from: 1912 BLAKESLEE Recent Developments in Chinese Medicine

THE WESTERNIZING OF CHINESE MEDICAL PRACTICE

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Before considering the process and status of the westernizing of Chinese medical practice, it is well to be oriented as to what it is that is being changed. Briefly what is Chinese medical practice?

Let us approach this question with open mind. It is easy to ridicule what is not understood. Racial prejudice is not confined to the Chinese and if we take the trouble to study the original sources, not only much of interest will be found, but some information of real value. Often it is stated in strange terms and based on bizarre theories, but the experience of centuries is behind it and parts deserve investigation by modern methods of research.

In our glance at Chinese medicine it is to be remembered that Chinese civilization is in the stage occupied by the European nations in the middle ages. It has been in much the same condition of suspended animation for two milleniums. Thus if we get a view of Chinese medicine it will be one of that practiced by them in the times of the Greeks and Romans. More than that it is extremely interesting to note that the theories of cosmogony of the Chinese run parallel to those of the Greeks, and that the theories of pathology of each are based on those of cosmogony. To illustrate: The Greeks believed that the universe was composed of four elements, viz., earth, air, fire and water, and that consequently the human organism was composed of these primitive substances. Health was conditioned on the proper proportion or balance of these constituents; disease on the disproportion or loss of balance. These views of Empedocles (fifth century B.C.) in a modified form permeate not only the pathology of the Greeks and Romans, but of all writers up

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to the eighteenth century. To this was added the so-called humoral theory, i.e., that the body fluids consist of blood, phlegm, yellow and black bile; and that to these correspond the four elements noted above, fire, air, water and earth, and the four conditions of matter, warm, cold, moist and dry. The predominence of one fluid over the others produce different temperaments, viz.; sanguine, phlegmatic, bilious or choleric and melancholic.

The Greeks, knew very little of human anatomy. They feared the dead and their religion enjoined immediate burial. Their knowledge of anatomy came from dissection of animals, including apes, and from observations during surgical operations.

The ancients did not differentiate between tendons, ligaments, and nerves. They believed that arteries contained air and conveyed it to the various organs.

While in Greece there was a well-defined medical cult, in Rome anyone who wished could declare himself a physician. There were no laws, which complied with, guaranteed the capacity of the practitioner, and medical responsibility was extremely limited.

I have taken time to enumerate these matters because of the striking similarity to Chinese theories and practices. As with the Greeks, the theory of cosmogony agreed on, pathology and treatment are perfectly rational. To the Chinese the universe is composed of five elements, metal, earth, fire, wood, water, each derived in turn from the succeeding. Corresponding to these are the five conditions cold, windy, hot, dry, moist. Health depends on the balance or correct proportion of these elements. Moreover there are added the great dual influences, the Yin and Yang, or female and male, negative and positive, dark and light. The Yin (elemental moisture) resides in the solid or semi-solid viscera, the liver, heart, lungs, spleen, and kidney. The Yang rules the contractile hollow organs, the large intestine, small intestine bladder, gall-bladder and stomach. The liver corresponds to wood, the heart to fire, the spleen to earth, the lungs to metal, and the kidneys to water. Each solid organ has a hollow viscus as its assistant or minister; thus the liver is

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assisted by the gall-bladder, the heart by the small intestine, the spleen by the stomach, the lungs by the large intestine and the kidneys by the urinary bladder. The liver is the seat of the soul; the gall-bladder of strength and courage. The lungs regulate temperament, and so on.

Diagnosis rests mainly on the examination of the pulse and the inspection of the face and tongue. The pulse is palpated with greatest care and detail. The patients' wrists are felt in turn by the physician with the three fingers of the opposite hand, each finger revealing the condition of a different pair of organs. Light and heavy palpation differentiate respectively between the hollow viscera and their corresponding or governing solid organs. Fifty-one chief types of pulse are recognized. The face is minutely inspected. There are thirty-seven appearances of the tongue.

For the treatment of disease the Chinese have a very extensive materia medica. Many of their drugs are also used in the West, as calomel and other forms of mercury, arsenic, copper sulphate, iron, sulphur, sodium sulphate, alum, ammonium chloride, rhubarb, pomegranate root, camphor, aconite, cannabis indica, musk, ginger, licorice, anise, cinnamon, gentian, cardamons, peppermint, aloes, orange peel, castor oil, and digitalis. In addition there are many inert or disgusting substances, e.g., insects, snakes' skins, recent and fossil bones of animals, and faeces of men and animals. But the Chinese are not peculiar in this. The London Pharmacopoea, the first in England, was compiled by the Royal College of Physicians in 1618. It contained crabs' eyes, pearls, oyster shells, and coral, each supposed to have different qualities. It also recommended formulae containing faeces of men, dogs, mice, geese and other animals, calculi, human skull and the moss growing on it, blind puppies and earthworms. Not until 1721 were important changes made and even that edition retained dogs' excrement, earthworms, and the moss from human skulls.

Chinese prescriptions contain many ingredients, usually nine or ten, often fifty. The same was true in the West one or two hundred years ago. The ingredients of the prescrip-

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tion are divided into the ruler, minister and subordinate corresponding to our basis, adjuvant and corrective.

