

MEMORY OF THE WORLD REGISTER

Ben Cao Gang Mu (《本草纲目》
(*Compendium of Materia Medica*)
(P.R. China)

Ref N° 2010-15

PART A – ESSENTIAL INFORMATION

1. SUMMARY

Ben Cao Gang Mu (《本草纲目》 *Compendium of Materia Medica*) is an encyclopedic work on traditional Chinese materia medica before the 16th century. It was compiled and written by **LI Shi-zhen** (1518~1593), a medical expert of the Ming Dynasty (1368-1644). It took Li 27 years to have the compendium completed. The first draft was completed in 1578 when Ming China was at its imperial heyday.

The compendium is the most complete and comprehensive medical book ever written in the history of traditional Chinese medicine (TCM). It lists, analyses and describes all the plants, animals, minerals, and other objects that were believed to have medicinal properties. The compendium in effect epitomizes the pharmaceutical achievements and developments of East Asia before the 16th century. On the basis of his predecessors' achievements in the pharmacological studies, Li contributed further by supplementing and rectifying many past mistakes and misconception as regards the nature of many medicinal substances and causes of various illnesses. The compendium in fact heralds the dawning of modern pharmacological studies.

The achievement of *Ben Cao Gang Mu* (《本草纲目》 *Compendium of Materia Medica*) is not merely confined to the province of pharmacology, it also covers discussion on topics such as botany, zoology, mineralogy, physics, astronomy, chemistry, metallurgy, geology, meteorology, etc. **Charles Darwin**, the British biologist, hailed the book as an “ancient Chinese encyclopedia”.

Dr. Li's work and the empirical approach he adopted in his research and fieldwork had profoundly influenced the development and study of modern natural science. For example, the compendium sets down for the first time classification standards and method of how traditional material medica should be compiled and formatted and is instrumental in enhancing the credibility, scientific values and accuracy of biological classification of both plants and animals.

The compendium has been translated, totally or partially, into more than 20 foreign languages, including Japanese, Korean, Latin, French, German, English, Russian, etc. It has been reprinted over 100 times in the past 400 years and is still used by scientists, professionals and practitioners of the field as a monumental reference work. **Dr. Paul U. Unschuld**, Professor and Director of Institute of the History of Medicine at Munich University, concluded that the Compendium had exerted great and far-reaching influence on China's neighboring countries; it is the first-rate testimonies of world culture

The book is a 52-volume compilation. The edition nominated for the World Register was carved and block-printed (earliest of its kind) in 1593 by **HU Cheng-long** in Jinling (now Nanjing, Jiangsu Province). This “Jinling edition” is the source document for all its later versions both in China and the world.

2. DETAILS OF THE NOMINATOR

2.1 Name (person or organization)

Library of China Academy of Chinese Medical Sciences

2.2 Relationship with the documentary heritage nominated

Library of the China Academy of Chinese Medical Sciences is the owner and caretaker of the nominated document.

2.3 Contact person (s)

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3. IDENTITY AND DESCRIPTION OF THE DOCUMENTARY HERITAGE

3.1 Name and identification details of the items being nominated

Ben Cao Gang Mu (《本草纲目》 *Compendium of Materia Medica*). It is also known as “*Materia Medica, Arranged According to Drug Descriptions and Technical Aspects*”. The edition being nominated was block-printed by **HU Cheng-long** in Jinling (now Nanjin City of Jiansu Province, China) in the 21st year of the Wanli reign (1593), Ming Dynasty (1368-1644).

3.2 Description

Ben Cao Gang Mu (《本草纲目》 *Compendium of Materia Medica*) is a 52–volume compilation, with 2 supplemented volumes of illustrations including 1,109 pictures, written in about 1.9 million Chinese words. The book recorded 1,892 kinds of medicines with 11,096 prescriptions.

3.2.1 Contents of the Compendium are listed as follows:

Volume 1-2: Ancient Chinese pharmacological works before *Ben Cao Gang Mu* (《本草纲目》 *Compendium of Materia Medica*) are introduced and essential theories on traditional Chinese Medicine are systematically summarized in this part. Taboos for drugs usage, pregnancy and dietary contraindications are explained as well.

Volume 3-4 : Drugs for internal, external, gynecological and pediatric diseases caused by exogenous pathogens and endogenous factors are introduced.

