

## History of Kampo Medicine

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Kampo medicine is the descriptive term used in Japan for TCM (in a broad sense Kampo medicine refers to the entirety of traditional Chinese medicine practiced in Japan, and in a narrow sense specifically to herbal medicine). This form of medicine differs from the Chinese form of TCM and is characterized by many unique theories and therapies. It is necessary to review the 1500-year history since the introduction of this system into Japan and thereby illuminate the characteristics of Kampo medicine.

### Introduction and imitation of Chinese medicine

Traditional Chinese medicine was brought to Japan in the 5th century via the Korean peninsula. At that time Japan maintained an extensive exchange with the Korean peninsula and immigrants from the peninsula (some Korean physicians had been invited to Japan) had provided the people of the ruling class in Japan with a certain degree of insight into Chinese medicine. From the end of the 6th century direct exchange with China started and by the 7th century the Japanese government sent scholars for foreign studies with their ambassadors to China in the Sui and Tang periods. Some studied the Chinese medicine before their return to Japan.

In 701 the government enacted laws (including items related to the medical system) modeled according to the Chinese system used in the Tang period. For the purpose of medical education a curriculum was established, where the textbooks included classics like the "Huang-Di Nei-Jing" (Yellow Emperors Classic of Internal Medicine), medical encyclopedias, textbooks of pharmacology, pulse diagnosis and the like. The duration required for the study of medicine was set at 6 years. This was a period of imitation during which almost no original contributions introduced by Japanese were observed, but in 984 the oldest Japanese medical encyclopedia, the "Ishinpo" was compiled (the contents of which are, however, mostly citations from Chinese medical textbooks).

This system of medical affairs served the ruling class of the government and functioned as long as the aristocracy controlled the government until the end of the 12th century. After the warrior class seized political power and moved the capital from Kyoto to Kamakura the system was perfunctorily handed down (this government is called the Kamakura Shogunate). Medicine was handed down in specialized families and in extremely confined conditions. Yet, during this period, Buddhism, concentrating on salvational activities, suddenly flourished and people involved were looking for a new medicine, breaking free of the Kyoto medical community. The representative priest and physician of the time was Shozen Kajiwara (1266-1337), who wrote

two large medical encyclopedias between 1302 and 1327. In these works an enormous amount of Chinese medical books are cited as references.

### Early development

In the 15th century the second government of the warrior class, the Ashikaga Shogunate, placed great importance on trade with China of the Ming period and dispatched many trading vessels. Beside these there was a significant number of private vessels scuttling between China and Japan. While this led to the import of many Chinese articles, it simultaneously also increased the number of people visiting Japan. Moreover, since Buddhist priests and intellectuals had found an interest in medicine, the merchant vessels imported large quantities of medical references and drugs. Yet, during that time the trade partners of the Japanese were Chinese merchants and information pertaining to the capital, Beijing, was scarce. The imported medical books tended to be slightly biased. They did not represent the most advanced medicine of the Ming period, but the majority of the books were rather of the preceding Sung period. For this reason Japanese medicine adapted itself to that period.

This situation was changed by Dosan Manase (1507-1594) who was born in Kyoto. After studying in a Buddhist temple, he headed for the seat of learning in east Japan, the Ashikaga Gakko (Ashikaga school) for further studies (the Ashikaga school was introduced to the world in 1550 by Francisco de Xavier as the "largest and most famous general university in Japan").

Koga, located close to this school, was the seat of the Ashikaga Shogunate regional government in East Japan. In its vicinity lived excellent physicians together with many intellectuals. Manase studied first under physicians in charge of important government officials as well as priests who had returned from studying medicine in China and later the contemporarily most advanced medicine of the Ming period. Because he was exceedingly sagacious he understood almost all of the material. As a result he acquired a level of medical learning and skills that matched the physicians of the Ming dynasty.

Following his return to Kyoto in 1545 he applied this knowledge, referring to a large number of books, to create his own unique medical system. The fruit of his labor culminated in his main work, the "Keiteki Shu". The purpose of this compilation was to unify the process from diagnosis to therapy based on traditional medical theories. This structure resembles very closely the current form of TCM. A school building, the "Keiteki In", was erected in which the medical system he had founded was taught to students gathering there from all over the country. This system became the Japanese medical standard of the day and spread throughout the country.