Organotherapy is popular among the Chinese. Liver, lung and kidney of animals are given for human disease of those organs. Gall, especially of tigers, bears and notorious bandits is eaten to secure courage. Tigers' bones are considered the supreme tonic. Even human flesh is used occasionally, a son or daughter sacrificing a bit to cure a wasting disease of a parent. The ignorant have explained the strength of foreign medicines by supposing that these remedies were refined from the organs of kidnapped victims. The Tientsin massacre of 1870 grew out of the spread of such reports. It has been common rumor that foreign doctors pluck out the eyes of their patients. Personally I have known of an American physician who felt it necessary to guard the reputation of himself and his hospital by requiring the presence of a responsible friend at the operation of enucleation of an eye to receive the organ and so guard against senseless rumors.

At least since the eleventh century the Chinese have practiced inoculation against smallpox. The directions were very minute. The season and condition of the subject were taken into account. A wad of cotton moistened with the contents of a pustule from a mild case of smallpox was introduced into the nostril, or a dried pustule was powdered and rubbed into the nares.

The Chinese have never been surgeons, not from lack of handicraft but from lack of knowledge of anatomy and of methods of stopping the flow of blood. Almost their only procedures are acupuncture and counterirritation by heat variously applied, or by scraping. Acupuncture is very common. The safe spots 388 in number, are indicated on two figures prepared by imperial order in 1027 A.D. These mannikins are still in use in the T'ai I Yüan (Imperial Medical College) in Peking. The locations into which needles may be introduced include the joints, abdomen, and eye. An ancient surgeon is said to have rendered his patients anaesthetic by giving them medicine internally. The name of this drug is not given but it is supposed to have been

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Indian hemp or hyocyamus. The Chinese do use the latter to induce sleep.

China has officials corresponding to our coroners. Their training is based on an official codex published in 1248 A.D. —a time at which Europe possessed nothing of the kind. Although it contains many absurd tests such as abounded in Europe a few centuries ago, it also has some shrewd methods of determining the cause or manner of death. Only the exterior of the body is examined.

Medical practice is ranked low among the callings in China. Physicians are considered a little above priests but below diviners and school teachers. After gaining a familiarity with the medical classics, an apprenticeship with an experienced practitioner is considered necessary. If the novitiate can point back to several generations of successful physicians, his reputation will probably be greater from the start. Professional visits are made only on specific invitation and several physicians are likely to be called in rapid succession, and discarded with their treatment unless immediately successful. The bearing of this on cases that require time and careful observation and supervision can be appreciated. Fees are small and the cost of treatment is likely to be the subject of bargaining. Medical ethics it must be confessed are not very high. Probably it is this that causes physicians to be held in comparatively low esteem. A work on medical ethics published during the Ming dynasty says:

> When a patient is severely ill, treat him as thou wouldest wish to be treated thyself. If thou art called to a consultation, go at once and do not delay. If he ask thee for medicine, give it to him at once and do not ask if he be rich or poor. Use thy heart always to save life and to please all; so will thine own happiness be exalted. In the midst of the darkness of the world be sure there is someone who is protecting thee. When thou art called to an acute illness and thinkest with all thy might of nothing but making money out of the patient, if thy heart be nor filled with love of thy neighbor, be sure that in the world there is someone who will punish thee.

This is good, but with it contrast the Hippocratic oath:

> I swear by Apollo the physician, and Æsculapius and Hygiea and Panacea and all the gods and goddesses, that according to my ability and judgment, I will keep this oath and this stipulation

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. . . . . I will follow the system of regimen which, according to my ability and judgment, I consider for the benefit of my patients, and abstain from whatever is deleterious and mischievous. I will give no deadly medicine to anyone if asked, nor suggest any such counsel; and in like manner I will not give to any woman a pessary to produce abortion. With purity and with holiness I will pass my life and practice my art. . . . . Into whatever houses I enter, I will go into them for the benefit of the sick, and will abstain from every act of mischief and corruption; and, further, from the seduction of females or males, of freemen and slaves. Whatever, in connection with my professional practice or not, in connection with it, I see or hear, in the life of men, which ought not to be spoken of abroad, I will not divulge as reckoning that all such should be kept secret. While I keep this oath unviolated, may it be granted to me to enjoy life and the practice of the art, respected by all men in all times! But if I should trespass and violate this oath, may the reverse be my lot!

We must remember that it is the spirit of Hippocrates that has animated the profession in the West from the earliest times and has preserved it from becoming mercenary. To elevate medicine in China to the plane it occupies with us is one of the great tasks before us.

While in China anyone may become a medical practitioner by hanging out his shingle, there are some restrictions. Section 297 of the criminal code orders that

Whenever an unskillful practitioner in administering medicine or using the puncturing needle, proceeds contrary to the established forms, and thereby causes the death of a patient, the magistrate shall call in other practitioners to examine the medicine or the wound, and if it appears that the injury done was unintentional the practitioner shall then be treated according to the statute for accidental homicides, and shall not be any longer allowed to practise medicine. But if designedly he depart from the established forms, and deceives in his attempt to cure the malady in order to obtain property, then according to its amount, he shall be treated as a thief; and if death ensure from his malpractice, then, for thus having used medicine with intent to kill, he shall be beheaded (translation in Williams' *Middle Kingdom*).

