi ji* 筆記), and collections of short essays on a variety of topics including plants and medicinals. Nearly all the examples given above contained some kind of material on plants or medicinals or provided biographical or theoretical discussions or other connected information that appeared important to Li Shizhen and his team. Nothing was irrelevant.

Collections of biographies, including those of Daoists, immortals, and other supernatural or mythological personages, loom large in the *BCGM*. It also cites catalogues of various kinds (some on archaeology and art), special historical inscriptions,

bibliographies, travelogues, and reports on embassies, such as the Yuan-period *Chu shi xi yu ji* 出使西域記, "Record of One Who Served as an Envoy in the Western Regions," by Liu Yu 劉郁. Buddhist texts are also referenced, mostly sutras but also books on Buddhist topology like the late Northern Wei *Luo yang qie lan ji* 洛陽伽藍記, "Record of the Buddhist Temples of Luo yang," by Yang Xuanzhi 楊衒之. A great many Daoist and alchemical texts are also cited, some more specific than others, including works on sexual alchemy such as the *Su nü jing* 素女經, "Classic of the Pure Woman." And there are, last but not least, references to calendars and calendar commentaries, books on divination and apocrypha (*chen wei* 讖緯), and cosmological and astronomical texts. All in all, we find a vast variety of genres and texts used as sources in the *BCGM*, the above list constituting a not remotely exhaustive but rather highly selective overview.

So much for the literary sources. But the *BCGM* does not cite only texts or scattered fragments of texts. It also refers to their authors and to a great many other individuals somehow associated with these works or with other stories, anecdotes, and hearsay reproduced from unnamed sources and elaborated upon in the *BCGM*. These latter accounts often preserve information found nowhere else.

Hundreds of such examples are included in the present work, making it a dictionary not only of the texts used by Li Shizhen and his team but also of arcane lore associated with individuals whose brief biographies are given where possible (in addition to major figures, whose biographies are of course given as well). Sometimes this lore appears in the form of references that seem intended more to mention famous people because of their fame than to provide real information—in these cases, little more is done than name-dropping. Note that such material is nearly always presented in the context of the history of specific pharmaceutically used substances. Quite likely, these connections of certain names with pharmaceutical substances already existed in other texts, from which convenient sources of information the *BCGM* team simply took them.

Li Shizhen based the presentation of the vast amount of data excerpted in his *BCGM* from this wide range of sources on a novel approach. All the authors of the works of the main tradition had simply gathered, within one substance description, comments copied from previous books and added their own views. The result, toward the end of this tradition, was huge works that proved rather difficult to consult. To learn the specifics of a substance, readers had to pass through the wordings of many different authors from up to the thousand previous years. There was hardly any guidance as to which data might be reliable and which might be faulty.

Li Shizhen, possibly following the model of the early sixteenth-century *Yu zhi ben cao pin hui jing yao* 御制本草品彙精要, "Materia Medica Written on Imperial Order, Containing Essential and Important Material Arranged in Systematic Order," perfected a rather sophisticated structure of substance descriptions. He divided each monograph into several data categories, including the name, general explanatory notes, pharmaceutical processing, thermoquality and flavor, main indications, correction of mistakes, and recipes, to mention the most important ones.

5. The Dictionary Entries

The alphabetical order of this dictionary is guided by the following rules: In the pinyin transcription of names of persons, names with two Chinese syllables—for instance, given names (*ming* 名), style names (*zi* 字), literary names (*hao* 號), and foreign names—are written as a single word, following the rules in *The Chicago Manual of Style*. Forms of address (e.g., *xiansheng* 先生) are also written this way. The transcripted syllables of official and professional titles (e.g., *cheng xiang* 丞相, *jiao shou* 教授), in comparison, are separated. For example, it is Zheng Siyuan 鄭思遠 but Zheng xiang guo 鄭相國, "Zheng, minister of state." If in doubt as to where to find the entry for a certain person, the reader is advised to consult appendix C for quick reference. Pinyin transcriptions of book titles, however, are always written with separated syllables, with the exception of names of persons. For example, it will be *Bai yi xuan fang* 百一選方, "101 Selected Recipes," but *Shizhai bai yi fang* 是齋百一方, "101 Recipes of [Wang] Shizhai." Again, an appendix of book titles appears at the end of this volume to facilitate searches. The entries in this dictionary follow typical patterns, described below.