During the latter half of the 16th century the power of the Ashikaga Shogunate declined, and in the course of

multiple civil wars over a period of several decades, the Tokugawa Shogunate was established in 1603. This government transferred the capital to Edo (present day Tokyo) in order to govern the country, divided the country into more than 200 small feudal domains and appointed feudal lords (daimyo) to rule those particular domains, while the shogun maintained a central authoritative government. The government of the Emperor in Kyoto continued to exist as a government without any real powers to which perfunctory government officials were appointed. The same situation applied to medicine.

Each feudal domain had an administrative organization resembling that of the central government. Initially the medical system was not exceptional. During that period there had not yet been any attempts at state regulated educational systems, so that people who studied in private medical schools were free to open offices in the cities and establish their practice there. The leaders of the private schools had studied in Manase's school and most were excellent physicians.

Many of the private schools were found in Kyoto and Edo (present day Tokyo), so that students intending to study medicine gathered in these two cities. The publication of medical books gradually increased, and in addition, the classics and books of the Ming period, reprints and commentaries trying to render difficult medical issues easier to understand circulated. These various commentaries became very important for the tradition of Japanese Kampo medicine.

Following the late 16th century new situations arose between Japan and the continent. One of those events was the attempt of Hideyoshi Toyotomi, for a short period the supreme ruler of Japan, to invade the Korean peninsula. The invaders plundered cultural artifacts including medical books and technical experts (including physicians) throughout the various parts of the peninsula and brought them back to Japan. In particular, the experts on wood block printing made important contributions to the Japanese publishing business. Publication of medical books relied largely on the technical expertise of these people.

Another event occurring a little later was the downfall of the Ming dynasty. People being attacked by the Manchurians (of the later Qing period) fled to the south and a small minority of these people (approximately 20-30,000) sought refuge in Japan. Here they were accepted by the Tokugawa Shogunate newly formed in 1603. Among these people were excellent physicians who taught the Japanese the newest level of Chinese medicine of the day.

These two events greatly promoted during the 17th century the introduction and spread of the latest medical knowledge from China and the Korean peninsula to Japan.

As stated above, the conceptual world of Japan at the time regarded Confucian studies to be of highest priority

and studies of Neo-Confucianism, as the conceptual basis of the Tokugawa Shogunate, were promoted (serious introduction of Neo-Confucianism to Japan occurred during the latter half of the 16th century). Yet, by the latter half of the 17th century, new trends were observed in this branch of learning. Some of the progressive scholars denied Neo-Confucianism and attempted to return to the original Confucian views. Thus, the classics of the Confucian area were no longer interpreted along the Neo-Confucian lines of thought, but the trend among these scholars was to interpret the classics according to their own views. This also influenced the practice of medicine, which always stood under the strong influence of conceptual Confucianism. That is why the medical original classic "Sho Kan Ron" (Shang han lun) was interpreted according to the views of the medical scholars and not according to the interpretations prevailing during the Ming period in the same way that the Confucianists emphasized Confucius's original texts. This led to the spread of a movement, placing the utmost importance on clinical applications.

One cannot disregard the extensive studies of the Chinese "Shang han lun". In China the "Zhung-Jing's Encyclopedia" of 1599 (this included the "Shang han lun" and "Jin gui yao liu") was published. Around this time research on the "Shang han lun" started. This boom soon caught fire in Japan and in 1659 the Japanese re-print of "Zhung-Jing's Encyclopedia" and a number of other classic texts were published. Moreover, during this period research scriptures dealing with the Chinese "Shang han lun" were brought to Japan, immediately receiving much attention and motivated many people to study this world.

The second trend motivated the Japanese physicians to emphasize the original medical text of the "Shang han lun". This was a characteristic Japanese event and this school of thought later was designated the "classic school" (Koho Ha). The origin of the classic school was the revival of ancient medical saints (medical arts) in modern times, but the actual manifestation varied with each individual and through the different periods.

### **Creative Period**

While the physicians of the classic school studied the "Shang han lun", they criticized at the same time traditional medical theories. Later, these concepts formed the characteristics of this school. During the early period there were influential people among the members of this school, their problem awareness was based on the "Riki Nigen Ron" (Two Principle theory) of the Neo-Confucianism. They considered "qi" (spirit) to be more important than "li" (reason) and thus established theories emphasizing "yang qi" or the "movement of qi". These concepts received much attention as new hypotheses of physiology and pathology, but did not develop beyond that, so that there was little hope, as will be stated later, for the appearance of new theories.

