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Medicine in China

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China Medical Commission of the
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INTRODUCTION

The Rockefeller Foundation at a meeting held in New York, January 29, 1914, voted to establish a Commission to study and report on conditions of public health and medicine in China. In accordance with this vote the Foundation further appointed the following persons to constitute the Commission:

HARRY PRATT JUDSON, LL.D., President of the University of Chicago, Trustee of the Rockefeller Foundation, Member of the General Education Board, etc., *Chairman*

ROGER SHERMAN GREENE, A.M., Consul-General of the United States of America at Hankow

FRANCIS WELD PEABODY, M.D., of Harvard University and the Peter Bent Brigham Hospital, Boston.

GEORGE BALDWIN MCKIBBIN, J.D., Secretary to the Commission.

The Commission was provided with formal credentials on behalf of the Foundation. The Secretary of State of the United States, the Honorable William J. Bryan, kindly provided letters of introduction to the American Minister in China, the Honorable Paul S. Reinsch, to the American Ambassador in Japan, the Honorable George W. Guthrie, and also to all American consular representatives in China and Japan. The Secretary of State further very generously gave leave of absence to Consul-General Greene in order that he might perform the duties of a member of the Commission.

The Chairman and the Secretary left Chicago March 18 for Washington, D.C. While in Washington the Chairman was the guest of the Honorable John W. Foster, former Secretary of State of the United States, and legal representative for many years of the Chinese legation in Washington. While in that city a call was made on the President of the United States, who expressed cordial interest in the purpose of the Commission; and on the Chinese

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Chargé, Mr. Yung Kwai, who provided letters of introduction to Chinese officials in Peking. The Chairman also met Mr. E. T. Williams, head of the Far Eastern Division in the Department of State, the Secretary of State of the United States and a number of other people who were interested in the Far East.

The Chairman, Dr. Peabody, and the Secretary and the two ladies of the party sailed from New York on the Hamburg-American Steamer "Imperator," Saturday, March 21, 1914. From Cherbourg the party proceeded to Moscow, stopping a few days in several cities enroute. Leaving Moscow April 8, they arrived at Peking April 18. On the following day, April 19, the party was joined by Mr. Greene coming from Hankow.

The first formal meeting of the Commission was held on April 20, at which time the general plans for work were outlined. Until May 11 the Commission remained in Peking, studying the situation there, and in Tientsin, examining the various medical schools and hospitals in that city, making the acquaintance of important officials of the government, and organizing plans for the subsequent work in other parts of China. The Commission was received by the President of the Republic, Yuan Shih K'ai, was entertained at dinner by the Vice-President, Li Yuan Hung, and was able to meet other important officials. Blanks were prepared and sent to hospitals and medical schools to be returned to the Commission in order to secure from the workers on the field a statement of the facts within their knowledge. Meanwhile, Mr. E. C. Sage, one of the Secretaries of the General Education Board, had provided the Commission before it left New York with a large mass of reports as to medical work in China from various missionary bodies in the United States. Later Mr. Sage proceeded to England and obtained similar material from the various mission bodies in that country.

It was decided that the Commission would be more effective by dividing for a part of its work. Accordingly on the 11th of May Dr. Peabody and Mr. Greene proceeded to Hankow by train, planning to stop enroute at various places for the inspection of hospitals. Meanwhile the Chairman and Secretary examined several institutions in Shantung province, going first into the interior by rail, and then taking steamer from Tientsin for Shanghai, stopping enroute at

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Chefoo and Tsingtau. After examining the work in Shanghai, Nanking, and vicinity the party went by river to Hankow, stopping enroute at Kiukiang. Meanwhile Mr. Greene and Dr. Peabody had reached Hankow and spent some time in visiting schools and hospitals in that vicinity and at Changsha. The Commission met at Hankow for a general discussion and the arrangement of subsequent plans. The Chairman visited Changsha, and then proceeded to Peking for a conference with the Minister of Education, then by rail again to Shanghai where he was joined by Dr. Peabody and Mr. Greene, who had come down the river, stopping at a number of places which the Chairman had not seen. The entire party then proceeded by sea to Hongkong. Brief visits were made at Canton and then ship was taken for Manila. Here the general hospital and University Medical School were visited and the health work under the charge of Dr. Heiser. The Chairman and Secretary, accompanied by the ladies, returned to Hongkong and made another visit to Canton besides examining the work at Hongkong. On July 23 they sailed for Japan, stopping enroute at Keelung, on the Island of Formosa, and at Shanghai. Dr. Peabody and Mr. Greene remained in Manila, sailing from there July 21 for Hongkong. From that place they proceeded by coasting vessels for a visit to the institutions at Swatow, Amoy, and Foochow, reaching Shanghai August 2. They remained in Shanghai and vicinity until August 14, when they sailed for Japan, the party being reunited at Kyoto August 17. Here further meetings of the Commission were held, the material gathered was studied and the report drafted.

Altogether the members of the Commission visited seventeen medical schools and ninety-seven hospitals in China and Manila. Of the nine mission medical schools in the list of the Medical Missionary Association, seven were visited, the only ones omitted being Moukden in Manchuria and Chêngtu in Szechuan. Visits were also made to various universities and secondary schools, both missionary and governmental. Conferences were held with a great number of medical missionaries and officials of the Y.M.C.A. in China, with leading officials of the central government and of the governments of the various provinces and with many other persons

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in positions of influence, both European and Chinese. Of the eighteen provinces of China proper, the Commission visited eleven.

It should be said that everywhere members of the Commission were received with great courtesy and with great helpfulness.

The Minister of the United States to China, Hon. Paul S. Reinsch, and the American Consuls in the various parts of China were very kind and helpful. Chinese officials everywhere assisted the work, giving all information in their power and extending every privilege which could be desired.

It is believed that the schools and hospitals seen comprise the most important and on the whole those which are typical. It is doubted whether if visits had been made to all the other missionary hospitals in China any important additional information could have been obtained. The reports furnished by the missionary bodies through Mr. Sage and those obtained from the missionary bodies on the field embody a great mass of information which is very useful to the Commission and will be of importance hereafter for the use of the Foundation.

The conclusions which the Commission has reached are based on what it believes to be a careful study and the facts submitted afford a means for the verification of the report.

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I

HEALTH CONDITIONS IN CHINA

It must be understood at the outset that in China statistics of any sort hardly exist. Such statistics on financial matters as belong to the Customs service are of value within their field. Incidentally the Customs service has gathered within some treaty ports certain facts with regard to health in those places. Naturally these are very limited in their character and relate to ports which have more or less European influence and in which health conditions on the whole are presumably better than they are in other places within the Republic. One can only judge as to general conditions by what is observed in different parts of the Republic and by the observations and opinions of those in touch with medical affairs as they exist. From these various sources one can conclude only that diseases are rife throughout the Republic and that the death rate is probably higher than in any other known country. If these inferences are correct it must follow that the economic results of prevailing lesions of public health are themselves most serious. In other words, the mental power and economic efficiency of the nation as a whole must be enormously lessened.

It has been said by some Chinese that taking things as they are in China today, a high death rate is not on the whole undesirable; that there are too many people in the country, that the population is increasing too rapidly, that the pressure on the means of subsistence is excessive, and that a diminution of population caused by wide-spread disease, whether pestilence or otherwise, is on the whole a benefit. Aside from any question of the humanitarian bearing of such an attitude, it must be noted that there is here ignored the enormous importance of the economic effects of wide-spread disease. If a nation is healthy and energetic and efficient, it will be able greatly to increase its productive power from an economic point of view. There can be no doubt also that while in certain parts of the Republic the population is congested, nevertheless there are large areas in which arable land is untilled and that

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there are also large sources of national wealth which are practically untouched. Mines of various metals are known to exist in large quantities and there can be little doubt that further investigation will disclose further great deposits of coal, iron, copper, and other valuable products which can be mined with success. The development of the system of railroads which is already under way must proceed *pari passu* with the opening of mines, and the two together will offer a large outlet for labor. The great hill surfaces of China which have long since been denuded of their forest supply must be re-forested. This again will employ a considerable body of labor and the incidental work connected with the process will reclaim considerable areas of cultivable land. The restriction of the numerous rivers of China from devastating annual overflows, a matter which seems to be quite within the limits of engineering capacity, will also provide another outlet for labor and at the same time will reclaim further areas of valuable agricultural lands. In other words, it seems quite possible for the population of China to be supported in comfort not only at its present rate of increase, but at a much larger rate. So far as the abnormal increase of population in China, coming from beliefs and practices more or less connected with religion, is concerned, it seems reasonable to suppose that time and the development of the country along western lines will sufficiently provide for that. The whole tendency of an increase in national well-being in western lands has been unfailing in the direction of lessening rather than increasing the birth-rate. That tendency may be somewhat checked by special conditions in China, but in the long run economic forces cannot be stopped in their operation and China must find true within itself what the rest of the world has been compelled to heed universally.

The Commission has been informed from many sources that the most destructive and wide-spread diseases of China at present are tuberculosis, hookworm, and syphilis. These are everywhere obvious and their results are believed to be increasingly conspicuous. Leprosy also prevails and only in sporadic cases apparently has there been any attempt at its obliteration. Of course, to stamp out such diseases systematic governmental action is necessary. As to tuberculosis, provision for sanatoria is entirely possible so far as proper

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locations are concerned, but little has thus far been attempted in that direction.

The sudden introduction of foreign conditions has had a natural result on the status of health. Railways, modern engineering, machinery, and other forms of industrial activity have brought with them the usual accompaniments of accidents and of occupational diseases. The crowding necessitated by the opening of schools and factories has also brought in new forms of physical trouble. The increased amount of travel made possible by railways and steamboats has resulted in more effective distribution of infectious disease over large territories. Cholera and bubonic plague have at times been especially threatening in the south, while the famines resulting from the inundation of great areas by Chinese rivers have their uniform sequents in wide-spread typhus.

