

## Formation of Prototype for Chinese Medicine\*

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(Received 12 April 1990, accepted 14 June 1990)

Chinese medicine has characteristics distinctive among traditional Asian medicines. Unique therapeutic techniques, such as acupuncture and moxibustion, which cannot be found in any other medical practice, constitute an essential part of Chinese medicine. The importance of acupuncture and moxibustion does not lie only in the fact that they are widely practiced in various parts of the world but also in that the invention of acupuncture and moxibustion characterizes Chinese medicine as it is today.

The oldest description of acupuncture and moxibustion is found in the *Huang Ti Nei Ching* 黄帝内经 (Yellow Emperor's Internal Classic). This is a book of basic medicine which encompasses physiology, pathology, anatomy, diagnosis and hygiene and, at the same time, includes acupuncture and moxibustion. The introduction to acupuncture therapy methods is worth special attention. This fact suggests that medical theory was formulated by those doctors who developed the theory and practice of acupuncture and moxibustion. In fact, a series of medical literature that was unearthed from the *Ma-wang-tui* 馬王堆 Han-grave site in 1973 at Ch'angsha in south China, gives us clues to elucidate the development process of Chinese medicine and also attests to the fundamental role that acupuncture and moxibustion therapy played in the process.

In the present paper, I would like to overview the development process of Chinese medicine which completed its prototype formation by the end of the Han dynasty. The formative period of Chinese medicine may be divided into four stages in its formative era: 1) development of acupuncture and moxibustion; 2) formulation of medical theory with close connection to acupuncture and moxibustion therapy; 3) beginning of *pen-ts'ao* 本草 (pharmacology) along with the structural formation of acupuncture and moxibustion medicine; and 4) development of a theory derived originally from the acupuncture and moxibustion medicine into the basic theory for medicine based on pharmacology. The first and second stages run from the Warring States period through the beginning of the Late Han dynasty (4th century B.C. to early 1st century A.D.). The third stage corresponds to the

\* This paper was originally a lecture given at the Third International Congress on Traditional Asian Medicine on the occasion of the conferring of the First A. L. Basham Medal on the author, July 4, 1990, in Bombay, India.

end of the Early Han to the early Late Han dynasty (from the end of the 1st century B.C. to the early 1st century A.D.). The fourth stage proceeded towards the end of the late Han dynasty (from the end of the 2nd century to the early 3rd century).

Judging from the script and the style of calligraphy that appears on the silk cloth, the *Ma-wang-tui* medical manuscripts were perhaps a copy made about 206 B.C. when the Ch'in dynasty was replaced by the Han dynasty. Therefore it is safe to assume that the original was written in the middle of the 3rd century B.C. at the latest. According to the book catalogue compiled at the end of the Early Han dynasty, the medical literature at the time was categorized into three groups: Acupuncture and moxibustion and medical theory; clinical medicine excluding acupuncture and moxibustion; and hygiene. The *Ma-wang-tui* medical manuscripts encompass all three areas and therefore allow us to speculate about the overall situation of medicine at that time. The *Ma-wang-tui* medical manuscripts thus shed light on how Chinese medicine originated. Until the *Ma-wang-tui* manuscript was unearthed, the oldest medical literature ever known had been the *Huang Ti Nei Ching*, which appears in the above mentioned book catalogue.

In the *Ma-wang-tui* manuscripts, what attracted our attention most and thus led to new historical discoveries are the following. First, moxibustion therapy was mentioned but not acupuncture therapy. This confirmed the earlier understanding that we had developed from other literature; that is, the mentioning of moxibustion therapy goes as far back as to the middle of Warring States period, the 4th century B.C., but the first record of acupuncture therapy can only be seen in the early part of the Early Han, the 2nd century B.C. This allows us to establish a new hypothesis. The establishment of moxibustion therapy preceded the invention of acupuncture therapy and acupuncture developed on the basis of moxibustion. The origin of moxibustion goes back to the late Ch'un Ch'iu period, the 5th century B.C., but acupuncture therapy probably emerged in the second half of the 3rd century B.C., from the end of the Warring States period to the Ch'in dynasty. This hypothesis, in my opinion, neither conflicts with historical records nor archaeological evidence, but explains the way in which acupuncture and moxibustion medicine evolved remarkably in both techniques and theory during the Han dynasty.

