The Book of Chinese Medicine, Volume 1

The Book of Chinese Medicine, Volume 1:

The Timeless Science of Balance and Harmony for Modern Life

Edited by Henry H. Sun, Jingyan Meng and Kaijing Yan

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PREFACE

As a subspecialty in medicine, traditional Chinese medicine (TCM) is thousands of years old and has seen little change until the last one hundred years. Advanced biosciences, physics, and even quantum concepts are applied to better understand and explain its concept of what is known as a vital force of life, the inner energy "Qi" (think of the geothermal energy of the earth) which moves the functions of the body, the base supportive structure of the body "Blood" (think of the lands and oceans of the earth), and the signal transmitter and linkage "Jing-Lou" (think of all the forms of waves of the earth), that surges, builds, connects, and moves throughout the body, unifying it.

Any imbalance of the energy, structure, and transmitter, Qi, Blood, and Jing-Luo, can cause disease and illness. This imbalance is most commonly thought to be caused by an alteration in the opposite and complementary forces that make up the vitality. This is called the balance of Yin (referring to female, the moon, and wind) and Yang (referring to male, the sun, and light).

The ancient Chinese believed that humans are microcosms of the larger surrounding universe, and correspond to and interconnect with nature, and are subject to its forces. The balance between health and disease is a key concept.

TCM treatment therefore seeks to restore this balance through treatment specific to the individual. This is why I call it the timeless science of balance and harmony for modern life.

It is believed that to regain balance you must achieve a balance between the internal bodily organs and the five external elements of earth, fire, water, wood, and metal.

Now, let us close our eyes and imagine the form of the body – the lands and rivers of the earth are heated by geothermal energy, where waves, winds, sounds, and lights pass all kinds of signals from one part to the other, and the Earth is harmonized with the outer solar system and then the Milky Way – healthy, vital, and peaceful like a new-born baby. If the reader can fully understand the above concept, one can start to read volume I of this book, which describes these concepts in more detail.

The questions that then arise are: Under what conditions might the balance be broken? What causes an imbalance to occur? How could we bring the balance back to its origin? What state-of-the-art modern sciences can explain and/or be applied to better manage such an imbalance and treat disease? Why did the ancient Chinese use herbs to regain such balance? To find the answers please move to volume II, in which knowledge in the diagnosis, syndrome differentiation, prescription formulas, herbal drugs, and acupuncture treatments are provided. We also provide some analysis about the similarities and differences between the theoretical systems of Chinese and Western medicines, with some typical cases of clinical research in volume II. The current scientific research, clinical practice examples, and even industrialized manufacturing of TCM products are demonstrated to the reader.

Although TCM is an experience-based medical practice, it can be well translated into and proven by modern science. Regaining the body's balance (like treating cancer with immunotherapy) is sure to be different from surgery (like treating tumour with excision), but each has its special fitting conditions and pros and cons. Purified or synthetic chemicals are ten, if not one hundred, times more concentrated than those found in natural herbs, but other co-supportive components are removed which may cause different reactions in the body (think of taking vitamin C from vitamin C tablets versus eating whole tomatoes).

It is certain that some herbal treatments used in TCM can act as medicines and be very effective but may also have serious side effects. In 2004, for example, the FDA banned the sale of dietary supplements containing ephedra and plants containing ephedrine group alkaloids due to complications, such as heart attack and strokes (ephedra is a Chinese herb used in dietary supplements for weight loss and performance enhancement). However, the ban does not apply to certain herbal products prepared under TCM guidelines intended only for short-term use rather than long-term dosing, or to OTC and prescription drugs and herbal teas. The chief editor of this book, Prof. Henry Sun, has been granted permits to conduct phase II clinical trials in the USA under FDA regulations for a multi-herbal drug product containing ephedra, and also led a group of scientists in phase III clinical development for a herbal drug product for cardiovascular indications that prove its clinically significant effectiveness with excellent safety profiles.

Before I close this preface, a few points need to be mentioned. In the "organ" structure, the organs of the physiological functions and pathological syndromes are discussed in combination, so readers can easily understand them. Concerning treatment rules, "adjusting Yin and Yang" is discussed as the general guideline for the treatment of disease and taking the principle of "curing similar diseases with different methods" and/or "curing different conditions with similar formularies." There are some illustrations of acupuncture, focusing on the meridians, acupoints, acupuncture technology, acupuncture treatment principles, and acupoints prescriptions, all of which is written to be concise, easy to understand, and accurate. In the overall concept, I will strive to maintain the systematic nature and integrity of Chinese medicine, highlight its relevance and practicality, and achieve the perfect combination of being systematic, scientific, innovative, and accurate, with integrity. In the last part of the book, I will provide descriptions and case examples of the modernized and industrialized TCM, along with the most recent research and clinical successes of the integrated TCM practices.