A few years ago a law was enacted requiring examination and registration of all practicing western medicine but it has not been enforced.

It is said that during the T'ang Dynasty (618–907 A.D.) medical schools flourished throughout the empire but they have disappeared, the only trace being the T'ai I Yüan or

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Imperial Medical College in Peking. This institution trains the court physicians and also gives other practitioners the opportunity of study. In the Imperial Court there are nine physicians, specialists in the nine classes of diseases that affect the pulse violently or feebly; viz.: those arising from cold; those from female diseases; those from cutaneous diseases; those requiring acupuncture; diseases of the eyes; diseases of the mouth and its parts; and lastly diseases of the bones (Williams' *Middle Kingdom*).

While there are no medical diplomas or licenses in China, there *is* a custom which answers much the same purpose. When a patient is cured he often presents to the physician, a laudatory tablet. This bears a quotation from the classics or is couched in the flowery classical language. It is a testimonial; and the front, as well as the interior of the house of the physician is hung with many of these boards. This method is that of announcing a successful career rather than licensing the trained but untried novitiate. There is some reason in the practice and it is natural that it should have grown up where there is no system of examination or licensing at the end of the preliminary training.

What has been said thus far applies to those who may be called ethical Chinese physicians. Besides these, but not sharply marked from them (as is also the case with us) is a great army of charlatans, who by vehemently affirming the excellence of their wares, or their great wisdom, by psychologically the same methods of those in the West delude the ignorant. It is this class that gives the worst name to Chinese medicine. The best is painfully inadequate, but this, like ours, is limited only by the gullibility of its dupes. To this or another class, as you choose, belongs the third group of practitioners—the priests. Many temples or shrines are sought for their reputed cures and often are hung thick with the lauditory scrolls above mentioned. Usually the suppliant drops his fee into the receptacle, and then holding burning incense in his hands, prostrates himself before the image or other object of devotion. He then draws a bamboo slip from the bundle presented by the priest. The number on the slip corresponds to that of a printed formula

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on a rack nearby. This prescription is taken to any druggist who fills it. Essentially this is not greatly different from some cults that may be met in any of our own cities today, but it especially reminds us of the miracle-working shrines of Europe.

This description on Chinese medicine has been given in order that we may have some understanding of the atmosphere into which western medicine is being introduced.

The record of the early contact of China with western Asia and Europe is very imperfect and that of the introduction of western medicine still more so. The earliest account that I can find of western physicians in China is that the Persian records show that in the thirteenth century the Great Kahn had Christian physicians attached to his court. "This . . . . . is interesting for the Mongol history, which in one place says that Aisie (perhaps Isaiah) was a Fuh-Lin man (Frank) a linguist, astrologer and physician, actually asserts that he served Kyuk Khan and that subsequently in 1263 was chief physician and astrologer to Kublai; in 1273 he is once styled a Mussulman and his hospital at Peking was officially called the Broad Charity." (E. H. Parker's *China and Religion*, p. 181). This hospital was opened in 1272.

The records are much clearer regarding the services of certain Jesuit fathers who were attached to the court of K'ang Hsi, who reigned from 1662 to 1723. It is recorded that in 1692 they cured the emperor of an attack of fever after his life was despaired of by his own doctors. This cure was by means of quinine. The new medicine was tried on several of the courtiers before the emperor was permitted to taste it. The attempt of the same emperor "to introduce western anatomy by means of a translation of the anatomy of Pierre Dionis by the Jesuit P. Perennin, was frustrated through the opposition of the native doctors" (Neuberger's *History of Medicine*, vol. i, p. 63). In his memoirs, Father Ripa (p. 42–43) who went to Peking as an artist in the court of K'ang Hsi, tells of a lay brother who attended the twentieth son of the emperor and gave a favorable prognosis, but the boy died. He was "kicked, cuffed and beaten so

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severely by the order of the emperor that he fell seriously ill." He further says, "I was acquainted with some medical men who attended one of the imperial family," and were flogged and imprisoned for unsuccessful treatment. Taught by these and many other occurrences, the Jesuits who were in the emperor's service as mathematicians, painters, watchmakers, surgeons, and in other capacities would never undertake to serve him as physicians. But he records that Father Rod accompanied the same emperor to Jehol as surgeon. Father Ripa fell from his horse and was treated by a "Tartar surgeon" (p. 67). He says, "to confess the truth, although the mode of treatment was of a barbarous description, and some of the remedies appeared useless, I was cured in a very short time." Because of fear of encroachment by the countries to which they belonged, the Roman Catholic missionaries were driven from the country. The next contact with the West began with the East India Company in Canton. In 1805 Mr. Alexander Pearson introduced vaccination at Canton and before he left in 1832 saw a large vaccine institution established. Fifteen years later, (1820), Robert Morrison, the first Protestant missionary to China, opened a dispensary for Chinese in connection with Mr. Livingstone, surgeon to the East India Company. It was conducted by Chinese practitioners of the old school. In 1827, Mr. T. R. Colledge, also surgeon to the East India Company opened and conducted a hospital at Macao. It was supported by the Company and by private merchants. More than 6000 cases, especially diseases of the eye were treated in the five years of its existence. His greater service, perhaps, was his advocacy to the missionary societies of the use of physicians as pioneers in missionary work. All these men that have been mentioned were British, but it remained for an American Society, the American Board of Commissioners for Foreign Missions, to send the first medical missionary to China. This was the Rev. Peter Parker, M.D., who opened an ophthalmic hospital in December, 1834. From his work grew the Medical Missionary Society in China, founded three years later, and which still continues its good work in Canton. In 1852, Dr. Parker was appointed