Secondly, these manuscripts show that the concept of *mo* 脈 (vessels) and the idea that diseases are subject to the condition of *mo* had been well established. *Mo* is a basic concept of acupuncture and moxibustion medicine and later came to be called *ching-lo* 絡 (conduits and branches). In the *Ma-wang-tui* medical manuscripts, eleven vessels (*mo*) were considered to run through the body, each starting from the hand or foot, through the torso to the head. Each disease was connected to one of these eleven vessels. In these vessels run *Chi* 氣 and blood and when the flow is disturbed, disease occurs.

Thirdly, in these manuscripts, there is no mention of acu-points, the therapy points located at specific places on the vessel. All treatments applied moxa to the vessel that related to the disease. From the viewpoint of acupuncture and moxibustion, to cure a disease means to normalize the disturbed flow of the vessel. In the treatment developed during the Han dynasty, the needle or moxa were applied to the acu-points.

In the *Ma-wang-tui* medical manuscripts, neither the names of the acu-points appeared nor was there any indication of the points which came to be recognized as acu-points in the later age. This clearly tells us that the vessels were discovered first and gradually the

acu-points were established as places where the curative effect was stronger. Thus, the previous assumption that acu-points were discovered first and the concept of vessel was formed afterwards to connect these points was incorrect. To be more precise, there must have been a transition from the moxa treatment on a vessel to the needle (and moxa) treatment of the acu-points. Compared to moxibustion, which applied thermal stimulation on the body surface, acupuncture applies physical stimulation inside the body, and is thus far more dangerous. Besides, each acu-point has its distinctive function. This probably became recognized through acupuncture.

Fourthly, sphygmological diagnosis had been developed. In both acupuncture and moxibustion medicine, which were structured on the concept of vessels, the diagnostic method was also based upon sphygmology. According to this method, the pulse condition differs from one syndrome to another. The pulse of a patient is the expression of a comprehensive and integrated syndrome. Therefore the characteristics of pulse are categorized into nearly thirty concepts called *mo-hsiang* 脈象 (pulse images). The patient's pulse is perceived as a set of certain pulse images. Based on the pulse images, the diagnosis would specify to which vessel the disease is related and further identify the disease or the syndrome. The treatment is then decided on accordingly. These *Ma-wang-tui* medical manuscripts describe an early stage in the development of sphygmological diagnosis, but several concepts that describe the pulse appear in the manuscripts.

Moxibustion treatment, in my opinion, is derived from magical treatments that tried to drive out evil spirits causing sickness, by burning incense produced from fragrant herbs. This treatment had transcended its magical character by the end of the Warring States period, introduced the concepts of *ch'i* and *Yin-Yang* into diagnoses, and was beginning to establish itself in an organized manner. What expedited the process was the invention of acupuncture treatment.

The transformation of moxibustion with thermal stimulation to acupuncture with physical stimulation was an epoch-making technical innovation full of intellectual stimuli (for creation) in the field of medicine. These innovators, who claimed that all diseases could be cured with a single needle, developed many effective techniques. In order to provide theoretical support to these techniques they energetically devoted themselves to research activities. They also wrote and compiled medical textbooks and educated their successors, and thus gradually created schools of medicine. It was the innovators of these new schools who developed new treatments which were based on acupuncture with the supplementary use of moxibustion and pharmacotherapy that built the foundations of Chinese medicine.

Under the influence of Taoism acupuncture and moxibustion medicine regarded the human body as a homeostatic system, comprised of *ch'i*, namely an intricate balance of *Yin-Yang*. *Ch'i* is the vital force, the matter that potentially possesses the energy that constitutes the human body. *Ch'i* functions are based on the conflicting principle of *Yin* and *Yang*. These conflicting *ch'i* are called *Yin-ch'i* and *Yang-ch'i*. Disease is the disturbance of the balance caused by the excess or deficiency of *ch'i* of *Yin-Yang*. Therefore the objective of the treatment is to recover the balanced state of *ch'i*.