Volume 5-11: Individual drugs, detailed descriptions are given to medicines under the categories of water, fire, earth, and metal, etc.

Volume 12 – 21: Individual drugs, detailed descriptions are given to medicines under the categories of grasses.

Volume 22-25: Individual drugs, detailed descriptions are given to medicines under the categories of grains.

Volume 26-28: Individual drugs, detailed descriptions are given to medicines under the categories of vegetables.

Volume 29-33: Individual drugs, detailed descriptions are given to medicines under the categories of fruits.

Volume 34-37: Individual drugs, detailed descriptions are given to medicines under the categories of wood.

Volume 38: Individual drugs, detailed descriptions are given to medicines under the category of clothes and utensils

Volume 39-42: Individual drugs, detailed descriptions are given to medicines under the category of insects and worms.

Volume 43-44: Individual drugs, detailed descriptions are given to medicines under the category of animals with scale

Volume 45-46: Individual drugs, detailed descriptions are given to medicines under the category of animals with shell.

Volume 47-49: Individual drugs, detailed descriptions are given to medicines under the category of poultry.

Volume 50-51: Individual drugs, detailed descriptions are given to medicines under the category of beast.

Volume 52: Individual drugs, detailed descriptions are given to different parts of human body which can be used as medicine.

Each drug is further described under the following subtitles, viz., Name and Explanations, Processing Method, Flavor and Taste, Known Cure, Observation Notes of the Drug, and Relevant Prescriptions.

3.2.2 Catalogue or registration details

The book is described in the following catalogues:

a) *Directory of National Precious Ancient Works (Guojia Zhengui Guji Minglu)*. National Library of China, National Protection Center for Ancient Works, Beijing: National Library Press, 2008, No. 01798

« *Ben Cao Gang Mu (Compendium of Materia Medica)* 52 volumes of text, 1 volume of contents, and 2 volumes of illustrations

Compiled by Li Shi-zhen (Ming Dynasty), revised by Li Jian-zhong, Li Jian-yuan (Ming Dynasty)
Block-printed by Hu Cheng-long, native of Jinling (now Nanjing), in the 21st year of the Wanli reign, Ming Dynasty (1593 AD)

Collected at the Library of the China Academy of Chinese Medical Sciences »

b) *General Catalogue for Chinese Medical Classics in China (Zhongguo Zhongyi Guji Zongmu)*. Xue Qing-lu, Shanghai: Shanghai Lexicographical Publishing House, 2007. P201

c) *Catalog of Ancient Rare Books in China (Zhongguo Guji Shanben Shumu)*. Compilation Committee for Catalog of Ancient Rare Books in China, Shanghai: Shanghai Chinese Classics Publishing House, 1996. P187

d) *National Union Catalog of Chinese Medical Books (Quanguo Zhongyi Tushu Lianhe Mulu)*. Xue Qinglu, Beijing: Publishing House of Chinese Medical Classics, 1991. P163

3.2.4 History/Origin/Background/Provenance

The nominated document is the earliest block-printed version of *Ben Cao Gang Mu (Compendium of Materia Medica)* and it is the source document of all later editions and versions both at home and abroad. This book was originally collected by **Dr. Ding Ji-min** (1912-1979), a famous physician of Chinese medicine in Shanghai. In the 1960s, the Library of the China Academy of Chinese Medical Sciences purchased it from Dr. Ding. Since then, it has been safely kept in this library.

3.2.5 Assessment of physical state and storage condition

Given that this documentary heritage has been in existence for over 400 years, the papers have aged and slightly torn in some pages. It is kept on shelves in temperature and humidity controlled repository for rare books in the Library of China Academy of Chinese Medical Sciences.

3.2.6 Referees

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4. JUSTIFICATION FOR INCLUSION/ ASSESSMENT AGAINST CRITERIA

4.1 Authenticity

Ben Cao Gang Mu (Compendium of Materia Medica), printed in 1593 by HU Cheng-long in Jinling (now Nanjing, Jiangsu Province, China), is the first block-printed edition of the book and the original version from which all later reprinted and translated versions in China and abroad are derived. It was originally collected by **Dr. DING Ji-min** (1912-1979), a famous physician of Chinese medicine in Shanghai. In 1960s, it was purchased by the Library of China Academy of Chinese Medical Sciences. Since then, it has been preserved safely in the Library.