The "Shang han lun" may have been considered by this school of thought as the one and only classic and gave rise to an enormous number of research books. The most outstanding methodologic characteristic of their study was that they tried to explain this classic through the rules it provided itself. Todo Yoshimasu (1702-1773) was the one person who promoted this methodology to its extreme limits. His appearance on the scene abruptly changed the form of Japanese Kampo medicine.

Yoshimasu gave his own experiences and the entries in the classic a lot of thought and came up with the concept that "all diseases arise from a single toxin" (Manbyo Ichidoku Setsu = single toxin hypothesis of diseases) and thus arrived at a view of pathology entirely new and different from the common one. Drugs were supposed to expel this toxin and he set forth that the prescriptions listed in "Shang han lun" and "Jin gui yao liu" were highly effective for this purpose. Although there was only one toxin, it could reach various different places, causing a multitude of different symptoms. Abdominal examination was given great importance as the one diagnostic method of choice to determine the location of the toxin. Abdominal examination is a uniquely Japanese examination procedure. Its origin reaches back to the 16th century and Todo Yoshimasu inheriting its tradition, relied for his use available prescriptions. Moreover, he insisted that "prescriptions were the most important thing in medicine" and studied how individual prescriptions could be used for the expulsion of the toxin.

For this purpose he temporarily broke up the "Shang han lun" and "Jin gui yao liu", reassembled them classified by drugs and termed this work "Ruiju Ho" or "Lei Shu Fang" (in Chinese). In this book the individual paragraphs are arranged according to prescriptions, which served to facilitate clear comprehension of the indications for each drug. This arrangement does not depend on traditional theories, but allowed one to administer appropriate treatment provided a set of symptoms could be identified. This "treatment system of specific prescriptions for specific symptom complexes" is called "prescription-symptom relation". Later this system continued to play an important role in the Japanese Kampo medical system.

Yoshimasu also tried to deduce a posteriori the action of the individual drugs from the entry text in the "Shang han lun". When regarding prescriptions containing several crude drugs he searched for shared meanings in the text pertaining to the indications, identified the actions of the individual drugs and detailed them in his book "Yakuchou" or "Yao Chang" (in Chinese). In this way he supported his theories with pharmacology.

The "single toxin hypothesis of diseases" hypothesis did not worry about the right qi, but concentrated solely on the presence of evil forces and his treatment was characterized by dispelling this evil. Yoshimasu's

concepts gave rise to extensive discussion and quickly spread throughout Japan. This resulted after a short while in the collapse of the Manase school of medicine. However, while the single toxin hypothesis was one of the defining characteristics of Yoshimasu's medicine, it too gradually fell into disuse after his death and only the "prescription-symptom relation" was passed down to future generations.

The classic school of medicine was, as stated above, not uniform, but had several other special characteristics such as emphasizing the "Shang han lun", rejecting the traditional medical theories, and attempt to find treatment principles out of the "Shang han lun".

### Eclectic Period

Until the early 18th century the theories of traditional medicine formed the roots of medicine, including the Manase school of basic theories, but were rejected by the advocates of the classic school. Instead speculation was given up and therapies that could be based entirely on directly verifiable things became the mainstream. Symptoms were minutely examined, symptom patterns identified and treatments administered matching those patterns. The physicians of the time founded their practices under these circumstances on their own personal experiences, experience based personal hypotheses and the integration of therapeutic methods from other fields (like folk medicines and blood letting) and practiced their own individual eclectic styles. The result was that from the later half of the 18th century until the early 19th century an abundance of experiences was accumulated using this method. These people were called eclectics.

During this time the completely rejected traditional medical concepts by Todo Yoshimasu again came into use because of their clinical necessity. The eight principles of yin-yang, exterior-interior, cold-heat, deficiency-excess, or greater yang disease, brighter yang disease and similar terms revived the six channel concepts of the "Shang han lun". Also, a child of Todo Yoshimasu, Nangai Yoshimasu, proposed the hypothesis that although there is only one toxin, this may superimpose on qi, blood or water and thereby cause the symptoms of disease. These technical terms appear on first sight to be the traditional medical terms used previously, but actually refer to completely different things. They possess almost no meaning related to physiology or pathology, but are instead characterized in that they are used simply as indices of classifications.