5.1. Bibliographical Entries

The headline of each entry includes the title and a full translation of the title. The name under which a text is listed is usually the one that appears in the bibliographical sections of the *BCGM*, and alternative names used in the main text are cross-referenced to this main entry. This means that the name under which we list a book is not necessarily the commonly used one in the standard bibliographical sources and elsewhere. To facilitate the search for such titles, we have therefore begun their entries with "This is the XXX" and entered the proper title XXX into the list of books in appendix D. There are some exceptions to this rule of following the *BCGM*'s bibliography, however: If Li Shizhen (LSZ) listed the text under an erroneous name, we have placed the entry under its correct name. And if the *BCGM*'s bibliography has only an abbreviated or very uncommon name of a text but the main text mentions the complete or proper name, we have also placed the entry under this complete or proper name.

The entry itself begins with a brief characterization of the text. This is followed by information on the title's first appearance in a bibliographical source (labeled *FE*, for "first [bibliographical] entry"). We regard book catalogues and bibliographical treatises in dynastic histories as standard bibliographical sources, since they usually provide title, author (if identifiable), and book length. Sometimes textual sources used by the *BCGM* are not mentioned in these standard bibliographies or appear there only centuries after being written but are in bibliographies of encyclopedias such as the *Tai ping yu lan* or of *materia medica* works like the *Zheng lei ben cao*. In such cases, we have marked the first occurrence with "See bibliography of the XXX." However, some texts do not appear in any bibliography at all. In these cases we have provided the title of the earliest book or collection to cite them, labeled as *EE*, "earliest evidence." We then provide alternative names (AN) for these texts found

in other standard bibliographies. If the *BCGM*'s designation for a book differs from that listed in the book's first bibliographical entry, the latter title is marked "AN there" or "AN originally." Each entry then provides the author's name (including information on controversies about the authorship where relevant), the date of compilation/completion (DC), and the size of the text (including alternative versions, labeled *AV*). The rest of the entry consists of a brief overview of the text's contents, additional significant information (such as notes on the text's history, its identification, mistakes made by the *BCGM* team), and a list of alternative names used in the *BCGM*, as well as their respective number of occurrences. All of these names are listed in the dictionary, with a cross-reference to the main entry. Note that if Li Shizhen used only one name for a text throughout the *BCGM*, the number of occurrences is given in the headline of its entry.

The following are some examples of bibliographical entries. The first is of a mainstream medical work, the Yuan-dynasty dietary manual *Yin shan zheng yao* 飲膳正要, "Proper and Essential Things for [the Emperor's] Beverages and Food," a text still widely used today, influential thanks to its Mongolian-era animal medicine—that is, instructions to eat specific parts of animals to counter specific conditions, a genuine Mongol introduction.

> ***Yin shan zheng yao*** 飲膳正要, **"Proper and Essential Things for [the Emperor's] Beverages and Food"**
>
> Yuan 元 dynasty book on dietetic therapy and nutrition. FE *Yi zang mu lu* 醫藏目錄, "Bibliography of the Medical Treasury." Written by → Hu Sihui 忽思慧 and his associates. DC 1330. 3 *juan*. The text mixes and synthesizes Chinese, Middle Eastern, and Mongolian culinary traditions. *Juan* 1 includes Daoist lore, a detailed discussion of various dietary taboos (including some concerning pregnant and postpartum women and wet nurses), and 95 exotic recipes used at court. *Juan* 2 focuses on beverages and medical recipes, along with more material on avoidances. *Juan* 3 consists of a list of 230 *materia medica* and *dietetica*. LSZ frequently uses the work as a source for recipes and newly presented pharmaceutical substances, referring to it as *Yin shan zheng yao* [26], as *Zheng yao* 正要, "Proper and Essential Things" [39], and by the name of the author, as Hu shi 忽氏, "Mr. Hu" [1]. He also refers to a *Yin shan biao ti* 飲膳標題, "Headings for the Emperor's Food and Drink" [1], but this is a different book, further information on which is unavailable.