It is only fair to point out that the evil results to health which might be expected from the unhygienic conditions of Chinese life are prevented in part by certain wholesome habits of the Chinese people. Uncooked food is rarely eaten, and the customary drink is a weak infusion of tea made with boiling water. Boiled rice is the common food in the south, millet or wheat in the north, and meat is taken sparingly.

The Chinese government, whether central or provincial, has not been able thus far to take comprehensive measures for public health. Small-pox is considered by the people as a matter of course, and an attempt to remove a patient from his home would be resented as an infringement on the liberty of the family. The various activities of a public health service as practiced in western lands are almost unknown. Leprosy and tuberculosis rage unchecked. Isolation hospitals for contagious diseases hardly exist, so far as the government is concerned. The stegomyia mosquito swarms in the Yangtze valley and in the Canton delta, and western medical men are apprehensive that yellow fever may come in from South America. If it should, its ravages would be fearful.

On the other hand there is some encouragement.

The ravages of the pneumonic plague in Manchuria in the years 1910–11 were so great as to excite general alarm, not only in China, but in other countries likely to suffer. The Chinese government

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invited other nations to send delegates to an International Conference on the subject of plague prevention, and the conference was held at Moukden in 1911. The recommendations adopted by this conference were in part adopted by the Chinese government. A Plague Prevention Service has been established, under the direction of Dr. Wu Lien-teh, who presided over the deliberations of the Conference. Several plague hospitals have been established, which may be used for ordinary hospital purposes when no plague exists. The medical officers have power to advise local authorities as to sanitation in the district, and in the event of a plague epidemic will have full charge of all preventive and destructive measures. During the epidemic the government permitted autopsies, and thus the way was paved for the regulation of November 22, 1913, by which autopsies and dissection were officially authorized throughout the republic.

The last two recommendations of the conference were as follows:

44. "With a view to giving effect to these recommendations every endeavour should be made to organize a Central Public Health Department, more especially with regard to the management and notification of future outbreaks of infectious diseases."

45. "In furtherance of the above purposes every effort should be made to secure effective medical education in China." (Report of the International Plague Conference, 1911, p. 397.)

Progress has not been made with reference to the establishment of a Central Public Health Department, but in several localities public officials have shown an intelligent interest in the subject.

In Canton the republican government immediately after the revolution organized public-health work quite effectively. Streets were cleaned, cases of infectious diseases were isolated, a leper asylum was established on islands of the delta where lepers were systematically segregated, and other similar measures were adopted.

In Changsha the Commission found a Police Commissioner who was also pursuing an enlightened policy as to public health, under the advice of the resident western educated physicians.

In Nanking, not long since, a proclamation was issued by the Government and posted throughout the city saying that all night soil carriers must have covers on the buckets; that there must be no

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defecating on the streets; that public closets must be emptied every day; that butchers selling chopped meats must provide screens to protect the meats from flies; and that if any questions regarding public health should arise in the minds of the people, the Governor would be very glad to hear them.

On the whole the time is ripe for a general advance in China in all matters relating to public health.

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II

CHINESE NATIVE MEDICINE AND SURGERY

It will of course not be expected that a nation so ancient in civilization as the Chinese should not have had a medical profession for many centuries. We find accordingly that time out of mind there have been practitioners of the healing art. There is a very elaborate Chinese materia medica. There are Chinese books in considerable number, many of them quite ancient in character, which deal with medical practice. One work on the pharmacopoea, the Pentsao, contains several copious volumes. The subject-matter has been treated in more concise form in a volume entitled "Chinese Materia Medica" by G. A. Stuart, M.D., Shanghai, 1911. The Proceedings of the Chinese Section of the Royal Asiatic Society for 1864 contain also an interesting article on Chinese medicine.

The old-fashioned Chinese practitioner is subject to no legal requirements. Anyone who wishes may announce himself a physician and practice as he pleases. In many cases such practice seems to be hereditary in certain families and many of the remedies are practically recipes handed down in the family through its traditions. The practitioner has the benefit presumably of some such inherited knowledge and he has also the books which custom has approved. Thus he has a great variety of recipes for given diseases. The Chinese native drug-stores provide the remedies in abundant quantities. There can be no doubt that in some cases the herbs thus used have certain beneficial medicinal effects. The methods of diagnosis and treatment are also peculiar. The diagnosis in the main is based on the pulse. Both pulses are taken and the Chinese treatises indicate no less than ninety-eight different types of pulse.

A common method of treatment is that of puncturing the body with a needle. A chart of the human body on record contains no less than seven hundred spots which are indicated as the places in which it is safe to insert a needle without injuring a vital organ.

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The old practice makes use of some modern drugs; e.g., quinine is well known and commonly used. Inoculation for small-pox has long been practiced and vaccination is now fairly common. Modern patent medicines have obtained a large sale in China, and the more flamboyant their advertising, the more eagerly they are purchased.

It may be added that the old Chinese practitioners claim to know about medicines and their effect upon the body but admit that they know practically nothing about surgery. The dissection of the human body is contrary to the ideas of the Chinese relating to the future life and is regarded with peculiar horror. The old Chinese ideas of anatomy therefore are peculiar. One chart on record for instance shows the oesophagus as passing through the heart and from there to the liver and from there to the stomach.

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III

WESTERN MEDICINE IN CHINA

III. 1

PRACTITIONERS OF WESTERN METHODS

Some physicians trained in western medicine are found practicing in China. Nearly all of these are gathered in the various treaty ports. A few are Europeans or Americans, but very few; more are Japanese. Some of these latter are scattered throughout the interior. How many there are it is impossible to say. So far as our observation goes they are not numerous and they are trained mostly in the lower grades of Japanese schools. There are a few Chinese who have been trained in western medicine. Opinions differ as to the number. Estimates made from quite independent sources, European and Chinese, substantially agree in saying that there are not more than forty-five to fifty-five who have been educated in Europe or the United States. Some of these are engaged in practice but most are found only in the hospitals or medical schools. There are of course some Chinese who have been trained in missionary medical schools in China and who are practicing. These cannot be many in number as it is known that the most of the graduates of these schools are on the staffs of the various mission hospitals. The Commission found a few Chinese practitioners who were educated in Japan. None of these, so far as the Commission's observations went, was educated in any one of the Imperial Universities.

Outside the mission hospitals and outside the treaty ports there are very few practitioners in China who have had any training at all in western medicine and almost none who have been adequately trained.

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III. 2

CHINESE GOVERNMENT AND PRIVATE MEDICAL SCHOOLS

Government Schools

LOCATION

The central government maintains two medical schools, one at Peking, known as the Peking Medical Special College (Peiching I Hsueh Chuan Mên Hsueh Hsiao), and one at Tientsin, the Peiyang Military Medical College.

A few provincial medical schools were started prior to the revolution, notably at Tientsin, Canton, Nanchang, and Wuchang, but none of these was very firmly established except that at Tientsin, and most of them have been closed on account of the lack of sufficient funds for their maintenance.

In 1913 the provincial government of Kiangsu established at Soochow a school known as the Kiangsu Provincial Medical Special College. We have been told that there is a similar institution in Chekiang Province. So far as we can learn these two and the Peiyang Medical School at Tientsin, a civil institution supported by Chihli Province, are the only provincial schools now remaining, though a semi-private school at Nanchang, called the "Public Medical Special College," receives a subsidy from the Kiangsi provincial government. There is at Wuchang, in Hupei, the beginning of a private medical school called the "Wuchang Medical Special College." At Canton besides the Kung Yee Medical School, promoted by Dr. P. J. Todd, which is nominally maintained by a private Chinese association, there is another Chinese private institution known as the Kwong Hwa Medical School. It is said that other private medical schools are conducted in Canton by Chinese practitioners but we did not have time to look into them. All these schools, except the Peiyang Medical School, give their teaching in Chinese.

With the exception of the Peiyang Medical School at Tientsin and the Kwong Hwa School at Canton, the Chinese government and private medical schools in China are almost exclusively under Japanese influence, practically all their staff having been trained in Japan or by Japanese teachers in China. Unfortunately most of the Chinese who have studied medicine in Japan have attended

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second-grade schools, on account of the difficult entrance requirements of the University medical schools. These men in recent years have been displacing the Japanese professors originally engaged by the government.

Japanese Second-Grade Medical Schools

These institutions, while they undoubtedly do some good work, are regarded by the Japanese as distinctly second-rate schools. Middle School (Chu Gakko) graduates are admitted to them directly, whereas to enter the University medical schools a preparatory course of three years in a Higher School (Koto Gakko) is required. For Japanese students there is a competitive examination for admission to the medical special colleges, only about one hundred ten usually being taken at Kyoto, for example, out of some eight hundred applicants. For Chinese applicants, however, this competitive examination is dispensed with, and they are admitted provided their knowledge of Japanese is sufficient. At Kyoto we were told that few or none of the Chinese medical students were graduates of the Japanese middle schools, and their preparation was said to be very inadequate. Furthermore, upon completion of their course, they are not required to pass the same examination as their Japanese classmates, nor is the regular degree granted to them. They are given instead a certificate showing that they have done the work required. Japanese graduates are granted the degree of Bachelor of Medicine (I-Gakushi), the same as that given by the universities, with the exception that the graduates from "special colleges" are required to add the name of the institution from which they received their degree.

The Medical Special College at Kyoto made in many respects a rather pleasant impression. It seemed fairly well equipped, and its hospital, which is primarily a therapeutic institution belonging to Kyoto prefecture, was well kept, but the number of beds available for teaching purposes is inadequate, being only fifty-two, while there are about one hundred ten students in each class of the four-year course. This school has a staff of twenty-one professors, seven assistant professors, two instructors, and nine lecturers.