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United States minister to China. His successor was Dr. J. G. Kerr, of the American Presbyterian Mission, whose record of 1400 operations for cystic calculi, is second only to that of Sir William Thompson. The work of the Medical Missionary Society was not limited at that time to Canton, but was the pioneer in coöperation with British and American Missionary Societies, in locating physicians in Amoy, Ningpo Hongkong and Shanghai. In this connection, the name of the first British medical missionary should be mentioned—Dr. William Lockhart, who arrived in 1839 and began his work in Macao, later going to Hongkong, Chusan, Shanghai and eventually to Peking. In twenty years he treated over 200,000 patients. Among these early men Dr. Hobson, also of the London Missionary Society, should be noted on account of his work of translation. In 1850, he prepared a work on anatomy and physiology; one on air, light, heat and electricity, and the elements of astronomy and natural history; as well as others on the principles and practice of surgery, on mid-wifery and diseases of children, and on the practice of medicine and materia medica, the last with an English and Chinese vocabulary. With the exception of the abortive effort of Father Perennin under K'ang Hsi, these were the first attempts at the translation of western science into the Chinese language. "Shortly after the appearance of the first of the series, it was re-published by the viceroy of Canton and then by Chinese publishers." Later they were printed in Japan, then just opened to intercourse with the West, but all reference to their western origin and to the Christian religion contained were omitted (Lockhart's *Medical Missions in China*).

It is of interest to note that ether was first used as an anaesthetic in Canton in 1847, the year following its demonstration in Boston and that the report of the Medical Missionary Society for 1848–49 notes the first use of chloroform.

After the beginning of medical missionary work in Canton, new cities were opened as fast as the treaties permitted the residence of foreigners. The treaty of Tientsin in 1858 allowed missionaries to reside in any part of China and a

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rapid expansion of the work followed until every province has its physicians, hospitals and dispensaries. In some places these hospitals are well equipped; in others fair work is being done under very unfavorable conditions. The efforts of medical missionaries are noted because they outnumber, many times, all the other qualified practitioners of western medicine and because they are scattered everywhere, forming, like their clerical and education colleagues, centers where the leavening of China with modern ideas has been, and is being carried on as by no other agency. The extent of their work in the aggregate may be judged from the incomplete returns from the 415 medical missionaries for the year 1910. The figures cover only 126 hospitals with about 6700 beds, representing 175 physicians. These men and women and their assistants treated 51,121 inpatients in their hospitals and 1,548,707 outpatients in the dispensaries, on tours, and in the patients' homes. The last number represents both first and return visits, the number of each being nearly the same. From these figures it can be seen what an influence these workers must be exerting in bringing a knowledge of western medicine to the masses as well as the classes of China. These hospitals and dispensaries have a further part in the same work, in the training of assistants. By this I do not mean those hospitals that are attempting to give full medical courses. From lack of sufficient medical colleges, every doctor is compelled to a large extent, to train his own helpers. Often these men stay only a few years, until they have a smattering of knowledge, and then leave to take up positions in government dispensaries or more frequently, to open drug shops and to practice western medicine on their own accounts. There is no medical practice law to prevent this. These men are often no credit to their teachers and any moderately efficient law should cut many of them off. On the other hand, some of them have very successful practices and wide reputations.

Unfortunately medical contact with the West has brought bad as well as good—not unlike our contributions in other directions. Few quacks have established themselves thus far, though several years ago the Chinese public was relieved

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of considerable money by an "electric belt" fakir.[1] More to be deplored than quacks at present is the rapidly extending exploitation of patent and proprietary medicines. Williams' Pink Pills and Doan's Kidney Beans (to mention two great offenders) together with a legion of Japanese nostrums are found advertised and sold everywhere. Many Chinese reading the specious testimonials, are led to believe that these are western remedies of accepted worth and pay $2.50 for six bottles of Williams' Pink Pills which the analyses of the British Medical Association show to consist of carbonate of iron and to cost about 10 cents. We are beginning a fight in this country against these enemies of health. It is no wonder that they turn to the countries now opening to western commerce to ply their trade where publicity and pure food laws may not trouble them for some time.