Also, during this period academic conflicts arose between Kyoto and the capital Edo (present day Tokyo).

The physicians of Kyoto placed their greatest emphasis on the epoch of the "Shang han lun" and frequently used prescriptions listed in this classic. A representative figure of the contemporary eclectics was Tokaku Wada (1742-1803) from Kyoto. He acquired the

skill to use a relatively small number of prescriptions (a few dozen) for their respective indications through experience and was very skillful in applying these prescriptions to various different pathologic conditions. Kinkei Nakagami (1744-1833) also came from Kyoto and classified therapies most suitable for individual diseases, not restricting himself to Chinese herbal medicine, but also successfully used folk medicines, acupuncture and moxibustion, blood letting, affusions, and the like, for the treatment of diseases.

Conversely, Kakuryo Katakura (1751-1822) from Edo had referred to Chinese medicine up to the Sung dynasty, fitting specific prescriptions to the various conditions, thus achieving excellent results. He is known to have performed in 1794 the world's first resection of a nasal polyp with a snare.

In the latter half of the 18th century new trends appeared in Confucianism and the study of historical artifacts flourishing in China of the Qing period was introduced to Japan. Medicine too came under the influence of this trend and the study of historical artifacts began to flourish in Japan. Classic texts like the "Huang-Di Nei-Jing" and "Shang han lun" were subject to strict criticism, which led to the preparation and publication of the correct texts. These movements were initially propagated by individual persons, but later also acknowledged by the Tokugawa Shogunate that established a national medical research institute (Edo Medical House). Here research and education were performed simultaneously. The third director of the institute, Genkan Taki (1754-1810), has left the world many great achievements. Among these his comments on the most important classic texts of traditional Chinese medicine "Huang-Di Nei-Jing", "Shang han lun" and "Jin gui yao liu" are of particular excellence. Later, while the institute was responsible for a portion of medical administration, the Taki family made remarkable achievements in the study of historical artifacts. The result was that the study of historical artifacts became the mainstream academic trend in Edo.

The serious introduction of western scientific medicine presented in Dutch to Japan began in the 19th century. In the middle part of the 18th century, during the period of Yoshimasu's activity, the gradual introduction of western medicine had already begun. While few in number, some medical books of highly advanced content had been imported and progressively minded physicians studied and translated these. The first translation of such a book was the "Ontleedkundige Tafelen" by the German Johan Adam Kulmus. This edition expanded the view of the Japanese, who had previously known only traditional Chinese medicine. All of a sudden a view of European trends was available.

Initially only anatomy and surgery in western medicine were introduced and started to gain ground, but

soon internal medicine and other clinical applications started to spread. In particular a form of integrative medicine was practiced in the field of surgery. The representative person of this era, Hanaoka Seishu, resected in 1805 a breast cancer under the world's first general anaesthesia. Moreover, nearing the end of the Shogunate, western scientific medicine gained a lot more momentum, so that a western medical doctor was assigned as the physician responsible for the Shogun. A demonstration of this medicine's effectiveness in form of smallpox vaccinations made clear that Kampo medicine was not necessarily any longer the only form of medicine. The Meiji government later succeeded in adopting German medicine, because Japan had shown that it had been able to assimilate and apply western medicine of the highest level worldwide.

The ranks of Kampo physicians working in the field of internal medicine having difficulties in integrating both medical systems according to Hanaoka's approach, assumed a hostile attitude toward western medicine and tried to reject it. But their attempt at opposing the trends of the time failed and western medicine spread still further, leading to the feared decline of Kampo medicine.

Under these circumstances, many physicians believing in the superiority of Kampo medicine, appeared and tried to develop it further. At that time many physicians conducted their clinical practice along the lines of Yoshimasu's concepts and among these Yodo Odai (1799-1870) practiced a consequent Yoshimasu style medicine and became renowned for his excellent treatment. He added his personal experiences in the form of comments to Yoshimasu's "Ruiju Ho" and published his own book "Ruiju Ho Kogi". His book detailed explicitly how the prescriptions of the "Shang han lun" should be applied to the various pathologic conditions (The "Ruiju Ho Kogi" was a popular piece of reading during the renaissance of Kampo medicine in the 1930s and developed into a clinical guide. Its influence continues to the present day).