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Regulations for Medical Special Colleges in China

An order of the Department of Education of the Republican government, issued November 22, 1912, outlines the work of the "Medical Special Colleges" and prescribes in detail the subjects which must be taught. A translation of the order is given in Appendix B 3. These colleges are intended to correspond to the institutions of the same name in Japan, and the curriculum is nominally almost the same, except that the Chinese college is obliged to provide instruction in physics and chemistry which in Japan is taken care of in the middle schools. The regular course is four years, but it is provided that preparatory and graduate departments may be added. All public and private schools calling themselves "special colleges" are nominally required to conform to the government regulations and must submit their schedule of studies, showing the number of hours allotted to each, to the Department of Education for its approval.

Peking Medical Special College

Admission.—Candidates for admission to the Peking Medical Special College, as to all "special colleges," must be graduates of a middle school or have other equivalent preparation,[1] must be males between the ages of sixteen and twenty-five, and must be in good physical condition. They are required to give surety for their good behavior. The college regulations provide that between sixty and one hundred students may be admitted annually. If the number of qualified students exceeds the number which the school can receive, competitive examinations are to be held in the following subjects: one foreign language (English or German), Chinese, algebra and geometry, physics, chemistry, and natural history, all these subjects being up to the standard of the middle schools. An examination fee of $2.00 Mex. or about ninety cents gold is charged which is not returned to either successful or unsuccessful candidates.

On admission the student is required to pay in advance his tuition fees for the whole term which amount to $7.00 Mex. The tuition fees for the first year come to $20.00 Mex. or about $9.00 gold. Students are required to pay for their own board and

[1] The subjects taught in the middle schools are enumerated in a government regulation of which a translation is given in Appendix B 4.

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lodging. Those who do not live at home are required to reside in the college dormitories. Students are required to wear the college uniform.

The academic year begins September 11 and ends on June 30. February 12, October 10 and 17, and November 16 are holidays. There is a winter vacation from December 26 to January 9, and a spring vacation from April 1 to 7.

Curriculum.—The schedule of studies showing the hours assigned to each subject in each term of the four-year course at the Peking Medical Special College is given in Appendix B 5. It will be noted that a great deal of time is devoted to the study of German, ten hours a week during the first two terms of the first year, eight hours during the third term, six hours during two-thirds of the second year, and thereafter four hours a week until graduation. During the greater part of the first year non-medical studies (German, chemistry, physics, ethics, Chinese literature, and gymnastics) take up twenty out of the thirty-six hours of formal work prescribed, leaving inadequate time for the strictly professional studies.

The school has now been in operation two years, and has, therefore, only two classes, containing together about seventy students from different parts of the country.

There are ten professors, a few of whom are Japanese, and some of the others are Chinese graduates of Japanese schools. The instructor in German is a Chinese who studied at Tsingtau.

At present the college is using some old Chinese buildings in which have been fitted up lecture rooms, a small chemical laboratory, and two laboratories devoted to anatomy, in one of which there are two dissecting tables. We were informed that some dissecting had already been done there, but it is evident that as yet not even the government schools have really taken advantage of the government legalization of dissecting to do this work on a systematic basis. There are also small laboratories for histological and bacteriological work with fair equipment of apparatus. The school had last spring no hospital connection, but some arrangement for clinical facilities will be required during the coming year, and it was hoped that a hospital would be obtained soon.

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Military Medical College

The Peiyang Military Medical College at Tientsin was established about ten years ago with a staff made up mainly of Japanese professors, but two years ago all the Japanese were replaced by Chinese.

The institution has the same admission requirements as the Peking Medical Special College, it has the four-year course, and the standard of instruction is evidently about the same. A translation of the schedule of courses is given in Appendix B 6. One difference is that Japanese is taught during the first year and German only during the last three years.

There are at present twenty-three professors, of whom fourteen give instruction in strictly medical subjects, while six are in the department of pharmacy, which is attached to the college, and three teach Japanese, German, and physics. Eight of the professors have studied in Japan and the remainder are mainly graduates of the college. There are about two hundred twenty students in the medical college proper and about sixty in the school of pharmacy. The college possesses fairly spacious buildings, and quite a large quantity of apparatus of various kinds, but its laboratory facilities are very limited, and apparently no attempt has been made to do any dissecting or to arrange for doing it in the near future. The college has no hospital of its own, but the students attend clinics at the so-called Tientsin Hospital, a small government institution, not far away, which is not well adapted for use as a teaching hospital.

The Peiyang Medical School

The Peiyang Medical School at Tientsin, which is supported by the provincial government of Chihli, gives probably the best medical training of any government institution. It grew out of the teaching done by Dr. McKenzie of the London Mission at his hospital, which attracted the attention of Li Hung-chang when he was Viceroy of Chihli. A government subsidy was given to the school and it finally became a recognized official institution. In recent years the French government has supplied to the school three professors, detached for this purpose from the army and navy. All the instruction, including that given by the French professors, is in English. A good working

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knowledge of English is, therefore, one of the principal requirements for admission, but some knowledge of physics, chemistry, botany, mathematics, and physiology is also required. The students come from Chinese government middle and high schools, and from mission schools to a less extent. While the instruction given by the professors is probably good as far as it goes, they cannot do all the work that should be done, and the buildings and equipment which they have at their disposal do not allow them proper facilities for first-class training. Some dissecting has been done at this school, but no systematic work in it has yet been arranged for. The graduates mainly go into government service, in the railways, army, etc.

Kiangsu Medical Special College

The provincial medical college at Soochow, Kiangsu, is only in its second year, and it is therefore perhaps not wholly fair to judge it. Its five principal professors are Chinese trained in Japan. One good feature of this school is that it gives its students a year's preparatory work in physics, chemistry, mathematics, etc., before admitting them to the medical school proper. The equipment is very meager, though we were shown tolerably adequate laboratories for elementary physics and chemistry. One body was dissected last fall, but no arrangements have yet been made for a regular supply of cadavers. There are at present thirty-four students in the first-year class and thirty-two in the preparatory department. About $47,000 Mex., or about $22,000 gold, per annum is the sum said to be appropriated for the support of the school. Arrangements are now being made for a hospital to be controlled by the school.

Nanchang Public Medical Special College

This institution has five Chinese professors trained in Japan. It has at present only one class, containing sixty students who are now in their third year. Like the Kiangsu school it provides a preparatory year with courses in chemistry, physics, and mathematics. Ordinary students pay a tuition fee of $2.00 Mex. a month and board themselves, but some were taken over from a former military school and are not charged any fees. The provincial government

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grants a subsidy of $700 Mex. per month or about $3,850 gold per annum. There is very little equipment, and students get their clinical training in a small private hospital of twenty beds.

Chekiang Medical Special College

We did not hear of the existence of this school until we were about to leave China, and have therefore no information about it.

Wuchang Medical Special College

The private medical college at Wuchang had, when we saw it, only one class under instruction and its faculty was inadequate, including, besides one missionary physician who lectures in anatomy, a Chinese instructor in physiology, who was graduated from a defunct military medical college, and a Chinese instructor in hygiene, who was formerly an assistant in the London Mission Hospital. Chemistry, physics, and mathematics are taught by non-medical men. The school has as yet no hospital connections and practically no laboratories, nor has it any very definite plans for obtaining the additional instructors required. The standard also is very low, graduates of higher primary schools being admitted. There are eighty students in the school this year, all of whom receive their tuition, board, and lodging free. It is unlikely that this school will long continue to exist unless it receives some support from the provincial government or is taken over by it.

Canton Medical Schools

While the Kung Yee Medical School belongs to a private Chinese association, it owes what success it has had largely to foreign co-operation, and it is therefore discussed elsewhere. The Kwong Hwa Medical School, on the other hand, is entirely Chinese. Of the professors one was graduated at the University of California and another at the Hongkong Medical College. There are some fifteen instructors in all, though most of the work is done by five of them. As at the Kung Yee Medical School, it is hoped eventually to insist that all candidates for admission have a preparation equivalent to that of middle school graduates, but it is difficult to get many students so qualified, and as the institution depends on tuition fees

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for its support a considerably lower standard has been accepted for the present. The tuition fee is $80.00 Mex. or about $37.00 gold per annum. At present there are 115 students, including fifty women. The course is now four years, but it is planned to lengthen it to five years. There is very little equipment for teaching. For example the department of pathology has only one microscope. Dissection is not yet being done in Canton, but we were interested to learn that the students are sent to the summer course in anatomy offered by Hongkong University, where they are given ample opportunities for dissection. A hospital of some forty beds is attached to the school. While the building was ill adapted for use as a hospital and was of course deficient in equipment, it looked remarkably neat and well kept.

Military Veterinary School

Mention may be made here of the Military Veterinary School maintained by the central government at Paotingfu in Chihli Province. This school has two Japanese professors and four Chinese professors who were trained in Japan. The Director is a graduate of the Peiyang Medical School, and seems to be highly regarded by the foreigners in that vicinity. There are now seventy-two students in the school in two classes. The course lasts four years but there are no first or fourth year students at present. This institution, though small, made a rather pleasant impression on account of its neatness and its facilities for doing practical work, including operating and dissecting rooms, animal houses, etc. The students in this institution are supported by the Department of War and are intended to become military veterinaries. The annual appropriation for its maintenance is said to be about $54,000 Mex. or about $25,000 gold.

Conclusion

Chinese government and private schools of all kinds have been laboring under great disadvantages during the last four years, on account of disturbed political conditions and the financial straits in which the government has found itself. The extent of the interest which the Chinese medical schools have aroused in the student class is, however, worth noting. In the schools which we have described (excluding students of pharmacy and veterinary medicine) there are

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enrolled 657 students, and in many cases we have been told of large numbers of candidates for admission being rejected. While in some few schools the enrollment is artificially stimulated by the free tuition, board and lodging offered, it is fair to say that the practice of medicine is already being regarded by many students in strictly Chinese schools as a dignified occupation for which they would like to prepare themselves.