The Chinese government, national or provincial, has opened in several cities, hospitals or in more cases dispensaries. The board of the interior (Men Chêng Pu) has maintained two large dispensaries in Peking for a number of years. Some hundreds of patients are treated there daily. They may choose between the old style Chinese practise and western medicine. I am told that about three times as many choose the former as the latter, especially for medical as contrasted with surgical ailments. The fact that there are no wards for inpatients where they can receive the necessary after treatment accounts in part for the disproportion. In hospitals conducted by foreigners, the number of surgical cases is much greater than the medical among the inpatients. And this brings us to an interesting fact; namely, that while

[1] Mr. C. B. Towns, to whom Mr. Bland referred in his address as an expert in the treatment of the opium habit, belonged to the borderline of legitimate business. Without any medical knowledge, he took a secret remedy to China and tried to persuade the Chinese government to purchase it from him. I mention this because this conference should not be left with the idea that Mr. Bland evidently meant to imply, i.e., that the Chinese government was insincere in its attempts at opium reform because it would not take expert advice when offered. Further it should be said that Mr. Town's remedy, the formula for which is now known, contains as its active agent, a drug which may be exceedingly dangerous in unskilled hands, yet this man, himself without medical training, proposed to scatter it abroad for general use in the hands of the laity.

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the Chinese realize that western surgery is so infinitely superior to their own that there is no comparison, many of them, I believe it may be said most of them, as yet prefer the old Chinese school for internal diseases. The reasons for this are fairly clear. There is no Chinese surgery; no knowledge of anatomy nor pathology; no antisepsis nor asepsis, nor anaesthetics, nor means of haemostasis. It is easy to see why western surgery seems almost miraculous to them. In the case of medicine it is different. The western physician does not feel the pulse with the extreme care of his Oriental confrère. He cannot diagnose the condition of all the internal organs by this means alone. Therefore, in the eyes of most of the Chinese his skill is much inferior. Moreover, he does not use the terminology with which his patients are familiar. He does not know what diseases belong to the Yin and which to the Yang, which to the hot, cold, moist, dry and windy. He does not even know whether his remedies are contrary in nature to the disease for which they given. He does not require partial abstinence from food while under treatment as the Chinese physicians frequently do. Moreover, he uses unheard of, and sometimes repugnant methods of diagnosis and treatment; he requires the patient to expose the part of the body affected no matter what it may be; he thumps and listens to and examines the whole body. He uses cold baths in fevers —whoever heard of such a thing! And finally the Chinese believes that his own physicians cure as many as or more than the western doctor. Very frequently he goes to the westerner only as a last resort after all the native doctors have pronounced his case hopeless. The Chinese habit of going from one doctor to another prevents success in those diseases which require long careful watching and treatment. It is almost impossible to get a Chinese to become an in-patient when one can only promise him that after a long stay, perhaps he may be improved, but that a perfect cure is out of the question. The fact is that western methods of treatment do not produce such startling cures in medical as in surgical cases. In comparing the results of the two systems, reliable statistics are almost unobtainable. The

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only ones available are those given by Jeffreys and Maxwell in their book *Diseases of China* for the Tung Wah Hospital, Hongkong for 1905. These show

General diseases

NET TOTAL TREATED	ADMISSIONS			DEATHS		
	Western treatment	Chinese treatment	Total	Western treatment	Chinese treatment	Total
Number	1237	1209	2446	370	477	847
Per cent	50.6	49.4		*29.91	*39.45	

* Per cent of deaths among admissions to respective service.

The extremely high mortality in this hospital shows that either the figures cover a period of severe epidemic disease or that only extremely ill patients were admitted, for the death rate is about ten times that in most hospitals. If this is the case, the method of treatment makes much less difference than in less critical cases, for here most will die regardless of the care and wisdom of the measures taken. The main interest of the figures lies in the fact that in as thoroughly foreignized a city as Hongkong practically as many patients choose the old as the new method of treatment.

Aside from general hospitals, others have been established for the treatment of lepers, and two for the insane. Of the latter the first and best known is that opened by Dr. Kerr in Canton in 1898. The second is a government hospital in Peking entirely under Chinese control and in charge of a western trained Chinese physician. So far as I am aware, there is not a single institution devoted exclusively to the treatment of tuberculosis, though that disease is more prevalent in China than in Europe and America.

Great as has been the work of hospitals and dispensaries conducted by foreigners in the diffusion of a knowledge of the methods and benefits of western medicine, a greater part must be played by the educational institutions that will send Chinese men and women out among their own people, properly equipped to demonstrate the science and the art of healing. The evolution of medical colleges in China has been very similar to that in America. At first men trained

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abroad held the field. Then they obtained their knowledge by what might be termed apprenticeship—reading with and assisting a qualified practitioner. Later schools were established, the teachers of which were practicing physicians but who gave part of their time to class instruction. Only recently in America have there been medical colleges where in subjects like physiology, anatomy and pathology, the instructors have devoted their time exclusively to teaching. All these varieties of medical instruction are found in China but very few colleges have come to the stage where a full curriculum is offered. The commonest variety of instruction is where one or two men, more than busy with the care of a hospital and dispensary, take a few students to train them as assistants. They lecture to them on anatomy, physiology and the other fundamental subjects usually translating as they go into colloquial Chinese and probably using the English term where the Chinese is lacking or unknown. Men trained in this way have the virtues and the vices of their teachers. Naturally, they know nothing first hand of the fundamental natural sciences on which modern medicine is based. Those who are gifted come to take fair histories, are good anaesthetists, fair to good operators, but usually with faulty technique, and are poor diagnosticians and prescribers. Their faults are that they do most things by imitation, and do not understand the rationale of the proceeding. They know that the master gives this drug or that mixture under what are apparently the circumstances demanding treatment. They try to learn formulas and prescriptions rather than to diagnose by careful observation and elimination. In short, they are empyrics, the result of didactic instruction. Their vices are the vices of the system or lack of system under which they are trained, and the system is the result of the stage of development of education in China.