Enjoy your reading!

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Biography

Dr. Sun graduated from Shanghai Medical University in 1982 and received his Ph.D. in Clinical Pharmacology and Biopharmaceutics from the University of Connecticut in 1993, and then served at the US FDA as a regulatory reviewer, and was promoted to be one of the highest-ranked Expert Regulatory Officer in 2000 after 7 years of federal services.

Since 2006, Dr. Sun started to focus on innovative drug developments, and international R&D collaboration, especially in the area of Modernizing and Globalizing Traditional Chinese Medicine. He leads his group of scientists successfully registered over 20 new drugs in 32 countries and made a historical milestone to develop the worldwide first and only (as of today) multi-herbal botanical drug product to complete its clinical phase III development in the United States under FDA regulations, with three indications in three different therapeutic areas.

Dr. Sun is also very active in developing business collaborations. He established several international R&D Joint Ventures and achieved numerous business in-licenses and out-license deals globally.

Dr. Sun is also serving as the sectary of Chinese Medicine Globalization Alliance, and is the winner of the Qihuang International Award, the highest award in research, education, development, and practice in TCM, with 100+ publications in peer-reviewed medical and pharmaceutical journals.

Jingyan Meng, PhD. -- Associate Editor of The Book of Chinese Medicine

Professor and Dean of Faculty of TCM, Tianjin University of Traditional Chinese Medicine Associate Chairman of Branch Association of TCM Basic Theory, China Association of Chinese Medicine Associate Chairman of Branch Association of TCM Basic Theory, Tianjin Associate Chairman of Branch Association of TCM Oncology, Tianjin Association of Chinese Medicine Associate Chairman of Branch Association of TCM Basic Theory, Tianjin Associate Chairman of Branch Association of TCM Basic Theory, Tianjin Society of Integrated Traditional Chinese and Western Medicine

Biography

Dr. Meng graduated from Tianjin College of Traditional Chinese Medicine in 1986. He received his Postdoctoral of Chinese Internal Medicine from Tianjin University of Traditional Chinese Medicine in 2007. He started in research back in 1989 as an assistant researcher of the Institute of Chinese Medicine, Tianjin College of Traditional Chinese Medicine. Since 2009, he has been the Professor and Dean of Faculty of the Traditional Chinese Medicine Department in Tianjin College of Traditional Chinese Medicine.

Dr. Meng has won many honors and certificates throughout his career as a researcher and an educator. He has been awarded the First State-Level Prize of the Sixth Outstanding Achievements in Higher Education and the Second State-Level Prize of the Seventh Outstanding Achievements in Higher Education. He has won the First Prize for Scientific and Technological Progress in Shanghai and the Second Prize for Scientific and Technological Progress in Tianjin. In addition, he has won the Tianjin Outstanding Professor Award and the Tianjin Outstanding Overseas Returnees Award.

Dr. Meng has also been an editor in many books as well as textbooks and has published many research papers. He was the editor-in-chief and associate editor in multiple books and textbooks relating to different areas of Chinese Medicine. He was also the corresponding author in multiple research papers that have been published on traditional Chinese medicine.

Kaijing Yan, PhD.—Associate Editor of The Book of Chinese Medicine

Executive Chairman of the Board of Tasly Holding Group Chairman of the Board of Tasly Pharmaceutical Group Chairman of Asian Pacific Self-Medication Industry (APSMI) Rotating Chairman of China Nonprescription Medicines Association Vice Chairman of China Pharmaceutical Innovation and Research Development Association Member of Pharmacy Administration Commission of Chinese Pharmaceutical Association Executive Deputy Director of Laboratory of Molecular Pathology of Huashan Hospital of Fudan University and Tasly

Biography

Dr. Yan received his MSc. degree (2003, International Securities, Investment & Banking) from University of Reading, England, United Kingdom and Ph.D. degree (2016, Traditional Chinese Medicine) from Tianjin University of Traditional Chinese Medicine. In 2014, he took the helm as the chairman of the board of Tasly Pharmaceutical Group. Compound Danshen Dripping Pills from Tasly has become the first-ever multi-herbal drug product to complete its Clinical Phase III development stage in the United States in 2016.