As described above, the entry begins with the book's title as listed in the *BCGM*'s bibliography, which is fully translated as definitively as we can. Note that *shan* 膳 is an honorific word for the food of some highly placed individuals, such as the emperor, thus the translation. The entry then gives a brief characterization of the book and notes its first appearance in a bibliography, although it must have been known before the time of this bibliography, and fragments of the Yuan original edition still exist. This is followed by a summary of the text's contents and the use that the

BCGM makes of it, including mention of another work that the authors possibly mistook for this text. Such notes are often useful, since the *BCGM* sometimes confuses works with similar names, showing that they were, more often than not, cited second-hand and not actually consulted by the *BCGM* team. This may not have been the case with the *Yin shan zheng yao*, whose confusion with the *Yin shan biao ti* was probably just an oversight.

The following example introduces an anonymous work, one of many often lost Daoist texts cited from secondary sources in the *BCGM*:

> ***Ba di xuan bian jing* 八帝玄變經, "The Eight Thearchs' Classic of Mysterious Changes"**
>
> Anonymous Daoist book. See bibliography of the → *ZLBC*. AN there *Tai shang ba di xuan bian jing* 太上八帝玄變經, "Classic of the Mysterious Changes of the Eight Thearchs of the Great Loftiness." The *ZLBC* cites the book's alchemical lore and some pharmaceutical information. Today two works possibly connected to this text exist, both preserved in the *Dao zang* 道藏, "Daoist Canon" (→ *Dao zang jing* 道藏經). The first is the *Dong sheng ba di yuan [= xuan] bian jing* 洞神八帝元[玄]變經, "Classic of the Original [Mysterious] Changes of the Eight Thearchs from the Cavern of Spirits"; the other is the *Dong shen ba di miao jing jing* 洞神八帝妙精經, "Classic of the Miraculous Essence of the Eight Thearchs from the Cavern of Spirits." The former lacks information on alchemical methods, but the latter does have a "small elixir method" (*xiao dan fa* 小丹法) that corresponds to a citation of the *Ba di xuan bian jing* in the *ZLBC*, which seems to have conflated the two works. Based on the *ZLBC*, LSZ refers to the *Ba di xuan bian jing* [1] in his bibliographical sections but does not mention the title in his main text. However, he also cites a *Tai shang xuan bian jing* 太上玄變經, "Classic of the Mysterious Changes of the Great Loftiness" [3], in his bibliographical sections and in the main text. Upon comparison, this material is identical with that of the *Tai shang ba di xuan bian jing* cited in the *ZLBC*, therefore the text must be the same as LSZ's *Ba di xuan bian jing*. LSZ thus apparently duplicated references in his bibliographical sections.

The title *Ba di xuan bian jing*, not clearly identifiable as that of one particular book, does not appear in any standard bibliography but is cited second-hand from the *Zheng lei ben cao*, which uses an alternative name (AN) that is actually an amalgam of two titles. Of course, in such a case there cannot be any data about authorship, date of compilation, or size. Li Shizhen apparently copied the *Zheng lei ben cao*'s bibliographical entry for this work without mentioning its title in the main text—simply transcribing entries from other bibliographies without using the cited books being a frequently applied procedure in the *BCGM*. However, tracing the origin of the *BCGM* citation, this entry reveals that somewhere along the line of textual

transmission, not only did the *Zheng lei ben cao* amalgamate two titles into one, but this new title was also mistaken for two different texts during the compilation of the *BCGM* bibliography. This entry thus reveals one of the many inconsistencies concerning citations of texts and authors in the *BCGM*—for instance, erroneous book titles and attributions of authorship, incorrect first- or second-hand citations, duplicated or absent bibliographical entries—a symptom of the complicated processes involved in textual transmission and in the compilation of eclectic texts such as this.

The third example, also typical, is the entry for one of the most important *BCGM* sources, as mentioned above, an encyclopedia:

> ***Tai ping yu lan*** 太平御覽, **"Imperial Overview of the *Tai ping* Reign Period"**
>
> Song 宋 dynasty encyclopedia. FE *Song shi yi wen zhi* 宋史藝文志, "Bibliographic Treatise in the History of the Song." Compiled by → Li Fang 李昉 and others at imperial order of → Song Tai zong 宋太宗. DC 976–984. 1000 *juan*, divided into 5363 categories. The book uses a wide variety of sources, 1690 works in all. These include 100 Han 漢 dynasty biographies, 200 ancient local geographies, and many Han period texts on divination and apocrypha (*chen wei* 讖緯). Most of these are now lost, therefore the *Tai ping yu lan* provides a valuable source for older material. Even though LSZ does not cite the text directly very often, as *Tai ping yu lan* [3] and as *Yu lan* 御覽, "Imperial Overview" [4], the book constituted one of LSZ's most important sources for second-hand quotations of early *materia medica* literature.