Gyoko Yamada (1808-1881) was one of the clinicians contributing to actual clinical practice. He was an outstanding personality who also had an academic side that led to his assignment as a teacher at the Edo medical research institute. He integrated the study of historical artifacts in clinical practice and applied past clinical descriptions and case reports into present clinical practice.

Another remarkable person was Sohaku Asada (1815-1894). He established a unique system based mainly on the "Shang han lun" and the medical theories of the Sung period. He was entrusted with important posts by the Tokugawa Shogunate and the new Meiji government. He is also known for having treated many important government officials and ministers of many foreign countries. His medical system was a broad-based

system combining the Kyoto and Edo schools and he is also well known for episodes describing his dealing with a sciatica attack in the French envoy, Leon Roche; or inducing recovery in the Taisho Emperor during a critical illness in his infancy.

While Kampo medicine developed, it divided into various coexisting schools by the middle of the 19th century. The study of historical documents achieved an unprecedented development. Before this background clinical experiences were accumulated in a preparatory step for further development. Yet, these trends came to a sudden standstill, as outlined in further detail below, because of changes in the political environment.

### Decline and Revival

Until the middle of the 19th century Kampo medicine made enormous contributions to the health of ordinary people. During this time there was both technical progress and academic development. Yet, when the new Meiji government (where the emperor again assumed the highest position in a constitutional monarchy) replaced the Tokugawa Shogunate in 1868, the circumstances relevant to medicine changed completely.

The new government was modeled after the political systems of America and various other countries, establishing guidelines that westernized politics, economy, education, military and various other institutions. While it suffered from unequal treaties with America and various other countries, it initiated a build-up of national strength according to the motto "national prosperity and defense".

Regarding medicine, there was a need for military medicine and for that purpose it was decided to adopt the most advanced German medical system. German medical educators were invited and highly advanced, specialized education started at the universities. All medical facilities of the former government were requisitioned by the new government or else abolished. After that, all practicing Kampo physicians had to terminate their profession in one generation (the profession of a physician was often hereditary) and regardless of how zealously their children or disciples practiced, they were not able to become physicians any longer.

People aspiring to become physicians were obliged to study western medicine at universities or specialized organizations and then pass an examination for practicing physicians. Although the curriculum did not include Kampo medicine, the people in charge of the relevant department at that time, did not reject Kampo medicine in itself. There was still room left to study traditional medicine after formally becoming a physician. This measure later led to the revival of Kampo medicine.

Kampo medicine was considered not to be proper medicine and as such banished from any official capacity. Social survival was permitted only for acupuncture and

moxibustion with permission of the regional government (refer to the special edition of "Japanese Acupuncture" for further details). The research of the constituent crude drugs of Kampo prescriptions (pharmacognosy) was at the time the most advanced academic subject and enthusiastically conducted in pharmacologic faculties of universities. The isolation of ephedrine from the ephedra herb by Nagayoshi Nagai is just one such example. In this way the traditional Japanese pharmacology was inherited and led to modern scientific research in Kampo medicine.

Having received a major blow from the government, Kampo medicine was now completely removed from the mainstream of medicine. In spite of the opposing movement of actual Kampo medicine practitioners (this movement is in terms of medical history very intriguing), there was almost no reflection on this situation at all during the 1900s. However, the small number of physicians who studied by the end of the Tokugawa Shogunate under the few remaining Kampo physicians (most of which had degrees in western medicine) started new research into Kampo medicine and applied this clinically.

During this period the Kampo physicians could grossly be divided into three different groups.

The first group was the successors of Shuhaku Asada, who practiced by the end of the preceding century. They handed the medical teaching of their master down while practicing in Tokyo, Osaka, and Kyoto and these disciples in turn trained their own students in their devotion for further development. This school belonged to the so-called eclectics.

The second group were followers of Wada Keijuro, who himself still being a young boy, saw his sister radically improve through Kampo medicine and thus decided to become a Kampo physician himself, later making great efforts in his attempt at facilitating the development in this field of learning. In 1910 he published the book "Ikai no Tetsui" (The Iron Hammer of the Medical World) wherein he used western medicine as academic background. The book provides an outstanding description of Kampo medicine as a form of clinical medicine and by which he pioneered the social revival of Kampo medicine. The basic style of the book was the same as that of Todo Yoshimasu and based mainly on the "Shang han lun" and "Jin gui yao liu". He and his successors formed a group of people belonging to the classic school.