Dr. Yan devotes himself to the research and practice of TCM modernization and internationalization. He created the MITRO model (Marketing, Industries, Technologies, Regulations, Organization) in TCM internationalization research and put forward new concepts on integration of Eastern and Western medicines and coalescence of TCM theories and Western medicine technologies.

Dr. Yan is in charge of series of national, provincial-level scientific research projects, such as "Intelligent Manufacturing Model Application on Compound Danshen Dripping Pills" (the major project of Ministry of Industry and Information Technology of the People's Republic of China) and "Research and Development on the Core Technology of Innovative TCM"(the National Science and Technology Major Projects for Major New Drugs Innovation and Development). He has received many awards, such as the First Prize of Science and Technology Progress Award of Chinese Association of Integrative Medicine, and First Prize of Tianjin Science and Technology Progress Award.

Chapter One: An Overview of Chinese Medicine *Ting Zhang*

Chapter Two: The Philosophical Foundation of Chinese Medicine *Jingyan Meng, Miao Wang, Weiling Yuan, Peng Zhou*

Chapter Three: The Theory of the Solid-Hollow Viscera

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Chapter Four: Essence, Qi, Blood, Liquid and Fluid, and Spirit *Jingyan Meng, Miao Wang, Weiling Yuan, Peng Zhou*

Chapter Five: The Meridians and Collaterals of Chinese Medicine *Zhongde Kang*

Chapter Six: The Constitution *Jingyan Meng, Miao Wang, Weiling Yuan, Peng Zhou*

Chapter Seven: The Causes of Disease

Jingyan Meng, Miao Wang, Weiling Yuan, Peng Zhou

Chapter Eight: Syndrome Differentiation

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CHAPTER ONE

AN OVERVIEW OF CHINESE MEDICINE

1.1 Overview of the Theoretical System of CM

1.1.1 What is CM?

Originating from ancient China, CM is a medical science which studies human life, health, disease, and prevention. It boasts a unique theoretical system, rich clinical experience, and scientific thinking methods. For thousands of years, CM has made tremendous contributions to the healthcare of the Chinese people and the prosperity of the Chinese nation.

As an integral part of global medical science, CM falls into the category of life sciences and thus undertakes the mission of promoting the continuous progress and innovation of life sciences. The unique medical theory, distinctive clinical diagnosis, and treatment characteristics of CM will continue to contribute to the development of the world's medical and life sciences and the health of all humankind.

CM also falls into the category of natural sciences because it mainly studies human life by focusing on the basic laws of human life processes, the internal mechanisms of pathological changes, the specific measures of disease diagnosis, and treatment and healthcare. Since people live in society, changes in social environment, social status, and economic conditions have a profound impact on physical and mental health. CM also focuses on examining and studying the influence of social factors on life from a social perspective. Therefore, CM has certain attributes of social sciences. The emergence and development of CM is based on traditional Chinese culture. Aspects of ancient Chinese philosophical thought, such as Qi theory, Yin-Yang theory, and the theory of five elements, have become the important guiding theories of CM. In this regard, CM has distinct cultural attributes and serves as an important part of traditional Chinese culture as well as a key to traditional Chinese culture.

1.1.2 What is the Theoretical System of CM?

A system is a whole consisting of interrelated yet mutually restricted parts. The scientific theoretical system is a complete system composed of three basic elements: basic concepts, basic principles or laws, and specific scientific laws. Therefore, the theoretical system of CM is composed of the basic concepts and principles of CM and the scientific conclusions – namely, scientific laws derived from the basic principles through the logical deduction of CM. It is based on such theories as ancient Chinese materialism and dialectic thought, namely Qi monism and the theories of Yin-Yang and the five elements. With the concept of holism as the guiding thought, it is a unique medical-theory system regarding the solid-hollow viscera, meridians and collaterals, essence, Qi, and blood as well as liquid and fluid as the physiological and pathological basis for treatment featuring syndrome differentiation.

1.2 The Formation and Development of the Theoretical System of CM

Under the influence and guidance of ancient Chinese philosophical thought, the theoretical system of CM was formed on the basis of the traditional Chinese culture through long-term experience and the theoretical summary of healthcare. It came into being during the Warring States Period of the Qin and Han dynasties. Thanks to the unremitting efforts of doctors of all ages, it has gradually become more sophisticated.