The government control supposed to be exercised over institutions calling themselves "special colleges" is still incomplete. For example the Wuchang school does not insist on candidates for admission attaining the standard of middle school graduation. The specifying of German as the foreign language to be taught in medical schools is unfortunate, since the majority of Chinese students prefer English, and are better prepared in that language. It would be desirable if the government could be induced to allow English as an alternative to German.

Considering the limited funds at the disposal of the central and provincial governments the classes admitted to the schools are too large. If the requirements for admission were raised by the establishment of a three-year preparatory course, in which thorough instruction should be given in one foreign language, preferably English, and in the principal natural sciences, much better work could be done with no greater expenditure of money than at present. It would undoubtedly be advantageous also to combine some of the schools, as for example the three institutions at Tientsin and Peking, though there might be some practical difficulties in effecting such a combination.

The Chinese medical schools are greatly handicapped by the fact that not one of them has access to a really satisfactory hospital.

III. 3

MISSIONARY MEDICAL SCHOOLS

Missionary medical work in China originated in the form of dispensaries and hospitals—at first on a small scale, then gradually extending until they are found in nearly every province, in all the principal cities, and in many small places. The necessity of having native

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into such distinctly lay forms of benef depends on a wholly new conception of the nature and purpose of the missionary cause—the conception that it is the function of the missionary to carry to his field not the Christian religion alone, but as well all the finer elements of modern civilization. To be sure there are many yet who regard humanitarian work of any kind as merely a means of getting a hearing for evangelical preaching. Still, the main question is practically settled, and missionary societies generally have assumed frankly the great duties involved in the extensive educational and humane activities which have been set going in China. Occasional echoes of dissent are heard, but on the whole the question may be regarded as closed.

The need of co-ordinating the educational work of the various missionary bodies could not long be ignored, and efforts were made accordingly. Educational forces were united so as to form union

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institutions, and educational associations were formed for the discussion of questions of common interest. The Medical Missionary Association of China is one of these organizations. With some five hundred[1] members from all parts of the Republic the Association is able to take large views of what is best for China as a whole and has already been of marked service. One of its most useful activities has been that of recording its opinion on policy with regard to the development of medical education. At the meeting of 1913 it was strongly urged that no new medical colleges be started in China until proper provision in staff, buildings, and equipment should be made for the most promising of the schools already existing. A list of nine institutions was adopted as those for which provision should first be made. The following recommendations are also of importance:

"*Entrance Requirements.* For the present the minimum entrance requirements for a medical college should be a Middle School pass, but ultimately the minimum should include at least two years of the College Course, and a foreign language should be one of the compulsory subjects.

"Note. This terminology is to be understood in terms of Chinese grading, the Middle School being that which follows the Lower and Higher Elementary Schools; and the college course that which follows the Middle School."

The list of schools approved includes those at Moukden, Peking, Tsinanfu, Chêngtu, Hankow, Nanking, Hangchow, Foochow, and Canton. Of course these recommendations are to be taken as addressed to the various missionary bodies.

Schools of medicine in the cities named are conducted by a union of various missions, under agreements varying in their details with the particular circumstances of the case.

Besides the schools above named those in Shanghai and Changsha are worthy of careful consideration. That at Tsingtau belongs to the German Government of that Colony, and that at Hongkong to a corporation chartered by the British Government.

Within the above will be found all the medical schools worthy of notice which are not controlled by the Chinese government.

[1] Four hundred seventy active members and fifty-four corresponding and honorary members in 1914.

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Moukden

The Moukden Medical College dates in its inception from 1908. It was opened for instruction in March, 1912, with forty students. The property belongs to the United Free Church of Scotland, which has final authority on financial matters. The management of the college is in the hands of a Board consisting of representatives from the College Senate, and from the Mission Councils of the three Missions in Manchuria—those of the United Free Church of Scotland, the Irish Presbyterians, and the Danish Lutherans. A representative may also be appointed by the Chinese government. The college is not chartered. Appointments to the staff are made by the United Free Church of Scotland, or by the mission supporting the missionary in question, in consultation with the Board of Management.

Land used and to be used for medical college purposes amounts to nearly six acres. The college building erected in 1912 is of four stories, and is devoted to lecture rooms and to laboratories. Its cost was about £4,000 ($20,000 gold). There has recently been completed a dormitory to accommodate one hundred twenty persons, and there are four dwelling houses for the staff. The sum of £1,645 was given for the dormitory, but more will be required for its completion.

The total expenditures for current expenses for the year 1913 were £1,930. This does not include salaries paid by the missions. The main source of income is special gifts. Students' fees for 1914 are estimated at about £420.

The staff consists of seven foreign medical men, besides a chemist and lecturers. The staff give full time to the college and hospital. There are eighty students, whose preparation covers the course of a Chinese government middle school or of a missionary high school. Instruction is in Chinese, but English is taught: "It is expected that a good many of the Seniors and a still larger number of the Juniors will be able to have their final practical examinations largely in English, and to read English medical literature." The course of study covers five years. The first students are expected to graduate in 1917. Students' fees are $72.00 Mex. a year.

The University Hospital belongs to the United Free Church of Scotland and is operated by that body. The building, which cost

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approximately £6,500, has 140 beds, and is used as a means of clinical instruction for the college. There have been considerable contributions from Chinese officials and from private persons.

Peking

The Union Medical College at Peking is controlled by a Board of Managers elected by the local bodies of six missionary organizations —the London Missionary Society, the American Presbyterian Mission (North), the American Board of Commissioners for Foreign Missions, Peking University (American Methodist Episcopal), the London Medical Missionary Association, and the Church of England Mission. There is no charter, but the college is recognized by the Chinese government as a medical college and registered as such by the Board of Education (i.e., the Ministry of Public Instruction). The Board of Managers nominally appoints to the staff, but practically the power of appointment rests with the several missions concerned. It is expected that the College will become a part of the reorganized Peking University. The title to the property valued at $131,900.00 gold is vested in the London Missionary Society. There are five buildings, one for college work, a dormitory, a hospital for men, a hospital for women, and an out-patient department.

The total expenditure for current expenses for the college and hospital for the year ending June 30, 1913, was $46,988.71 gold, including all salaries. The total income for that year was $48,058.89 gold, of which $30,037.71 came from the missionary societies and $6,897.80 from the Chinese government for services rendered.

The staff consists of fourteen foreign medical men giving full time to school and hospital, besides lecturers and assistants. There are ninety-five students in the college and forty-three doing preparatory work. The course covers five years. The requirements for admission cover practically the education of a Chinese middle school or of a missionary secondary school. A preparatory year is offered. Instruction is in Chinese (Mandarin). Textbooks are in easy "Wen Li," the written language which is used throughout the whole country.

Clinical practice is afforded by the Men's Hospital, 60 beds, and the Women's Hospital, 30 beds.

There have been thirty-eight graduates, the first in 1911.

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Tsinanfu

The Union Medical College at Tsinanfu is the medical department of the Shantung Christian University. This institution is formed by a union of the American Presbyterian, English Baptist, and Church of England Missions. For the four departments of the University the Presbyterians furnish nine professors, the Baptists six, and the Anglicans one. Title to the property is vested in the Baptist Missionary Society of London, which has provided nearly all the buildings. The University is not incorporated. The value of the entire plant of the University, including fifty acres of land and all the buildings, academic and medical, is estimated at $207,215 gold. The new hospital in this estimate is placed at $10,000.

Appointments to the staff are made by the University Council, either on recommendation of the missions or with their approval.

The buildings comprise a college lecture and laboratory building, a hospital for one hundred patients (under construction), an outpatient department (under construction), dormitories for forty-eight students, with residences for the staff, and some minor structures.

The current annual income is estimated at $7,900.00 Mex. besides salaries, $5,460.00 gold, paid by the missions. This may be held equal to a total of approximately $20,000.00 Mex. or $9,000.00 gold. The expenses will balance income. The completing of the new buildings will add further expense. The main source of income is two societies—the American Presbyterian (North) and the English Baptist.

The staff comprises five foreign medical men and a foreign nurse.

There have been forty-six students during the year 1913–14, of whom it was expected that seven would be graduated in June—the first graduates of the college.

The requirements for admission cover the course of a Chinese middle school or a missionary high school. There is a preparatory year, and a five-year medical course. Instruction is in Chinese.

Nanking

The Nanking Medical School is the medical department of the University of Nanking. This institution was formed by a union of

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the work of the Board of Foreign Missions of the Methodist Episcopal Church, the Foreign Christian Missionary Society, and the Board of Foreign Missions of the Presbyterian Church in the United States of America. It is incorporated under the laws of the state of New York, three trustees being appointed by each of these three bodies. Other missionary organizations may be admitted by the Board of Trustees, with suitable representation. One trustee is appointed, in accordance with the last named provision of the charter, by the Foreign Board of the Southern Baptist Convention, one by the Executive Committee of Foreign Missions of the Presbyterian Church in the United States of America South, one by the Board of Foreign Missions of the Methodist Episcopal Church South, and one by the American Baptist Foreign Missionary Society. The Board at present is thus composed of thirteen members, and represents seven church organizations in the United States. All property of the University is held by this Board of Trustees. A Board of Managers on the field is composed in a similar manner. The President of the University is appointed by the Board of Trustees. Appointments to the staff of the hospital are made by the Faculty of the Medical School subject to the approval of the Board of Managers.