Repeated verifications on the authenticity of the book had been conducted by the national authorized **Cataloging Committee of Ancient Books**. Authenticity and reliability of the author and version of the book had been confirmed.

The compendium is listed in the following three authorities on rare books in China:

- (1) *Guojia zhengui guji minglu* (《国家珍贵古籍名录》 National Directory of Rare Ancient Works). National Protection Center for Ancient Books, National Library of China, Beijing: National Library Press, 2008, No. 01796
- (2) *Zhongguo zhongyi guji zongmu* (《中国中医古籍总目》 General Catalog for Chinese Medical Classical in China) by XUE Qing-lu, Shanghai, Shanghai Lexicographical Publishing House, 2007. P201
- (3) *Zhongguo guji shanben shumu* (《中国古籍善本书目》 Catalog of Ancient Rare Books in China) by Compilation Committee of Catalog on Ancient Rare Books in China, Shanghai, Shanghai Chinese Classics Publishing House, 1996. P187

4.2 Significance, Uniqueness and Irreplaceability

4.2.1 World Significance

Ben Cao Gang Mu (Compendium of Materia Medica) epitomized the achievements and developments of medicine in East Asia before 16th century. The book classifies and describes in details the name, origin, appearance, characteristics, cultivation, collection, processing, preservation, potency, etc. of 1,892 kinds of plants, animals, minerals, metals believed to have medicinal effect. It is the most comprehensive work and first of its kind in medical-pharmaceutical studies.

The classification method of the medicinal substances pioneered in the book was the most innovative and advanced in the world at that time. It greatly improved the traditional classification method described in *Zhenglei Bencao* (《证类本草》 *Classified Materia Medica*) of the Song Dynasty (960 – 1279). The classification system, together with the large number of natural medicines the compendium recorded and described, were of tremendous influence on the future development of medical-pharmaceutical studies and practices. In fact, the two-tier classification of medicines introduced in the compendium was almost 200 years earlier than Carl Linnaeus' (1707 – 1778) biological taxonomy.

The Compendium is not just a pharmacological text, it is also an encyclopedia of great academic value, and its influence on the development of the world's natural sciences has been confirmed. The compendium contains empirical knowledge in areas such as botany, zoology, mineralogy, metallurgy, geology, geognosy, physics, chemistry, astronomy and meteorology.

The compendium was first introduced to Japan in 1606 where it had been republished, annotated and subsequently shaped the development of Japanese medicine, especially in the Edo Era (1603-1867).

According to **Tairi Yajima**, a Japanese historian of natural sciences, “The book, *Ben Cao Gang Mu (Compendium of Materia Medica)*, inspired the development of Japanese herbalism and natural science in the Edo Era”

The book was also an important reference for Korean physicians and pharmacologists since 1720s. In the 19th century, **Sue Hide**, a Korean scholar, quoted a large amount of relevant contents from the book and compiled his *Linyuan Jingji Shiliu Zhi* (《林园经济十六志》 *Sixteen historical Studies on the Economy of Horticulture*), which is itself a masterpiece on the subject.

Ben Cao Gang Mu (Compendium of Materia Medica) was also translated into Latin and introduced to Europe by a Polish scientist, explorer and a Jesuit missionary, who came to China in 1647. Thereafter, it was translated into more than 20 languages and spread all over the world. According to the survey of **Dr. Joseph Terence Montgomery Needham** (1990 – 1995), part of the book was also translated into French by a French physician, **Dr. Vandermond** in 1732. The translated work was published 100 years later arousing great interest among European chemists and chemical historians.

From the 18th to 20th century, the compendium was either completely or partly translated into many languages, including French, English, German and Russian, and distributed all over the world. It became the topic of study by scholars of pharmacology and medicine. An American chemist and historian of natural sciences, published an article in 1981 entitled *Zuowei Danjia Zhongdu De Jieduji De Bocai* (《作为丹家中毒的解毒剂的菠菜》 *Spinach, an Antidote for Dan-poisoning*), the basis of which is from the *Compendium of Materia Medica*.