1.2.1 The Pre-Qin Period and the Qin and Han Dynasties

As hundreds of schools of thought sprang up, China saw a cultural efflorescence during the pre-Qin period and the Qin and Han dynasties. Influenced by traditional Chinese culture, four medical classics represented by the *Yellow Emperor's Inner Classic* emerged during that time. CM evolved from a simple accumulation of experience and knowledge to a systematic process of medicine with a complete theoretical system. Therefore, the pre-Qin period and the Qin and Han dynasties were also bound together as the foundation and formation period of the theoretical system of CM.

(a) The Yellow Emperor's Inner Classic

Known as *Inner Classic* for short, this book is one of the earliest extant medical classics in China. The work is generally dated to between the Spring and Autumn Period and the Warring States Period to the time of the Han dynasty. The book was not written by one person at a specific time but compiled by numerous medical scholars. It is composed of two parts: Plain Questions, and Spiritual Pivot. With a total of 162 papers, it systematically expounds the structure, physiology, and pathology of the human body, the diagnosis and treatment of diseases, and the process of healthcare. It mainly talks about Yin and Yang, the five elements, viscera and their manifestations, meridians and collaterals, etiology, pathogenesis, diagnosis, treatment, and acupuncture and decoction. In addition to the medical theory, it conducts in-depth discussions on a series of major issues in the field of philosophy, such as the relationship between heaven and humanity and between body and spirit. The book summarizes the medical experience and academic theories during the pre-Qin period and the Qin and Han dynasties, representing the highest achievement of CM at that time. It establishes and elaborates on the structure of the theoretical system of CM, laying the theoretical foundation for the development of CM and delivering a significant and far-reaching impact on the development of CM in later generations. In general, the book marks the initial formation of the theoretical system of CM.

(b) The Classic of Difficult Medical Issues

It is said that this book was written by Qin Yueren, following the *Inner Classic*. It discusses a total of eighty-one questions, so it is also known as *Classic of Eighty-one Medical Issues*. It adopts a Q&A format to explain the solid-hollow viscera, meridians and collaterals, acupoints, pulse-taking, acupuncture, and some diseases and syndromes. The book embraces an innovative understanding of the theories of triple-Jiao, life gate, and Eight Extraordinary Meridians, and introduces some original ideas about the treatment principles of supplementing the mother-organ in the case of child-organ deficiency and purging it for the excess, making breakthroughs especially in pulse-taking and acupuncture treatment. Supplementing the *Yellow Emperor's Inner Classic*, the work is of great guiding significance to the practice of clinical diagnosis and treatment.

(c) Treatise on Cold Pathogenic and Miscellaneous Diseases

This was written by Zhang Zhongjing, a famous doctor of the late Eastern Han Dynasty. The original book was once lost, then was compiled by Wang Shuhe, a doctor of the Jin Dynasty, and edited into two books: *Treatise on Cold Pathogenic Diseases* and *Synopsis of Prescriptions of the Golden Chamber* during the Song Dynasty. The former deals with exogenous fever based on syndrome differentiation of the six-meridian theory, while the latter, divided according to the types of diseases, elaborates internal injuries and diseases based on syndrome differentiation. *Treatise on Cold Pathogenic and Miscellaneous Diseases* establishes a relatively systematic approach to treatment based on syndrome differentiation, which became the source of treatment based on syndrome differentiation for later generations.

(d) Shennong's Herbal Classic of Materia Medica

Written by someone by the name of Shennong during the late Eastern Han Dynasty, this work is the earliest extant pharmacy monograph from China. The book records 365 kinds of drugs, classifying them as: top, middle, and low grade; cold, hot, warm, and cool by nature; and five flavours, namely sour, bitter, sweet, spicy, and salty. It elaborates the efficacy of each drug and proposes the theory of drug compatibility, such as "harmony of the seven medicinal relations," which includes single ingredient formula, mutual synergizing, mutual assistance, mutual restraint, mutual incompatibility, mutual antagonism, and mutual detoxification. In general, this work laid the foundation for the CM theory.

1.2.2 The Two Jins, Sui, and Tang Dynasties

The Wei, Jin, Sui, and Tang dynasties comprise a period characterized by the gradual systematization of CM theories. The so-called systematization refers to the formation of subdisciplines of medicine, as well as a number of monographs.