The land at present held and available approximates fifteen acres valued at about $53,230.00 Mex. Buildings now used or immediately available are estimated to be worth about $93,550.00 Mex. These, excepting a few residences, are all old and most of them will have to be replaced. The hospital equipment is valued at $7,225.00 Mex. Thus the total value of the present plant may be considered to be about $154,005.00 Mex. or $69,302.25 gold.

The current expenditures of the school and hospital may be estimated at approximately $16,660.00 gold. This includes the salaries of five medical men. Three will soon be added for the hospital. The staff therefore will include eight foreign medical men, with a foreign woman as superintendent of the hospital. Chinese resident physicians and assistants all give full time to the school and hospital. Ten students were graduated in 1914, and fifteen are now in the school. Eighteen in the high school are preparing to enter the medical school.

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The requirements for admission cover the course of a secondary school—a Chinese middle school or a missionary high school. There is a preparatory course of one year and the medical course includes five years. Instruction is given in Mandarin, but some technical terms are given also in English.

The present school was organized in 1910 as the East China Union Medical School, which became the medical department of the University in 1913.

Foochow

The Union Medical College at Foochow dates from 1911 as the Foochow Medical School of the Church Missionary Society. In 1914, by agreement of this society with the American Board and the Board of Foreign Missions of the Methodist Episcopal Church a union college was formed, under joint management. The Church Missionary Society and the American Board have each a hospital in Foochow.

The plant is the property of the Church Missionary Society, and comprises a building for lectures and laboratory work with some dormitories. Land and buildings are estimated to be worth $6,000 gold. The total amount desired to complete the plant and equipment is estimated at $21,575 gold. The staff comprises five foreign medical men, paid by the respective missions. Three more it is thought will be needed as the college increases in numbers. There are eighteen students at present, and plans for extension call for dormitories to house sixty. The fee is $50 Mex. This is supposed to cover light, laboratory fees, and books to the average value of $14 a year. The standard of admission is low, including only the end of the second year in the middle school. Teaching is in English. There is a preparatory course of one year, and the medical course covers five years. There should be an abundance of clinical material in the hospitals. No arrangements have yet been made to begin dissection.

Hangchow

The Hangchow Medical School is conducted in connection with the hospitals of the Hangchow Medical Mission of the Church Mis-

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sionary Society. The hospitals are well organized and efficient, providing for about 275 patients. The plan of the medical school is to take one class and carry it through a five years' course before taking another. There are five foreign medical men on the staff of the school and hospitals. There are fifty-six students. Teaching is in Chinese and the standard is comparatively low. It is intended to have the Nanking University do the first two years of the work, the students coming back to Hangchow for their clinical work. The plant and management of the school and hospitals are so united that separate statistics are impracticable.

Chêngtu

At Chêngtu medical education is projected in connection with the West China University, but we are informed that it is not yet under way. The Commission did not visit West China.

Hankow

At Hankow there is a *Union Medical College*, the teachers being supplied by two English missions, the London Missionary Society and the Wesleyan Mission. The American Baptist Foreign Missionary Society has also co-operated in the past, and a small annual grant is made by the China Mission of the Reformed Church in the United States. There are three foreign medical men on the staff. There are twenty-four students and about twenty have been graduated, seventeen of whom are now employed as assistants in various missions. The requirements for admission are low—little more than a good knowledge of Chinese being necessary. The course is five years, and teaching is in Chinese.

Hankow is an important center of population and business. The three cities (Hankow, Hanyang, and Wuchang) have a population of perhaps 800,000. The groups are centrally located and are easily accessible by rail and river. Large industries and extensive commerce already exist here, and everything points to material future growth. An influential official stated that if a medical school were established at Hankow it might be possible to secure for it a grant of government land.

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Canton

Canton is a great center of Chinese life and the place of the earliest business contact between east and west. There have long been hospitals under European and American management. Attempts at the formation of medical schools to teach western medicine have not been very successful.

There have been several such attempts.

1) *The University Medical School.*—In 1904 the Christian Association of the University of Pennsylvania undertook to carry on the medical department of the Canton Christian College. Four medical men and a nurse were placed in the field. They acquired the language and taught one medical class, also an excellent body of nurses. For various reasons they have thought best to retire from the field and have transferred their efforts to Shanghai, where a connection has been formed with St. John's University. The property of the University Medical School, consisting of upward of eight acres of land and a small hospital and dispensary building valued altogether at $25,000 gold, was left for the use of the Canton Christian College for three years, at the end of which time the college may acquire the property by purchase. Two of the Pennsylvania staff also remained at the Canton Christian College. There is one other physician on the college faculty who is available as a medical teacher.

2) *The Kung Yee Medical School and Hospital* date from 1909. Early in 1908 the Medical School connected with the Canton Hospital was closed and an attempt to found a medical school for men by members of the Presbyterian Mission was not approved by the Home Board. In December 1908 Dr. Paul J. Todd interested a number of Chinese gentlemen in the establishment of a new medical school and hospital under Chinese auspices. The sum of $5,000 Mex. was raised by the Committee and in the spring of 1909 the school was opened. In 1909 a site on the river front was purchased. In 1910 subscriptions to the amount of $22,512.29 Mex. were raised, and in 1911 a hospital building with accommodations for sixty patients was completed. In 1912 the Government gave the institution twenty acres of land just outside of the city, and in 1913 gifts from private sources amounted to $11,000. Some other land was

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bought. It is planned to raise funds for the erection of buildings on the new site and to make the transfer in 1915.

The Directors of the School and Hospital are all Chinese. There are twenty-four members of the Faculty, of whom four are foreign medical men. The rest are Chinese, one educated in Edinburgh, one in Fort Worth, two in Japan, four in Tientsin, and the remaining twelve in Canton. There are one hundred twenty men and thirty-seven women students. The requirements for admission are low —a knowledge of Chinese, some geography, history, and arithmetic. It is hoped that graduation from a middle school may in time be the standard. Instruction is in Chinese.

The river front site where the work is now carried on is valued at $39,000 Mex. and the buildings at $26,000 Mex. The hospital has sixty beds. The land outside the city is valued at $40,000 Mex. Total college and hospital equipment valued at $14,699.92 Mex. The total assets therefore are placed at $119,699.92 Mex. or about $53,865 gold.

The income for 1913 was $50,623.48 Mex. of which $17,278 came from fees from male students (the average fee is $100 a year), and $8,483.40 Mex. from donations. The expenditures for 1913 were $50,127.22 Mex. of which $8,500 were for teachers' salaries, $1,520.48 for operating expenses of the college, and $18,278.13 for the purchase of new land.

The institution has invited the several missions in and near Canton to join with it in a Union Medical School.

3) *The Plan of the Canton Hospital.*—This is the oldest hospital in China, has a valuable site on the river front, fair buildings with three hundred beds, no endowment, and inadequate equipment. It belongs to the Canton Medical Missionary Society, of which anyone may become a member by paying $10 Mex. Medical instruction was formerly given in connection with this hospital but was discontinued in 1908. It is now proposed to make the hospital the clinical department of a Union Medical College for South China. Such medical college would have a middle school pass as its basis. Instruction would be given in Chinese, but students would be required to have a reading knowledge of one European language, English, German, or French, before graduation. It was proposed that the

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course should be five years and that there should be one year interneship in an approved hospital before a degree should be granted. At the time when the commission left China it was not known whether this plan would be carried out.

4) *The Hackett Medical College for Women.*—This school, connected with the David Gregg Hospital, is under the auspices of the American Presbyterian Board. There have been sixty-eight graduates. The course is of four years, and there are hereafter to be two years of preparatory work. There is also to be a year of interneship in a hospital. The teaching is in Chinese (Cantonese). Two well-trained women have recently been added to the staff, but they are engaged in acquiring the language.

5) The Medical School supported by the French Government in connection with the Hôpital Doumer is discussed on page 39. It is entirely inadequate as a teaching institution.

Shanghai

This is one of the most important cities in China, with a population of about 1,000,000. Situated near the mouth of the Yangtze River, and with a considerable foreign settlement, it conducts a large trade with the interior. The size of the city and the wealth of the Chinese who have taken up their residence there, partly for business reasons and partly for security of person and property, make it clearly an important center for medical education. The abundance of clinical material must be beyond question. Thus far, however, attempts at establishing medical schools have not met with large success.

The schools are that of St. John's University, which has recently made an agreement of co-operative work with the Christian Association of the University of Pennsylvania; the Harvard Medical School; and a German school, which the members of the Commission were not allowed to visit.

The Medical School of St. John's University in 1911 was united with the new Harvard Medical School and the work was done together, St. Luke's Hospital affording clinical material. This union was finally dissolved in 1913 and a new union effected with the

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Christian Association of the University of Pennsylvania. The class of five graduates in June, 1914, were joint students of St. John's and Harvard. The new union will probably be called "The University of Pennsylvania Medical School in China, being the Medical Department of St. John's University." St. John's will contribute four or five men to the staff and Pennsylvania probably two. The course will be five years and the requirements for admission two years of St. John's College or an equivalent, with stress laid on scientific work. The teaching will be in English. St. Luke's Hospital (140 beds) will afford clinical teaching. This should be a school with good standards, with a good hospital, well-trained instructors, and an excellent college to prepare students.

The Harvard School was opened in conjunction with St. John's in 1912. In 1913 on the termination of that agreement, an agreement was made for five years with the Red Cross Society of China by which the hospital and other buildings of that Society and their medical school were turned over to the Harvard Faculty. The hospital has fifty-six beds. The Faculty consists of ten foreign medical men and one foreign nurse. There is also a business manager. Five of the staff give full time to teaching (one of them is on leave of absence). Four have a separate income from private practice. One was for 1913–14 a member of the Faculty by courtesy, being an appointee of the State Board of Health of Oregon. One instructor is on half time, teaching the rest of the time in other institutions. The special laboratory and hospital equipment in the Red Cross buildings is the property of the Harvard Medical School and is valued at $13,500 gold. The Harvard Medical School owns a tract of land of thirty mow (a trifle over five acres) on which it is proposed to erect a new hospital building. A gift of $50,000 gold has been made for the purpose. A tract of ten acres of land in the mountains at Mokanshan has been given to the school. This will make it possible to have summer cottages for the members of the staff. Provision has also been made for an out-patient clinic in a congested part of the international settlement.