Charles Darwin, the British biologist and author of *Origins of Species*, acknowledged the book as an “ancient Chinese encyclopedia”. **Joseph Needham**, another British historian of natural sciences, evaluated **Li Shizhen** and *Ben Cao Gang Mu (Compendium of Materia Medica)* in the first volume of his *History of Science and Civilization in China*, saying that “undoubtedly the greatest scientific achievement of the Ming was the culminating work of the pen tsao series (the compendium series),...LI Shih-Chen attained as high a rank qua scientist as it was possible for anyone to attain in isolation from the Galilean-Vesalian movement.” **Dr. Paul Unschuld**, Professor and Director of Institute of the History of Medicine at Munich University, concluded that the Compendium is “an encyclopedia of natural history that was unmatched worldwide at its time....The *Bencao Gangmu*... may be counted among the first-rate testimonies of world culture.”

Different editions of *Ben Cao Gang Mu (Compendium of Materia Medica)* published in the Ming Dynasty (1368-1644) and the Qing Dynasty (1644-1912) are collected by the British Library, Cambridge University Library, Oxford University Library, French National Library, German National Library, the U.S. Library of Congress, National Library of Korea, and libraries in Russia, Italy and Denmark. The Compendium is still used as an important reference for scientific research.

4.2.2 Uniqueness

Ben Cao Gang Mu (Compendium of Materia Medica) is first of its kind in the studies of natural sciences and medicine during the period of its appearance. It also displays a format and style which are both systematic and artistic. The abundant beautifully and vividly drawn illustrations found in the Compendium are not only meaningful for morphological study, but are also of aesthetic or artistic value.

Since Dr. Li’s scientific and empirical approach called for an accurate identification of the original source works for each of the medicinal item described and listed in his *Compendium of Materia Medica*, and since many of those source literatures quoted were either lost or destroyed, the Compendium has therefore become more important and stands as the only and rare records for all such past studies.

As far as “irreplaceability” of the book is concerned, despite the fact that many editions were printed and published since the Compendium first came out, the “Jinling edition” (i.e. the nominated edition), originally block-printed by Hu Chenglong in Jinling (now Nanjing) in 1593, is nonetheless the very first edition and is also the only version edited by Dr. LI’s own family. The “Jinling edition” is therefore unique and is the archetype for all other successive prints. It is in itself a work of great historical and cultural value.

4.3 Criteria of (a) time (b) geography (c) people (d) subject and theme (e) form and style

Ben Cao Gang Mu (Compendium of Materia Medica) was first published in 1593 when the Ming China was in its imperial heyday, and when its neighboring states in the region were all “kneeling” before its powerful influences, both political and cultural. That accounts for the extensive influence of the Compendium over peoples of the region.

The Compendium is the first work of its kind. It recorded and summarized traditional medicines before the 16th century. It drew its reference from a wide range of works dated from the Warring States period (476 BC – 221 BC) to the years of the Wanli reign of the Ming Dynasty (1573 AD- 1593 AD), and from countries such as Persia, India and the Mediterranean, covering medical knowledge of up to 2,000 years.

In addition to precisely recorded 1,892 kinds of medicinal herbs, its classification system, the most sophisticated and advanced classification in the world at that time, had greatly improved the traditional medicinal classification and scientific biological taxonomy. Dr. LI’s research methodology and the *Ben Cao Gang Mu (Compendium of Materia Medica)* also represented the shift to modern scientific and empirical approach.

Li Shi-zhen was the greatest physician and pharmacologist in Chinese history. He began working in the Royal Hospital as an medical official. His major contribution to medical science was his thirty years worth of research work crystallized in the compilation of this epic book *Ben Cao Gang Mu (Compendium of Materia Medica)*. Because of his great contribution, **Li Shi-zhen** enjoyed the prestige of being the greatest naturalist in ancient China. In 1951 at the World Peace Council in Vienna, **Li Shi-zhen** was elected as one of the world’s cultural celebrities by delegates from different countries. Li’s statue towered aloft at the Moscow State University, and he was ranked as one of the world’s most famous scientists by the people there.

As regards form and style, the publishing and printing style of this nominated document has the typical characteristics of the 13th century to 14th century. It is 27.6×17.4 cm in size, 12 lines in each page, and each line contains 24 characters. The document is an outstanding representative of the technique of woodblock printing in ancient China. The papers used in this nominated document are living proof of ancient oriental papermaking technique. Binding style of the nomination document also reflects the binding style of ancient Chinese books. There are 2 volumes of illustrations with a total of 1109 pictures, all of which were done by hand. The images are beautiful and vivid, manifesting the achievements of China’s ancient art of woodblock printing.