Like the first example, this entry provides full bibliographical details, in this case including authorship and official sponsorship. It describes the scope of the encyclopedia and comments on its use in the *BCGM*. One could conclude from the number of citations that the *BCGM* team rarely used the *Tai ping yu lan*, but that was not the case in the least, as suggested by what was said above about how the *BCGM* treats its sources. It is thus clear that the number of a given source's citations can have very little to say about its real importance.

Finally, here is another example of the complicated processes of textual transmission and citation reflected in the *BCGM*:

> ***Yao dui*** 藥對, **"Combinations of Pharmaceutical Substances"**
>
> ① [24] → *Lei gong yao dui* 雷公藥對 ① or ②
>
> ② [1] In *Li Dangzhi yao dui* 李當之藥對, "Li Dangzhi's Combinations of Pharmaceutical Substances," this is an erroneous name for the → *Li Dangzhi yao lu* 李當之藥錄.

The second subentry reveals an incorrect labeling of material originating from a book of a different name. Moreover, the first subentry, in cross-referencing two other subentries, shows that *Yao dui* is an abbreviation for two different texts called *Lei*

gong yao dui 雷公藥對, "Lei gong's Combinations of Pharmaceutical Substances." The *Lei gong yao dui* entry, too large to be reproduced here, clearly shows that Li Shizhen not only was mistaken about the history of these two texts but also incorrectly attributed all the material from the earlier work to the later one.

5.2. Biographical Entries

Entries on persons cover authors of texts as well as other, sometimes legendary, individuals, official titles, and groups of people associated in some way or another with pharmaceutical substances. As with source text entries, we have followed the *BCGM*: that is, persons are listed under the name used by the *BCGM* unless referred to only by an incorrect name there, in which case they are listed under their proper name, with a cross-reference from the incorrect name. As well-known people in Chinese history commonly have various designations—their given name, style name, literary name, official title, or other nickname—the *BCGM* accordingly uses various designations for one and the same individual. We have usually listed such people under their given name, with cross-references from the other names used by the *BCGM*, unless it doesn't mention the given name at all. In that case, we have begun our entry with "this is XXX" and added the name XXX to appendix C. If available, the individual's life dates appear in the headline of the entry; if not, a rough time span is given in a brief description of the person's identity. Following the structure of Chinese biographies, information on the person's other names, their birthplace, and their official posts comes next. Note that we have listed official posts, including their translation (according to Hucker's dictionary),[16] only if very little is known about the person otherwise, if the official title is in some way relevant to the designations used by Li Shizhen, or in the case of very high government positions. This basic information is followed by the available landmarks of the person's biography. In the case of authors, this includes the books they wrote; in the case of other people, their association with a pharmaceutical substance or recipe.

The following example is an entry on a major medical figure, one referred to a large number of times in the *BCGM* (in this case the number of citations probably does correspond to real use). This is not surprising, given that Sun Simiao was the author of numerous famous medical texts, his best-known work being the *Qian jin bei ji fang* 千金備急方, "Emergency Recipes Worth a Thousand in Gold." The entry lists this text and a great many others. It also makes clear that Sun was a polymath with interests ranging far beyond Confucianism.

> **Sun Simiao** 孫思邈 (581–682?)
>
> Tang 唐 dynasty physician. A man of Hua yuan 華原 in Jing zhao 京兆, now Luo xian 耀縣 in Shaan xi 陝西. He received the title of Miaoying zhenren 妙應真人, "Perfected One of Subtle Responses," and was therefore called Sun zhenren 孫真人, "Sun the Perfected One." Both the "Old" and the "New History of the Tang" (→ *Tang shu*

16 Charles O. Hucker, *A Dictionary of Official Titles in Imperial China* (Stanford: Stanford University Press, 1985).