The budget for 1914–15 plans expenditures amounting to $41,500 gold for school and hospital. The main source of income is private subscriptions. They amounted for the year ending June 30, 1913,

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to $32,980.75 gold (including a balance carried over from subscriptions of the previous year, $2,036.80).

The requirements for admission are the completion of the middle school and at least two years of college work, including chemistry, physics, mathematics, and English. The course is five years. Instruction is wholly in English.

There were twenty students in 1913–14—five in the fifth year, under the joint instruction of St. John's and Harvard, none in the fourth year, six in the third year, six in the second year, and three in the first year.

Under the terms of the agreement with the Red Cross Society, fifteen appointees of that Society have instruction without tuition fees. There were twelve such appointees in 1913–14. No tuition was charged the five St. John's students. The tuition fee is $100 Mex. and the dormitory charge $75 per year.

Changsha

Changsha is the capital of Hunan Province and has a population of about 250,000. It is reached from Hankow by steamer on the Yangtze and Siang Rivers in forty-two hours. The projected railway connecting Hankow and Canton is to pass through this city. Of this railroad seventy-three miles have been completed at the Canton end and thirty-three miles south from Changsha. There is also projected a railway from Kiukiang to Changsha.

The proposed medical school in connection with the Yale Mission—"Yale in China"—is expected to begin its preparatory work in the fall of 1914. There will be a medical preparatory course of two years, following a middle school course, and a medical course of four years leading to the M.B. degree. The M.D. degree will be given after a further interneship of at least one year. The Yale Collegiate School conducted at Changsha will provide a suitable middle school preliminary training. English will be used in the medical instruction, but teachers will be able to make explanations in Chinese. Premedical work was attempted in 1913, but was given up owing to disapproval by the central government of an agreement between the Yale Mission and the provincial government of

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Hunan for the support of the work. At that time there were four hundred candidates for admission.

A new agreement has since been made which has received the approval of the central government. This agreement is between the Yale Mission and a group of Hunanese gentry duly registered as "The Hunan Ru Chun Educational Association." This Association undertakes to provide funds for the medical school under certain conditions, and in turn proposes to secure such funds from the provincial government. The purposes of the agreement are set forth to be to maintain a hospital, a medical school, a school of nursing, and a laboratory for research.

The Hunan Association agrees to provide funds (1) to the amount of $156,000 Mex. for school buildings, the buildings and land to be the property of the Association; (2) up to a maximum of $50,000 Mex. a year for the running expenses of the two schools—this not to include salaries of teachers who are graduates of western universities; (3) the expenses connected with the opening of the schools.

The Yale Mission agrees to erect a hospital at the cost of about $180,000 Mex., the building and land to be the property of the Yale Mission; to provide the salaries and expenses of teachers, physicians, and nurses who are graduates of western universities; and to provide the expenses connected with the opening of the hospital.

Jointly the Mission and the Association, pending the erection of the hospital and school buildings, are to maintain a medical preparatory course, the school of nursing (male and female), and the existing Yale Hospital. Yale provides for teachers and physicians who are graduates of western universities, the Association for all other expenses up to a maximum of $50,000 Mex. for the two years. Provision is also made for a joint Board of Managers. The agreement is for ten years.

In the direction of carrying out this agreement, which to be binding must be approved by the Civil Governor of Hunan and by the Trustees of the Yale Mission, certain things have already been done. A gift of $125,000 gold has been made by a Yale graduate for the hospital building. On the other hand the Governor

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of Hunan has turned over to the Association a large Chinese residence and compound in which the premedical work may be carried on.

The plans at Changsha are excellent, with a proper conception of what a high grade of medical work implies. The management has been exceptionally skillful and the interest of the Hunanese has been wisely fostered. There should be developed a strong and useful medical school, though in the opinion of the Commission it will be essentially a provincial institution.

General Comments

Some matters appear at once on a study of the missionary medical schools.

They are recent. Peking opened its doors for instruction in 1908, the first class being graduated in 1911. Tsinanfu graduated its first class, seven students, and Harvard-St. John's its first class, five students, in 1914. Nanking began work in 1911 and Moukden in 1912. The Kung Yee School at Canton was opened in 1909. It should be noted, however, that some medical schools have grown out of teaching hospitals which had been training hospital assistants for many years.

The number of the foreign medical men on the staff is small. Peking with fourteen, Harvard at Shanghai with ten, and Nanking with eight have the most. Moukden has seven and the rest five or less.

The number of graduates is of course small as yet. Peking has graduated thirty-eight since 1911 and Nanking ten. The schools at Hankow and Canton have graduated twenty and forty-five respectively. Tsinanfu graduated its first class, seven, and Harvard-St. John's its first class, five, in 1914.

The plant is little more than rudimentary. Peking has a valuation of $131,900 gold, Tsinanfu $207,215 gold, Nanking $69,302 gold, the Kung Yee School at Canton, $53,865 gold, and the rest $50,000 gold or less.

The cost of maintenance of schools and hospitals including salaries is small—that of Peking being $46,988.71 gold, Harvard

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$41,500 gold, Nanking $25,210 gold, Kung Yee $22,867.27 gold, and the rest still less.

Salaries being generally on a missionary basis are small. The maximum including all allowances is approximately $1,500 gold, but in each of these cases the use of a house is added. The Harvard salaries are slightly higher but no house is furnished, and the cost of living in Shanghai is much greater than in other places.

Tuition rates are low, $100 Mex. or less.

The faculty as a rule give their whole time to the work of the school and hospital, the fees from any outside practice being turned over to the school. Harvard is the only exception, four members of the staff conducting a private practice for their own profit.

The cost of living is small compared with that in the United States. The salaries above named enable the staff to live in reasonable comfort. In Shanghai only is the salary inadequate. A well-informed medical missionary stated to the Commission that the cost of foodstuffs had doubled in the last fifteen years, and that wages had increased from 50 per cent to 75 per cent in that time. Still he thought $1,500 gold enough for comfort. It should be taken into consideration that in many societies the missionaries have the assurance that their families will be taken care of in some way in case of their own death or disability.

The cost of building is much less than in the United States. This is due in part to less cost of materials, but mainly to less labor cost. Mr. Murphy of Murphy and Dana, New York, the architect employed by the Yale Mission at Changsha, estimated that the construction of a brick building in New York would cost 30 cents per cubic foot, and that the same construction in Changsha would cost 12 cents per cubic foot. Costs would be higher in Shanghai.

It is evident that there is no medical school now in China which is adequately equipped and no school which is adequately manned. Some of the schools, however, have really high standards and sound ideas, and the advanced men on other faculties have the right policies in mind.

The relative advantages of the different localities and of the different existing agencies for medical educational work are discussed in detail elsewhere.

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The teachers in the missionary medical schools are for the most part men who have had good training. They are enthusiastic, conscientious, and devoted to their work. Few of them, however, have had any definite preparation for teaching or have become experts in any special line. Many have been called to this service after years spent in running mission hospitals during which they have been overburdened by routine to such a degree that it has not been possible for them to keep abreast of the modern advances of the profession. In spite of this, the fact that they give their whole time to teaching and hospital work helps greatly to increase the efficiency of the schools. Even those among them who are admirably adapted to teaching, in view both of their training and personality, are quite unable to do themselves justice on account of the utter lack of proper equipment. Laboratory facilities and sufficient modern apparatus for the teaching of the fundamental sciences are needed everywhere, and clinical teaching is almost inconceivably hampered by the absence of well-equipped hospitals. Under the circumstances it is remarkable that some of the schools are doing as well as they are.

III. 4

EDUCATION OF WOMEN PHYSICIANS

Women physicians have played a considerable part in the development of western medicine in China. The Chinese are a conservative people and it was a comparatively difficult task to get them to intrust women patients to male physicians. Even now many of the largest clinics for women are superintended by women physicians. In the last few years, however, there has been a great increase in the number of female patients in hospitals conducted by men, and at present in many localities the women turn to male physicians as readily as they would to one of their own sex. This is especially the case if there are foreign or native nurses associated with the male doctor. It is fortunate that this change in the attitude of the Chinese has begun to take place, for almost all the missions report great difficulty in obtaining a sufficient number of women physicians. This lack of trained medical women willing to work in the mission field appears to be more marked in America than in England. The

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SUMMARY

Name	Foreign			No. Students	No. Graduates	Value Plant	Current Expenses	Rate of Tuition
	Date	Staff	Average Salaries and Allowances					
Moukden	1908	7	$1,400 and house	80	.....	$ 50,250	$ 18,950	$ 72 Mex.
Peking	1906	14	1,500 and house	95	38	131,900	46,988	50 " (1)
Tsinanfu	1910	5	1,300 and house	46	7*	207,215	9,410†	10 "
Shanghai Harvard	1912	10	2,400	20	5*	27,000	41,500	100 "
Nanking	1911	8	1,500 and house	25	10	69,302	25,210	100 " (2)
Canton Kung Yee	1909	4	8,500 total	157	45	53,865	22,867	100 "
Hankow	1902	3	1,300 and house	24	20	.....	.....	105 " (2)
Foochow	1911	5	.....	18	.....	6,000	.....	50 "

* 1914 graduates.

† Maintenance of new hospital not included.

(1) Room in dormitory included.

(2) Board and room included.