Third, was the group of followers of Dohaku Mori, who was also a religious figure with his disciples. Mori entered into an apprenticeship with a not famous, but a very capable Kampo physician, where he acquired his medical skills. Adding his own personal ideas he created a unique classification of physical constitutions and later instructed younger generations. His treatment was

outstanding and in 1918, during the so-called Spain influenza epidemic, he classified this disease into three types, assigned different prescriptions to these types and thereby achieved great therapeutic success. His school belonged to the Gosei Ha (new world school).

Second generation followers of these schools cooperated later in the 1930s to establish the Japanese Kampo medical system. The results of these efforts found their common expression in the book "Practice of Clinical Kampo Medicine" (1941). This book was prepared for the purpose of offering the "busy clinician the possibility of acquiring Kampo medical skills without any background knowledge". It later became the archetype of literature on Japanese Kampo medicine.

The methodology outlined in this book closely resembles that put forward by Todo Yoshimasu. Specific prescriptions were assigned for specific symptom complexes and the concept therefore followed the tradition of the "prescription-symptom relation" (fang zheng xiang dui) where the prescription matches the Kampo diagnosis. It may be said to have developed based on the hypothesis that "prescriptions are the most important thing in medicine".

The revived Kampo medicine followed the lines of medicine as it had been practiced during the Edo period. It promoted a form of treatment that put little emphasis on the pathologic factors and mechanisms at work in the patients and therefore facilitated its application within the framework of western medicine. Later this contributed both positively and negatively to the future development of Kampo medicine. Put in another way, this form of medicine could be put to practical use from that time onward, provided there was a basic background knowledge in western medicine. Doubtlessly this was very convenient for physicians who had received only a western medical education but would like to give the use of Kampo medicine a try.

Actually, the application of health insurance to the prescription of Kampo medical formulas was introduced in 1976 on this basis and later saw a surprising growth, thus supporting this methodology. Conversely, the loss of traditional ways of thinking obstructed theoretical developments. This became a major obstacle in academic exchanges with China and Korea and various other countries with the similar traditional medical systems (and theoretical systems) by creating major systematic differences.

#### **Application of medical insurance to specific Kampo medical extracts**

Currently, even though Kampo medicine is not taught in medical school, herbal medicines are sold in pharmacies and traditional prescriptions in use (many of which are manufactured by small scale, by family

business type companies) are in use. Their constituents are actively studied as materials for new drugs. Furthermore, since the establishment of the Japanese health insurance system, health insurance currently covers more than 160 herbal formulas. While the policy of the Meiji government superficially had abolished Kampo medicine, it had survived among the people.

In 1976 the Ministry of Health and Welfare adapted the opinions from the chairman of the Japanese Medical Association, Taro Takemi who had a deep understanding of Kampo medicine, demonstrated strong political leadership, and made remarkable contributions to the medical administrative management of the Japanese government, which led to the approval of health insurance for Kampo medical prescriptions.

A number of pharmaceutical companies have started to manufacture these formulas. The sales strategies for these companies at the time were to use Kampo medicines based on names of diseases. Thus, while yin-yang, deficiency-excess and similar pathologic factors and mechanisms were largely neglected, identification of the symptom patterns called "Sho" was the only concept barely being accepted and used. This resulted in the use of large quantities of Chinese herbal extracts covered by health insurance in the clinical setting and a quick spread of these in the medical world.

These circumstances led to the appearance of a small number of physicians using Kampo medicine in a disorderly manner, yet did not entirely drive the development of Kampo medicine into an undesirable direction. A substantial amount of clinical research (including DB-RCT cumulative research) and pharmacologic research was conducted, also developing new applications and indications like relief of side effects of radiation therapy or chemotherapy. In this way a number of applications for a number of fields have been developed.

At the same time, limitations of this kind of application became evident. Already in the 1980s a number of problems had emerged. The first of which was the efficacy of Kampo medicine (extracts) for medical use. While the dose of Japanese Kampo prescriptions is quite small, the amount of extract contained in the extracts is even smaller. Regarding efficacy, this was reason why these formulas were thought of as possibly not being sufficiently effective. Following communication of this fact to the Ministry of Health and Welfare in 1985, the situation improved. However, the fact that the used doses were small, remained unchanged.