(a) Wang Shuhe and The Pulse Classics

Wang Shuhe was a minister of imperial medical affairs (a high official in charge of the administration of medical affairs), and the writer of the famous *The Pulse Classics*, the earliest existing monograph on sphygmology in China. The work's significant contributions lie in two main aspects. First, the pulse conditions are summarized and classified into twenty-four

types: floating pulse, hollow pulse, surging pulse, slippery pulse, rapid pulse, irregularly rapid pulse, string-like pulse, tight pulse, sunken pulse, hidden pulse, drum-skin pulse, excess pulse, faint pulse, unsmooth pulse, thin pulse, soft pulse, weak pulse, feeble pulse, scattered pulse, moderate pulse, slow pulse, slow-irregular pulse, regularly intermittent pulse, and tremulous pulse, with each described in detail. The second is the collection and preservation of a large amount of important literature such as the method of pulse taking before the Jin Dynasty, the pathological changes reflected by the pulse condition, and the clinical significance of the pulse diagnosis.

(b) Chao Yuanfang and his General Discourse on the Causes and Manifestations of Diseases

The General Discourse on the Causes and Manifestations of Diseases of Chao Yuanfang from the Sui Dynasty is the first monograph on etiology and the symptoms and signs of diseases, also known as the *Causes of Diseases by Chao*. It made great breakthroughs in the traditional understanding of six excesses and seven emotions. For example, it contends that fulminating infectious diseases are "infections caused by epidemic pathogenic Qi"; scabies are "caused by tiny worms invisible to the naked eye"; and lacquer dermatitis is caused by the patient's "intolerance to lacquer by physical nature," which is a prototype of allergies. In addition, it has a deeper understanding of the manifestations of diseases. For instance, it classifies jaundice into twenty-eight different types, for example: jaundice due to improper food, alcoholic jaundice, damp jaundice, and jaundice due to sexual intemperance.

(c) Sun Simiao and his Qian Jin Fang (Thousand-gold Essential Formula)

During the Tang Dynasty, Sun Simiao wrote *Beiji Qian Jin Yao Fang* (*Thousand-gold Essential Formula for Emergency*) and *Qian Jin Yi Fang* (*Supplement to the Thousand-gold Essential Formula*), which are referred to together as *Qian Jin Fang* (*Thousand-gold Essential Formula*). *Qian Jin Fang* has sixty volumes and records more than 6,500 formulas. It is a systematic summary of medical science before the Tang Dynasty, known as the earliest encyclopaedia of clinical medicine in China. *Beiji Qian Jin Yao Fang* was the first work to propose a complete set of methods for the classification of syndrome differentiation and the treatment of miscellaneous diseases based on the cold, heat, deficiency, and excess of the solid-hollow viscera. It also introduced a method of classifying syndromes according to formulas in the *Treatise on Cold Pathogenic Diseases*.

1.2.3 The Song, Jin, and Yuan Period

Since the Song Dynasty, many doctors have innovated and put forward their own unique insights, based on their predecessors' achievements and their own practical experience, thus making creating new breakthroughs and developments in CM. Various specialist and comprehensive treatises and works emerged. Among those doctors, four in the Jin and Yuan dynasties made significant contributions to the development of Chinese medical theory.

(a) Liu Wansu – the representative figure of the School of Cold-cool Treatment

Based on "fire and heat," Liu Wansu (also known as Liu Hejian) proposed that "six seasonal Qi can all transform into fire," which means that the wind, cold, summer heat, dampness, dryness, fire, and other exogenous pathogenic factors in the natural world can be transformed into fire in compliance with the Yang and heat of the human body after invading the human body. He also stated that, "The excess of five moods produces severe heat," which means that the extremity of the five moods of anger, joy, anxiety, sorrow, and fear can affect the solid-hollow viscera by causing the stagnation of Qi movement and heat transformation from the Yang. Therefore, Liu Wansu was skilled in the use of cold-cool drugs in clinical treatment and is known as the representative figure of "the School of Cold-cool Treatment."

(b) Zhang Congzheng – the representative figure of the Evileliminating School

Although Zhang Congzheng (also known as Zhang Zihe) was not taught by Liu Wansu in person, he respected and viewed Liu as his teacher. Zhang did not focus on the pathological mechanism of fire and heat, but thought highly of Liu's idea of dispelling exogenous evil. Academically, he advocated that "diseases are caused by evil" and "the dispelling of evils can restore health." He developed a unique treatment of diseases which includes eliminating evil with three methods: sweating, vomiting, and purging. Therefore, Zhang Congzheng is known as the representative figure of "the Evil-eliminating School."