It is easy to condemn the conditions but America has not fully emerged from them herself. Very few schools in China can measure up to the American Medical Association's definition of a medical college, i.e., an institution having "at least six professors giving their entire time to medical work,

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a graded course of four full years of college grade in medicine and requiring for admission not less than the usual four years of academic or high school preparation or its equivalent in addition to pre-academic or grammar school studies." None has reached the new standard of the Council on Medical Education of the American Medical Association. Several are doing fair work and improving more or less rapidly. About ten schools established by missionary societies by generous stretching of the definition may be called medical colleges. Only one of these has a staff of ten or more teachers. Being myself a teacher in that one perhaps comparisons may be considered invidious so that I prefer to turn to the judgment of others as to the present status of medical colleges in China. In the report of Dr. Martin R. Edwards, who spied out the land for the location of the Harvard Medical School in China, and published last year, he says, "Of the schools which have been established by the missionary forces, the Union Medical School in Peking gives the greatest promise. It has a good foundation in buildings, equipment and professorial staff. In Shanghai, the St. John's University Medical School has been established, but its requirement admitting only college men of two years' standing has largely limited its work. There is now in Hankow a small school struggling along with practically no equipment as to buildings or men. Hangchow, Soochow, Foochow, and Canton have similar so-called medical schools, all working with an entirely inadequate equipment." The difficulties are two: First, the preliminary education is inadequate; and second, the staffs and equipment are usually too meagre. Both are due to the undeveloped condition of educational institutions in China. They are where America was two decades or more ago. The China Medical Missionary Association composed of the four hundred and more medical missionaries has drawn up a policy of medical education which it hopes to see carried out. It has recommended that for the present, missionary medical education be concentrated in five centers, one union college in each the north, south, east, west and central parts of the country, and that the instruction be in Chinese; that is, Mandarin,

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except in Canton. Practically, this means, Peking, Canton, Nanking, Chentu and Hankow. There are such schools either in operation or under organization in each of these cities except Canton, where a union is not yet consummated. The three Wuhan cities (Hankow, Han Yang, Wuchang) have a small school conducted by the two societies in Hankow, and another across the river under the American Episcopal Church in Wuchang. This great center has been selected by the movement headed by Lord William Cecil as the site of the Oxford-Cambridge University scheme. If and when this plan materializes, an adequate medical college certainly will be a part of it. Aside from these five centers designated by the China Medical Missionary Association and those mentioned by Dr. Edwards in his report, there is a Union Medical College at Chinanfu, Shantung with three permanent instructors and two lecturers. There is one at Mukden, Manchuria, with five teachers. The only missionary schools using English as the teaching medium are St. John's in Shanghai, which has now affiliated with the Harvard Medical School in China; and the University Medical School, affiliated with the Canton Christian College. Aside from the colleges mentioned, there are others that may be noted. With chracteristic German thoroughness a school has been started in Shanghai which gives a preparatory course in the German language and in the sciences and then a medical course, the whole covering seven years. This is part of a campaign to make Germany and the German language greater factors in the Far East than they are at present. In Canton the French have a school with three professors. Their lectures are interpreted into Chinese—a thoroughly unsatisfactory method. Hongkong University, a semi-official institution recently organized, will have a good medical department. Although it is in British territory, it must exert a large influence in South China. The Japanese have opened three or four schools in China, but they are purely commerical ventures and the less said about them the better. All the schools mentioned are for men. There are two missionary medical colleges for women. One is in Canton. The other, the Union Medical College for Women in Peking,

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gives a six year course. The curriculum and some of the teachers are the same as in the Union Medical College (for men), Peking.

Although they have been referred to indirectly, notice is due to the marked interest that several American universities have taken in education in China. Yale University was the first, and in 1903, opened work in Changsha, Hunan, which had been selected as a site. Up to the present, although medical work has been conducted under Dr. E. H. Hume and Dr. F. C. Yen, the contemplated medical college has not yet been organized. The University of Pennsylvania, through its Young Men's Christian Association, affiliated itself with the Canton Christian College and now has three men conducting the University Medical School. Princeton University mans the whole work of the Young Men's Christian Association in Peking, but there is no medical work. Oxford and Cambridge Universities in England plan to start a University at Hankow or one of the other Wuhan cities. In this they have sought American coöperation. A medical college would be part of the scheme. The last and largest project to enter the field is Harvard University, which has now seven men in Shanghai. The medical department of St. John's University has been amalgamated with the Harvard Medical School in China. It plans to teach in English and to conduct a medical college, a training school for municipal health officers for China, a research laboratory, and post-graduate courses for foreign physicians—an ambitious program. Only a few of the institutions mentioned confer degrees. St. John's University is incorporated in the United States and consequently its degrees are foreign. The same is true of a few others. This is a part of extraterritoriality and while some new institutions contemplate following the same course it is, I believe, a wrong position and one that will be untenable within a few years when extraterritoriality of other varieties has disappeared. Only one school, the Union Medical College in Peking enjoys the recognition of the Chinese government, that is its graduates receive certificates from the board of education. By a change of policy of the republican government, the diplomas

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issued by the college itself will receive the stamp of the board of education in the future.