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situation is somewhat relieved by a small group of Chinese women who have received a medical training abroad. All are doing useful work, but two or three of them are unusually efficient, and demonstrate definitely that with a proper education Chinese women are capable of developing a high degree of professional and executive power.

There are three institutions for teaching women in China. The Hackett Medical College for Women was established about fourteen years ago in Canton by Dr. Mary Fulton, one of the pioneer women physicians in China. The only admission requirement is that students shall have a good training in the Chinese classics. The course lasts four years. Practically no laboratory work is done at present, but laboratory work and two years of preparatory study will be required shortly. The teaching is in Cantonese. Sixty-eight women have been graduated from this school.

The North China Union Medical College for Women was established in Peking in 1908. As yet it has only been possible to take a new class every two years and only one class has been graduated. It is estimated that there will be from twenty to thirty students in the school next year. The language used is Mandarin. The course lasts five years. Students are admitted who have a college degree or a high school diploma, but, failing one of these, they must pass examinations in English, Chinese, mathematics, history, geography, physics, and physiology. The standard for admission will be gradually raised. The equipment and facilities for teaching are small, but plans are under way by which they will be considerably improved. The faculty consists of five women giving their whole time to the school and hospital (two more studying the language), one giving part time, and, hitherto, five men of the Faculty of the Union Medical College who have given part time.

The Women's Medical College at Soochow was started in 1891 by the women of the Methodist Episcopal Church South, and holds a charter from the state of Tennessee. For many years Dr. Margaret H. Polk was the only physician, but now there are nine on the faculty giving whole or part time. The teaching is in English and the course lasts five years. Up to the present there have never been over four in a class owing to lack of space. The last

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catalogue gives the names of fourteen students in two classes, but some of these since have dropped out. The admission requirement is a certificate from a mission higher primary school, but candidates are advised to study at least one year in a mission high school. Applicants without certificate must pass an examination in English, Chinese, geography, Latin, physics, and mathematics. There are eight graduates of the school.

In addition to the above mentioned medical schools women are studying at the Kung Yee Medical School and at the Kwong Hwa Private Medical School in Canton. At both of these there are more men students than women, and for purposes of instruction the sexes are for the most part kept separate. The time for co-education has not yet arrived in China, though it may possibly come in the course of the next ten years.

It will be seen that there are few opportunities for women to study medicine in China, that the existing schools are small, poorly equipped, ill-prepared to train competent physicians, and that the results of their work have been meager. They are hampered from the start by an inability to get a sufficient number of girls with a proper preliminary education. Until the whole standard of education for girls is raised and until a higher education for women has been widely developed, the medical schools will be forced to keep their admission requirements low, and to struggle with a poorly prepared group of students. It would hardly seem wise to take active steps to foster medical education for women until the underlying educational structure has been considerably strengthened. For the present such women as are peculiarly fitted for the profession might better be sent abroad for a thorough training. One Chinese girl is at present at the Johns Hopkins Medical School. The development of medical schools for women will moreover, unless admission requirements be high, tend to diminish the importance of the nursing profession, and the training schools for nurses will be filled with girls who are below the standard of the medical schools. At the present time in China high grade nurses are as much needed as are women physicians, and it is essential that the nursing profession be recruited from girls who are of good social standing, and who have received the best possible education.

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III. 5

NON-MISSIONARY MEDICAL SCHOOLS UNDER FOREIGN CONTROL

In addition to the missionary medical schools, and the medical schools under Chinese control, both of which have already been considered, there are a number of medical schools in China which are under foreign control, but are non-missionary in character.

1. THE JAPANESE MEDICAL SCHOOL IN MOUKDEN

This institution was not visited by the Commission. It was started about three years ago, and is carried on in connection with the hospital established by the South Manchuria Railway. Both school and hospital are supported by the railway. The hospital is planned to have eventually one hundred fifty to two hundred beds. When visited by Dr. Cochrane of the London Missionary Society, two years ago, there were about sixty patients. He describes the hospital as being first-class, with excellent operating rooms, obstetrical and dental departments. At that time there were no students in the school. It was planned to have a staff of about twenty doctors in connection with the hospital and school. A knowledge of the Japanese language is one of the entrance requirements.

This school and hospital, being backed by the railway, should not lack funds and it is quite possible that they may develop into strong institutions. The school will certainly be a worthy rival of the Union Medical School in Moukden. The Commission was informed in Japan that it was anticipated that some Japanese students who failed to gain admission to medical schools at home would enroll in the Moukden school.

2. THE GERMAN MEDICAL SCHOOL AT TSINGTAU

The Chairman and Secretary visited Tsingtau May 23 and were shown every courtesy. A medical school has been planned and the preliminary years are in operation. The well equipped middle and high schools carry students somewhat further than the German gymnasia. There were at the time some three hundred

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Chinese young men in the high school, and the fundamental medical sciences were taught by German teachers, using the German language. Perhaps thirty of these young men desire to become physicians, and preparations were under way for their clinical instruction. Within the year 1914–15 it was planned to erect a hospital with about two hundred beds, and also suitable laboratories. The entire plant, hospital, laboratories, and equipment, it was estimated would cost approximately $200,000 gold. The war may put a stop to these excellent plans.

3. THE GERMAN MEDICAL SCHOOL AT SHANGHAI

The Commission tried to visit this school but were informed that they could not do so as it was "examination time." The Commission met several other people who had also been unsuccessful in their attempts to see the school. One of the professors in the Harvard Medical School at Shanghai has been through it, and speaks well of the equipment, but the work is apparently not far advanced. In conversing with Professor Kitasato, at the Institute for Infectious Diseases, Tokyo, we found that the Japanese had also not been welcomed at the school. One of the professors of the Institute told us that he had seen the school, but that it was not so well equipped as the Harvard School in Shanghai.

4. THE FRENCH MEDICAL SCHOOL IN CANTON

This medical school is carried on in connection with the Hôpital Doumer, an institution supported by the French government, and by the government of Indo-China. The course lasts five years, and there are at present forty-five students. The requirements for admission are a fair knowledge of Chinese, and a little geography, arithmetic, and writing. The staff of instructors consists of three French army surgeons attached to the hospital and one Chinese assistant. None of the French doctors speaks Chinese, so the lectures are delivered in French, and translated into Chinese by an interpreter. The doctor with whom we visited the hospital was distinctly apologetic about the standard of the medical school.

This is a low grade school, and one of which curiously little is known by medical men outside of Canton. It is of very little

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importance, either local or general. The fact that it has so many students is of interest as showing how desirous the Cantonese are of taking up the medical profession.

5. THE HONGKONG UNIVERSITY MEDICAL SCHOOL

With the establishment of the new Hongkong University in 1912, the work of the old Hongkong Medical School, which had been in existence for nearly twenty-five years, was taken over by the University, and its lecturers became members of the faculty of the new institution. The present school is planned to be of high grade, and its degrees are recognized by the General Medical Council of Great Britain. The entrance requirements are high, but they are rather more adapted to English than to Chinese students. Teaching is in English. At the end of a five years' course the degree of M.B. is given, and five years later, after doing special work, the degree of M.D. may be obtained. There are some forty students and about fifteen members of the teaching staff. The professors of anatomy and of physiology are both "full-time" men who have come out from England within a year. The lecturers on chemistry and physics are connected with the department of engineering. The professor of pathology is in charge of the government laboratory, and has control of the autopsies at the public mortuary. Instruction in surgery is given at the hospital of the London Missionary Society, but most of the instruction in medicine until lately was at the Tung Wah Hospital. The latter is controlled by a Chinese Board of Managers, and has on its staff practitioners of Chinese medicine as well as western trained doctors. It has a large amount of clinical material, but is a most inefficient institution, and entirely unfit to be used for teaching purposes. There was talk of remedying this defect by opening the government civil hospital to students. There is a new and excellently equipped building for anatomy, and the supply of bodies for dissection is plentiful. It is hoped to add a special wing for physiology. At present the laboratories of pathology and physiology are in the University building. Most of the students live in the hostels of the University or of one of the missions. The total expense per annum for a student is about $650.00 Mex. The Dean of the School emphasized the fact that this is much less than

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the cost of going to England and that it is planned to give a course of study similar to that in English schools. It is, however, much more than most Chinese students can afford.

The advantages and disadvantages of this school, together with its probable relationship to medicine in China, are discussed in another part of this report.

III. 6

LOCATIONS CONSIDERED FOR MEDICAL EDUCATION

In considering the best locations for medical educational work in China we have found the missionaries and others in each of the leading provinces deeply impressed with the need of a school in their immediate vicinity, and they have been able to bring up very impressive arguments based largely on the population of their respective provinces and the medical needs of the people, as well as on the strong provincial spirit which often makes each province seem a separate problem. In most cases these arguments have been sufficient to convince us that in the abstract it would be highly desirable that existing schools should be maintained and strengthened, but considering the problem with due regard for the available resources of money, of instructors willing and able to teach modern medicine in China, and of students qualified to receive such instruction, it becomes evident that smaller beginnings are both necessary and desirable. Our effort has therefore been to select a few schools so located and organized as to have as wide an influence as possible, and to afford reasonable assurance that they would give a high grade of teaching in the strictly professional studies and also foster the high moral standards which are essential for the best scientific and humanitarian work. We have been obliged to consider the suitability of each institution for effective co-operation with the Foundation, particularly with regard to its standards, and its freedom from interference based on political, sectarian, or personal prejudices. The availability and variety of clinical material also had to be considered, though in a country like China, with an enormous population and almost no hospital facilities, a large number of patients can be obtained almost anywhere, once efficient

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medical assistance is offered. Besides there are the important considerations of existing assets in the form of buildings, land, and equipment, the availability of qualified students who wish to study medicine, the good will and standing of the school, and the extent to which it has secured Chinese co-operation. Institutions which have the advantage of intelligent Chinese assistance, through Chinese representatives on local boards of control, and the appointment of qualified Chinese to responsible executive and teaching positions, should be encouraged, since through the gradual extension of such participation the Chinese will be prepared eventually to take over themselves the burden of supporting and administering such institutions. One of the great advantages of the larger cities is that already a number of well educated, public spirited, and reliable men, with modern ideas, can be found in them to fill such positions of trust. Their advice and support are often invaluable.