4.4 Issues of rarity, integrity, threat and management

Although the *Ben Cao Gang Mu (Compendium of Materia Medica)* has been reprinted for many times for the last centuries, the block-printed book by **Hu Chenglong** in Jinling (now Nanjing) of 1593 is still the earliest and best-preserved edition in China. Jinling version is the archetype for all successive prints and remains the standard followed by all later editions. Despite also that the book is 400 years old, the Jinling edition of 1593 is still regarded as in satisfactory state, it is preserved in its integrity, except for the loss of half a page.

As regards threat, the edition of 1593 was officially designated as protected ancient rare book of

Library of China Academy of Chinese Medical Sciences. It is being managed and cared by professionals in the Library and is kept in specialized repository. However, with the passing of the time, the substance of paper is changing and is slightly damaged, immediate measures are needed to conserve the book.

5. LEGAL INFORMATION

5.1 Owner of the documentary heritage (name and contact details)

Library of the China Academy of Chinese Medical Sciences

5.2 Custodian of the documentary heritage

Vice Director General of Library of China Academy of Chinese Medical Sciences

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5.3 Legal status:

a. Ownership

State-owned

b. Accessibility

Normally readers are prohibited from accessing to the original version except for special assignments. However microfilms and digital CD-ROMs are available for public use..

c. Copyright Status

Copyright held by the Library of the China Academy of Chinese Medical Sciences

d. Responsible Administration

China Academy of Chinese Medical Sciences

6. MANAGEMENT PLAN

Ben Cao Gang Mu (Compendium of Materia Medica), Jinling edition of the year 1593, has been safely kept in the Rare Books stockroom with temperature and humidity control. Fireproof equipment designated by the government guarantee emergency measures in case of dangerous situations. Well-trained staffs and strict regulations concerning the management of the storage rooms ensure the safety and integrity of the book.

Remedial Plan : *Ben Cao Gang Mu (Compendium of Materia Medica)* is a priceless, ancient rare book preserved in the Library of China Academy of Chinese Medical Sciences. As there is still no purposely built and equipped repository, its storage environment though fair, is still far from satisfactory. Therefore, we would like to suggest:

- (1) Establish a special repository for ancient rare archives.

(2) Make copies, both paper and digital, for wider public access and circulation.

(3) Conserve the existing copy by de-acidification and other necessary measures.

7. CONSULTATION

The owner of the Compendium, Library of China Academy of Chinese Medical Sciences, and the custodian, i.e. Vice Director General, Library of China Academy of Chinese Medical Sciences, had been consulted and both parties expressed strong support for the nomination to the World Register, as well as the sharing of China's priceless documentary heritage with the rest of the world.

Further, professional advice and guidance from the National and Regional Memory of the World Committee had also been sought.

PART B – SUBSIDIARY INFORMATION

8. ASSESSMENT OF RISK

Thus far, there is no serious and immediate threat regarding protection and preservation. However since the paper of the Compendium is aging with time passing, some pages are fragile. Although some restoration works had been done, sustained efforts should be made to protect and conserve the book.

Ben Cao Gang Mu (Compendium of Materia Medica) is stored in the Rare Book Stockroom, Library of China Academy of Chinese Medical Sciences. Though not entirely satisfactory, the room is equipped with special door and fire extinguisher, pest and dust control equipment. All these measures are intended to minimize any possible damage to the book.

9. ASSESSMENT OF PRESERVATION

Ben Cao Gang Mu (Compendium of Materia Medica) was block-printed by **Hu Chenglong** at Jinling (now Nanjing) in 1593. It was originally collected by **Mr. Ding Jimin** (1912-1979), a famous physician of Chinese medicine in Shanghai. In 1960s the book was purchased from Mr. Ding by Library of China Academy of Chinese Medical Sciences which has been preserved safely in the Library until now. The book has subsequently been confirmed authentic by authorities in Beijing.

Safety measures and emergency procedures adopted in Library of China Academy of Chinese Medical Sciences are approved by Chinese authorities. Well-trained librarians and strict regulations concerning the management of the storage rooms are available. Therefore, there is no immediate threat to the physical well-being of this rare book.