This fairly covers what has been done for China. What has China done for herself? Very little as yet. The program laid down by the imperial edict of 1909 contemplated a hospital and medical school in every provincial capital as well as a medical department in the Imperial University in Peking. This, like many other paper reforms of the Manchu government, was never carried out. Practically the only medical education conducted by the government are the two colleges in Tientsin—the Pei Yang Medical College and the Army Medical College. The first is taught by three or four French physicians and about an equal number of Chinese graduates of the school. The medium of instruction is English. The second formerly had Japanese instructors, whose lectures in their own language were interpreted into Chinese. The textbooks were those used in Japan, i.e., written in the slightly modified Chinese classical language. Having dismissed the Japanese staff, the Army Medical College is about to use English as its teaching language. These schools train the surgeons for the army and navy, but some of their graduates, especially of the first and older institutions are now in civil and non-medical official positions.

This brings us to a consideration of the language medium in teaching western medicine in China. It is a question in which there is no unanimity. Strangely the China Medical Missionary Association representing foreigners, favors Chinese colloquial for the conversational parts of the instruction and the easy classical style for text books; while the Chinese government has decreed that all science, including medicine shall be taught in English. The board of education has been forced into this position by two factors, the lack of teachers and the lack of technical terms in the Chinese language. The instructors in the sciences as well as in many of the other higher branches in the government colleges and universities are foreigners especially English and Americans. They go out under a three-year contract, so that learning to teach in Chinese is out of the question. English

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is *the* foreign language of the Orient and it is fast becoming true that no man can consider himself educated unless he knows something of it. The second factor, the matter of technical terms is also difficult. There has been a desultory work on the compilation of technical terms, but it has not reached the natural sciences and may not for a long time. By the rules of the Chinese language, it is improper to create new characters, i.e., to coin new words. It would be equivalent to making new words in a modern language without going to the dead languages for the roots. What must be done is to combine existing characters so as to give the requisite meaning, where a single ideograph does not suffice to express the thought. Thus one is confined to a choice of say forty thousand characters with their meanings which originated when the world was comparatively primitive, together with combinations of the same. The difficulty is that what would correspond to a polysyllabic word with us becomes a string of characters a definition in fact, expressed in what must be lucid Chinese. The result is sometimes weird. A short cut but worse expedient is the transliteration of the sound of the foreign word. Here the trouble is that beside having absolutely no meaning to the uninitiated the sound values of different characters vary in different parts of the country and what might be a fair imitation in one place would have little resemblance in another. In spite of what we may say about the difficulties, the modern writers on every subject under the sun go on coining new terms (not new characters) and many of them are very pat. The same will be done in medicine in time. It should be undertaken by a government commission if suitable men can be found. It is a very difficult task if well done, for it combines an extensive knowledge of Chinese characters, a thorough technical knowledge of the science whose terms are translated, e.g., medicine, and that masterly quality which uses just the right word to express each shade of meaning. Perhaps the men can be found now; perhaps we shall have to wait a few years. The Japanese met the same difficulties and solved them as far as they have been solved, as the Chinese are doing. They began by teaching technical subjects

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in the language of the country which they took as their model in that particular branch. Medicine fell to German and I understand that even yet some of the most technical parts of medicine are studied in that language. The Japanese use the Chinese classical language, having derived it with much of their culture from China many centuries ago. It might be asked why the Chinese do not use the Japanese terms or even the Japanese textbooks. The answer is that the Japanese use many characters in other senses than the Chinese do, so that the meaning is not clear; they use many unusual characters; and their whole literary style is not pleasing or shall we say correct, from the Chinese standpoint. Moreover, they have used many transliterations of the sounds of foreign terms, accurate perhaps when pronounced in Japanese, but meaningless when given the Chinese sounds. And moreover, the Chinese sound values, as I have pointed out, are not the same everywhere. The China Medical Missionary Association and those who agree with their viewpoint, that a great country like China ultimately must study and write about every subject, technical or otherwise, in their own language, have taken the bull by the horns and have compiled an *English-Chinese Medical Lexicon*, covering the commoner medical terms and will add to it as new editions appear. It has some faults. Some terms are poor. Some rules of Chinese composition occasionally are broken, but it is a step in the right direction. It will be tried by fire and the good will remain.