The theoretical mechanism of acupuncture-moxibustion medicine, its ideal type, as established by the innovators in the Han dynasty, can be reduced to the following statements. First there are vessels (*ching-lo*) that reach all over the body. *Ch'i* flows in the

vessels and creates overall circulation. *Mo-hsiang* (pulse image) is created by the flow of *ch'i* and blood in the vessels. Recognition of the pulse image is the basis of the subsequent diagnosis. Disease, which is a dysfunction of various parts of the body, is caused by the imbalance of *ch'i*, either in excess or deficiency of *Yin* or *Yang*. Acu-points are distributed on the vessels as therapy points. Treatment entails identification of the vessel that controls a particular disease and the relation of that vessel to other vessels. Physical and thermal stimulation of these vessels that replete and reduce the *ch'i* of *Yin-Yang* and smooth out the flow of *ch'i* and blood would ultimately help recover the normal body function and thus promote life activity.

In the description of this mechanism the concepts of hydraulic engineering are greatly utilized. For example, the main vessel *ching* (conduit), means big river, and the *lo* (branch) that connects *chings* means small river. The relation to hydraulic engineering is not limited to borrowing its terminology. For this mechanism immediately reminds us of the water network which constituted the mainstay of the Chinese transport and irrigation systems, and of the bureaucratic organization and its function to manage that network. In fact, this mechanism of acupuncture and moxibustion must have been modeled after the bureaucratic system. The Han dynasty, which was the first stable bureaucratic state, provided the right milieu for the conception of acupuncture and moxibustion medicine.

At the end of the Early Han dynasty, when the activities of the acupuncture and moxibustion school were at their height, pharmacology was born. The first pharmacopeia categorized medicine into two groups. One was to maintain health, and the other to cure diseases. The properties of medicine were described by five tastes and the presence of toxicity. Later, pharmacological study was advanced and several medical substances were combined into drugs of many different prepared forms. Sometimes, over a dozen different medical substances were put together into a drug. However, clinical medicine, mainly based on pharmacological therapy, was on the whole in an experiential stage. It was acupuncture and moxibustion therapy that provided the chance for clinical medicine to take the great leap forward.

The school of acupuncture and moxibustion medicine utilized pharmacological therapy complementarily. General practitioners would use drugs and acupuncture and moxibustion together. Naturally they tried to expand and apply the theory and diagnostic method of acupuncture and moxibustion to general clinical medicine. The integration of sphygmological diagnosis and administration of drugs occurred as early as the first half of the Early Han dynasty. However, its systematization was achieved in the *Shang Hand Lun* 傷寒論 (On Cold Induced Body Injuries) by *Chang Chung-Ching* 張仲景 at the end of the Late Han.

This book reorganized drug therapy systematically by establishing its links with sphygmological diagnosis. Based on the sphygmological diagnosis of six conduits vessels which consist of three *Yin* (*T'ai-Yin* 太陰, *Shao-Yin* 少陰, and *Chueh-Yin* 厥陰) and three *Yang* (*T'ai-Yang* 太陽, *shao-Yang* 少陽, and *Yang-Ming* 陽明), syndromes are categorized into six types, the so-called six-conduits-diseases (six principal syndromes). The drug types for treatment correspond to these six types of syndrome diagnoses. Here, one drug type means that a series of drugs share a common main ingredient. To different types of syndromes different types of drugs would be administered. Minor components of the drug

would be adjusted to minor differences of symptoms within a syndrome type. Generally speaking, *Yang*-diseases are light and *Yin*-diseases are heavy. The pathological assumption is that when a disease progresses, it moves from the three *Yang* diseases to the three *Yin* diseases. This method, called analysis and differentiation of Six Principal Syndromes, which combined diagnosis and treatment, laid the very foundations of clinical medicine. This was later heightened to the level of general methodology by doctors in the Sung, Chin and Yuan dynasties and continues to the present day. The *Shang Han Lun* was an excellent integration of experiences and theory of classical medicine.

In the history of Chinese traditional sciences, we often observe quite intriguing phenomena. The prototype of this science was formed during the Han dynasty. There is a strong tendency for these prototypes to be passed on, and thus the fundamental characteristics of the prototypes have been maintained; they have been expanded quantitatively, making them more precise and systematized. This tendency can be seen clearly in mathematics, astronomy and pharmacology. The history of medicine is not an exception. Thus, the driving force for the formation of the prototypes was the invention of acupuncture and moxibustion.