(c) Li Dongyuan – the representative figure of the School of Invigorating Earth

Li Dongyuan (also known as Li Gao) attached great importance to the role of the spleen and stomach in human-life activities. He believed that the

spleen and stomach are the roots of primordial Qi, and put forward the view that the "internal damage of the spleen and stomach is the cause of all diseases," so he was good at using drugs that invigorate and benefit the spleen and stomach in the clinical treatment of diseases. As the spleen and stomach correspond to the Earth in the theory of the five elements, Li Gao is known as the representative figure of "the School of Invigorating Earth."

(d) Zhu Danxi – the representative figure of the School of Nourishing Yin

Zhu Danxi (also known as Zhu Zhenheng) combined the studies of Hejian, Dongyuan, and Zihe, and was good at treating miscellaneous diseases, proposing many innovative ideas. He argued that "Yang is often excessive, and Yin is often inadequate." He believed that diseases are mostly caused by "an insufficiency of Yin." In clinical practice, he often adopted the method of nourishing Yin to treat diseases, so he is regarded as the representative figure of "the School of Nourishing Yin" by later generations.

The four doctors Hejian, Zihe, Dongyuan, and Danxi each developed their own academic theories from different angles. Therefore, the *Siku Quanshu (A Full Annotated List of the Complete Library in the Four Branches of Literature)* points out that the different schools of Confucianism were formed in the Song Dynasty, and the medical schools in the Jin and Yuan dynasties. Many different schools of CM continued to this day.

1.2.4 The Ming and Qing Dynasties

The Ming and Qing dynasties are an important period of the further development and integration of CM. First, medical theories and methods were innovated at this time, such as the formation and prosperity of the school of epidemic febrile diseases. Second, the existing medical achievements and clinical experience were organized and compiled into integrated medical pandects, classified reference books, and book series.

(a) The School of Seasonal Febrile Disease

Wu Youxing wrote *On Pestilence*, in which he contends that plagues are caused by the "epidemic Qi," and, in contrast to the six exogenous excesses, the "epidemic Qi" is not wind, cold, summer heat, or dampness. It can be transmitted through the nose and mouth, causing corresponding diseases. It is advisable to use a highly targeted formula to "expel evil" to treat the diseases. A whole set of theories pioneered the study of infectious

diseases in China. The "epidemic Qi" pathogenic theory laid the foundation for the formation and improvement of the theory of Epidemic Febrile Disease.

Ye Tianshi studied the seasonal febrile diseases by observing the pathological changes of the defensive Qi and nutrient blood, and found that the diseases include four pathological stages, from the mild defence aspect syndrome to the more severe Qi aspect syndrome, the syndrome of nutrient aspect and the syndrome of blood aspect. As a result, he developed a set of therapies which adopt the sweating method in the defence aspect syndrome, the Qi-clearing method in the Qi aspect syndrome, the method of the penetrating nutrient aspect to expel evil in the syndrome of the nutrient aspect, and the method of cooling and dissipating blood to avoid consuming and damaging blood when the disease develops into the syndrome of the blood aspect. In his book, he initiated the methods of syndrome differentiation and treatment formulation according to the defence-Qi-nutrient-blood theory of seasonal febrile disease, and thus founded the rules and methods to deal with these diseases. Hua Xiuyun and other disciples of Ye collected his medical records in his later years, and compiled and classified them into the Guide to Clinical *Practice with Case Records*, which has become a must-read book for CM practitioners.

Wu Jutong wrote the *Detailed Analysis on Epidemic Warm Diseases*, in which he created a syndrome differentiation based on the triple-Jiao theory for seasonal febrile disease, and confirmed that, normally, the seasonal febrile disease is transmitted sequentially from the upper Jiao to the middle Jiao and to the lower Jiao. This method is a great breakthrough as it works quite well in the syndrome differentiation and treatment of dampheat diseases in the seasonal febrile disease.

(b) Epitomes of Chinese medical works

Li Shizhen's *Materia Medica Category* has a total of fifty-two volumes with 990,000 words, recording 1,982 drugs. The book provides a complete classification of drugs and a systematic summary of the pharmacological achievements before the sixteenth century. It spread to North Korea, Japan, and other countries shortly after it came out, and was translated into Japanese, Korean, Latin, English, French, German, Russian, and other languages. It was quoted extensively by Darwin, who referred to it as the "Ancient Chinese Encyclopaedia." Joseph Needham from the United Kingdom crowned Li Shizhen the, "Prince in the field of pharmacology."