And this brings us to the subject of modern medical literature in the Chinese language. It is not a large subject, more's the pity. I have noted the abortive attempt of a Jesuit father to translate an anatomy, and the more fruitful labors of Dr. Hobson in Canton. Dr. Kerr, of Canton, wrote several treatises, as did several others, but it is since 1900 that most has been done. The works now translated and published by the publication committee of the China Medical Missionary Association comprise twenty-three titles, including most but not all of the fundamental branches of medicine. Other books are in the press and still others are being translated. Within a few years when China

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has men of her own thoroughly trained in medicine and in in the other sciences, the Chinese language will be employed in the government colleges. Of that there can be no doubt. At present is is a question of whether it is better to make the student do the work of getting sufficient English to grasp the technicalities of medicine, and after he has obtained the training, be unable to transmit what he has learned to his countrymen who do not understand English, because he has no technical terms; or, to make the teacher learn Chinese and create a literature in medicine with the help, of course, of Chinese teachers, who see that the style is correct. In our own college we require the students to have some knowledge of English and to continue the study of both that and classical Chinese throughout their course unless excused for special proficiency. The aim is to make English a secondary language as students in this country have German and French for collateral reading and I believe that we are anticipating the condition that will prevail in nearly all schools a few years hence, when those who wish to study in a foreign language will seek also the greater facilities of some foreign land.

For more than fifty years Chinese have been going to the West for medical training. So far as I can find any record the first to take a degree was Dr. Wang Fen, who graduated at Edinborough in 1857. He offered his services to the London Missionary Society and was in charge of the hospital of the Medical Missionary Society in Canton for a number of years. Since then a number of Chinese have studied both in Europe and America. With the great influx of Chinese students since 1900 and especially since the migrations to America that have resulted from the return of the Boxer indemnity by the United States, the number has increased. At the present time the bureau supervising students has a record of seven now studying medicine, two sanitary engineering and one sanitary chemistry.

Finally, where does western medicine stand today in the estimate of the Chinese? That depends on the precise moment at which you speak. The change that is going on in China at present is stupendous. It is safe to say that the

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officials and upper classes have come into close contact with western ideas and culture more in the last decade than in the preceding century and that the last year has meant more in progress than the preceding ten. It is needless to say that if the Chinese government had known a tithe of what it does now, the Boxer delusion would have been impossible. There are still old officials who did not learn anything from that convulsion but are wondering what all the recent fuss is about. There are others who are revising their opinions. Let me quote from the address of Hsi Liang, viceroy of Manchuria at the opening of the International Plague Conference in Mukden in April, 1911:

> We Chinese have for a long time believed in an ancient system of medical practice, which the experience of centuries has found to be serviceable for many ailments, but the lessons taught by this epidemic, which until three or four months ago had been unknown in China, have been great, and have compelled several of us to revise our former ideas of this valuable branch of knowledge. We feel that the progress of medical science must go hand in hand with the advancement of learning, and that if railways, telegraphs, electric light and other modern inventions are indispensable to the material welfare of this country, we should also make use of the wonderful resources of western medicine for the benefit of the people. . . . . I trust and believe too, that modern medicine and especially sanitary science will in future receive more attention in this country than it has hitherto done, and we shall be better prepared to deal with similar epidemics when they arise. My great regret is that as many as 40,000 lives have been lost in these Provinces, especially including those of some of our foreign doctors, whose unselfish devotion to duty and the welfare of our people I shall always remember.

At the first graduation exercises of the Union Medical College in Peking in April 1911, the Privy Councillor Na T'ung gave the principal address. He said in part:

> There is abundant proof that neglect of the laws of sanitation and absence of proper medical care have brought about more deaths of officers and men in the fiercest of modern warfare than the destructive power of the terrible weapons of war. What is true in times of war is no less true in the times of peace. We have just had an illustration in the pneumonic plague which raged so fiercely in Manchuria. . . . . In fighting against the plague —and the battle was a splendid one—the government found that it did not have a sufficient number of doctors available to do the

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work and a call for volunteers was issued. Among others, several professors and students of your college responded and at once left for Harbin, where the plague was seen in its worst form. Leaving self and family out of consideration, they thought only of the good they could do, and as doctors they remembered that their duty and ambition was to fight disease and death: And it is this spirit, I believe, should inspire you throughout your lives, the spirit of service and sacrifice.

Within the year 1911, the Chinese government twice sought the coöperation of the Union Medical College in Peking when their own resources were insufficient. The first was in the case of the epidemic in pneumonic plague in Manchuria referred to by Na T'ung and the second was during the revolution. The imperial army medical corps was altogether inadequate for the task and desired the Medical College to coöperate. The reply was in the affirmative provided a Red Cross Society could be organized and that the imperial government would apply the rules of the Geneva Convention to the treatment of wounded rebels. It took a month of the time of the most active hostilities before they could be persuaded to do so, but in the end these civilized rules prevailed and three companies with nine teachers and about forty students went to the front. Aside from this and the efforts of other Red Cross Societies in China wherever there were medical missionaries their hospitals if required were filled with wounded. On the rebel side there was little army medical corps work but several organizations including the Red Cross Society in Shanghai sent companies to the scene of hostilities. The public service during these two visitations of pestilence and war has aided greatly in showing the officials in China what western medicine is by actual demonstration. After the plague one heard on every side among officials of the necessity of reform in medical education and in supervision of public health. There is no question but that the new government will move rapidly in this direction and that the institutions now at work and many others will be needed to coöperate with those that the government will establish to train physicians and public health officers for new China.

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