The second problem was that ready-made formulas could not be individually adjusted, preventing the prescriptions made to order for individual patients. To circumvent this problem a number of extracts were combined to provide a limited amount of freedom, yet this did not constitute a fundamental solution.

For the solution of this second problem a significant number of physicians adopted the original application form of these drugs, namely decoctions.

Thirdly, and this is the most important problem, limitations became clear, when Kampo medicines were prescribed according to western medical diagnoses and disease names instead of the original Kampo medical concepts.

A number of solutions to these problems have emerged.

The first of which was the reintroduction of a system similar to that used by the Japanese 400 years ago in modern traditional Chinese medicine (TCM). Because the traditional body concepts (anatomy, physiology, etc.) similar to those originally adopted by the Chinese and later used by the Japanese, had been replaced in a little over a century by western medical body concepts, comprehension of traditional TCM theories based on said traditional body concepts became almost impossible. This resulted in the necessity for physicians to relearn the TCM theories. A rather difficult undertaking. Even though identical Chinese characters are used in both systems, correct comprehension is currently quite difficult. A large number of relevant textbooks and references have been published.

Even though TCM has again become a subject of research among Japanese physicians, the Japanese have difficulties in grasping the abstract TCM theories, which makes a complete mastering of the subject difficult. Recently, Yoichiro Ebe developed a theory integrating these abstract theories with practical elements to facilitate their explanation. This theory is called "Keiho Igaku" (Classical formulation (jing fang) medicine) and assigns particular importance to the attempt at obtaining a detailed and concrete understanding of the functions of "qi" within the body.

Another problem is the adoption of modern medical research methods. In order to enable various practical clinical applications of Kampo medical extracts covered by the health insurance, cumulative research, including DB-RCT, have been performed and the formulations applied clinically based on these studies.

In this field the research into clinical epidemiology is particularly noteworthy. The research group of Hajime Haimoto examined more than 100 conditions for which patients received Kampo medicines, analyzed this data with a computer and calculated the odds ratio. One of the findings of their research particularly well known is that the use of *Poria Powder with Five Herbs* for headaches associated with a drop in atmospheric pressure carries a probability of being effective of more than 90% (see this journal, Vol. 1, No. 1).

In Japan, the study of galenicals has been a family tradition for more than 100 years. Application of modern methods in this field has led to further developments and

now similar studies performed for Kampo medicines have yielded corresponding results. Studies trying to identify the components of crude drugs or formulas are in the limelight of recent attention. However, the new techniques trying to identify "compounds in serum", following the intake of Kampo herbal formulas, are the most significant with application of this so-called serum, Kampo pharmacology attempts to clarify the pharmacodynamics of the crude drug components in the body. It gradually becomes clear that the enteric bacterial flora apparently plays an important role in the absorption of these components.

In Japan, there is another research area that the country can pride itself with before the world, and this is research into medical history, classical texts and bibliography. In the first half of the 19th century the Edo Gakko (Edo Medical House) led research efforts in this area to a culmination point, but after the adoption of German medicine, it lost its necessity and rapidly declined. Yet, this area of research has in recent years seen a renaissance and Hiroshi Kosoto, et al. of the Department of Medical History Research at the Oriental Medicine Research Center of the Kitasato Institute have published a series of new research results. The research into medical history on first view does not appear to have any direct bearing on clinical practice, but it plays an important role in the establishment of the foundation of Kampo medicine. Also, critical text analysis often provides hints for new clinical applications.

From a clinical point of view, the most important feature of Japanese Kampo medicine is the extensive accumulation of experiences in the use of "Shang han lun" prescriptions (including the "Jin gui yao liu"). In the past, Japanese physicians have been using these for conditions that are basically indications for different prescriptions. This successfully contributed to the demonstration of the inherently great potential of these drugs, indicated new forms of clinical applications and has thus also provided material for further studies. Researchers of Japanese Kampo medicine work with the above described various different research methods and clinical applications, but agree with each other regarding the importance placed on the "Shang han lun" prescriptions. The achievements associated with this accumulation of experiences are both Japan's pride and asset.

In modern Japan, highly diverse forms of Kampo medicine coexist and their presence has a historical background.

Yet, this diversity represents the real nature of Japanese Kampo medicine and comprises new research methodologies and applications found only in Japan. Even though the future worldwide development of TCM is largely influenced by the prevailing trends in its birth place, China; Japanese Kampo medicine will contribute significantly to that development.