We may begin by considering the northern medical schools.

Moukden

Moukden, though it is the political center of Manchuria, i.e., the three Eastern Provinces, Fengtien, Kirin, and Heilungchiang, has little commercial significance. Its population is only about 180,000. Furthermore a large part of the population of Manchuria consists of emigrants from Shangtung and Chihli who are still attached to their native places and in some cases keep their families there. This in part accounts for the fact that there is comparatively little of the strong provincial spirit that exists elsewhere in China. The people are accustomed to travelling and move about a good deal. This district, compared with other provinces, is remarkably well served with railways, and in winter the cart roads are in sufficiently good condition to make access to the railways comparatively easy. Peking can be reached in one day from Moukden by express, and in ordinary trains by two days travel from sunrise to sunset. The language is practically the same in Peking and in Moukden, with the exception of very unimportant provincial variations. For this reason most of the students at Moukden could easily go to

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Peking for their medical training and it seems therefore useless to undertake a separate medical educational work in Manchuria under present circumstances when the number of qualified students throughout the country, and the resources in men and money for maintenance of the schools, are so limited. This is also the opinion of many of the leading medical missionaries in China. Another reason for this conclusion is the fact that the Japanese government, acting through the South Manchuria Railway Company, a government-controlled corporation, has established there what seems likely to be a fairly efficient medical school.

The hospital around which the mission school has grown up has a fine record, notably for the services of its doctors in the Russo-Japanese war and during the plague epidemic of 1910–11, and it has received Chinese support to an unusual extent.

Peking

Peking impressed the Commission as being on the whole far the best location in all China for a strong and influential medical school, and we have found this view shared by practically all the medical men with whom we have consulted on the subject. In the first place, it has been the capital of the country almost continuously, under three dynasties and under the republic. It seems likely that it will continue to be so even if great political changes should take place in the country. The population of Peking is variously estimated, the most conservative placing it at 500,000.

Being the capital, Peking is the educational center of the country, the seat of the Department of Education, which, following German and Japanese models, is trying to control the educational policy of the whole country. There, also, are located the highest government schools. It therefore offers opportunities for influencing the educational as well as the administrative officers of the government to an extent that cannot be equalled anywhere else in China. On account of the added prestige which comes with a degree from a school in the capital, students flock to Peking from all parts of the country. It is easily accessible by rail or by sea from most of the important cities of the northern provinces of Manchuria, Chihli,

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Shantung, Shansi, and Honan and even from Hupeh. Other roads already contracted for will bring it into comparatively close touch with Shensi, Kansu, and even Szechuan.

While the claim of Peking residents, that the best Mandarin is spoken there, is disputed by other parts of the country, the Peking dialect nevertheless has been that of the ruling classes for hundreds of years, and it can be understood by practically all educated people throughout the northern and interior provinces, in all of which Mandarin prevails in one form or another. Many parents in non-Mandarin-speaking provinces like Kwangtung and Fukien and in Chinese colonies abroad are glad to send their sons to schools in Mandarin-speaking districts where they can learn to use the language which they will need if they ever enter official life or if they wish to travel or live outside their native province.

The Union Medical College at Peking, while its organization is not wholly satisfactory, appears to be more firmly established and better supported than any other missionary institution in the country. It has the largest faculty, and more students and graduates than any other. Some of the professors should from their records be well qualified for useful work as teachers of medicine, and its new hospital should do a great deal to establish a high standard of hospital practice in China.

This school has one most important advantage which is not enjoyed by any other missionary school in China, in that it is recognized by the Chinese government. Hitherto its graduates have received a government diploma in addition to the school degree, but hereafter the seal of the Board of Education will be affixed to the diploma issued by the college. In the plague epidemic and in the revolution of 1911 professors and students of this school did most useful and even heroic work, and this fact has still further strengthened its position vis-à-vis the government. It receives a considerable annual contribution from various government offices, mainly in return for services rendered by its professors, and some years ago was even honored by a present from the Empress Dowager.

While its equipment is extremely meager, it has an excellent site on one of the principal streets of Peking, and several buildings that will be useful for many years to come. Its inclusion in Peking

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University, which is now being planned, will remedy some of the present defects in its organization by centralizing the control of its policy and its property in an incorporated body, the main interest of which will be educational.

For all these reasons the Commission feels that it is most important that a strong medical school should be maintained at Peking, and that, if possible, the very creditable beginning made by the missionary societies, and their experience, should be utilized by assisting their institution instead of founding a new one.

Tsinanfu

Tsinanfu is the capital of Shantung province and is said to have a population of about 100,000. The Union Medical College there, like that at Moukden, is essentially a provincial institution, and while Shantung is one of the important provinces of China, with a very numerous and industrious population, and with a history of which its people are justly proud, in view of the resources available the subsidizing of a medical school there does not seem justifiable at present. The missions which support this school, the American Presbyterian and the English Baptist, would do better to turn their students to Peking. As at Moukden a very creditable beginning has been made, but its staff and equipment are inadequate, and there is grave doubt whether a sufficient number of teachers can be secured.

Nanking

Nanking has been at various times the capital of China, and even for a few weeks the capital of the unrecognized Republic. Prior to the revolution, it was the seat of the Viceroy who had jurisdiction over the lower Yangtze, and it is now the capital of the province of Kiangsu, but it does not enjoy the same pre-eminence as most provincial capitals in China, since commercially it is overshadowed by Shanghai and even by Chinkiang, while Soochow, the former provincial capital, shares its political prestige and surpasses it in wealth. Though the walls of Nanking inclose a vast area, a large part of it is unoccupied except for agricultural purposes, and the total population is estimated at only 350,000. Geographically

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its position is very advantageous; it is centrally located; the Yangtze makes it easily accessible from all river ports and from the ocean; and now two very efficient railway systems give rapid communication with Tientsin and Peking as well as with Shanghai. Other railways that will soon be built, if world financial conditions permit, will connect it with the interior of Kiangsi and Hunan on the one hand and with Honan on the other.

It is still too early to foretell what will be the effect of this increase in transportation facilities, but it seems likely that Nanking will increase in importance, even if it does not threaten the commercial leadership of Shanghai or take the place of Hankow as a depot for the products of the upper Yangtze. Probably all three places will continue to develop, for there is enough potential trade in the Yangtze valley for all of them.

The most satisfactory feature of the medical school at Nanking is that it is already organized under an American corporation as a department of the Nanking University, and thus possesses an identity of its own. There is danger, however, that the school may be hampered by the retention in the constitution of the local board of managers of the principle of denominational representation and control. A body composed of the same elements but chosen in some way which would allow the members to vote entirely according to their own best judgment would probably prove more helpful in constructive work.

Foochow

Fukien province presents an interesting situation because of the great number of dialects in use there which forced the faculty of the Union Medical College at Foochow to adopt English as the medium of instruction. Like Canton, both its geographical situation, isolated from the other leading provinces in China, and the difference in language between it and the rest of the country make it seem a problem in itself. The number of students prepared to study in English is relatively large, as missionary educational work has been carried on in Fukien for a long time, and it would therefore not be impracticable for men to be sent to a medical school teaching in English at Shanghai or Canton. The increased expense necessary

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to send mission students to one of those cities would be more than compensated by the saving in salaries and other running expenses through the closing of the school, which now lacks the necessary resources in men and money for doing efficient work, and has little hope of getting them. While eventually there ought to be a strong medical school at Foochow, the Commission does not consider it essential that one should be maintained there now. Although Foochow is an open port, it is commercially on the decline, partly because the city itself is not accessible to anything larger than a steam launch, and partly because with the conquest of Formosa by the Japanese it lost its hold on the Formosa tea trade, for which it was formerly the principal market. Its population is still large, however, being estimated at over 600,000.

Hangchow

Hangchow, the capital of Chekiang province, with a population of about 350,000, where the Church Missionary Society has a small medical school, is another place of purely local importance. As that mission has agreed that its students should go to Nanking for the first two years of their work, this institution does not call for further consideration.

Chêngtu

Chêngtu is the capital of Szechuan province and has a population of about 500,000. The proposal for medical educational work there makes a strong appeal on account of the large population of that province, its wealth and its comparative isolation, which renders it exceptionally difficult for students to go to other parts of the country for their education. Nevertheless any school there would be essentially a provincial one, and the Commission believes that it would not be wise for the Foundation to undertake to assist such an institution until the more important schools are well started.

Hankow

Hankow seems certain to become a very important city on account of its situation on the Yangtze at the head of navigation

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as far as ocean steamers are concerned, at a point where many rail and water routes converge. The Peking-Hankow railway already gives good connections with Honan and Chihli, while the Yangtze River and its tributaries, the Han, Siang, and Kan, connect it with the principal cities of Hupeh, Hunan, and Kiangsi, as well as with the other large cities of the lower Yangtze to the east, and with Szechuan to the west. The Canton-Hankow railway now under construction will bring Changsha within a few hours of Hankow, and will make it possible to go through to Canton in less than two days. The Hankow-Szechuan railway, on which work has also been begun, will do as much for many interior cities of Hupeh and Szechuan which can now be reached only after weeks of hard traveling.

Here is located the great plant of the Han-Yeh-Ping Iron and Coal Company, the largest industrial enterprise in China, with many other important modern factories, both foreign and Chinese. There is a population of upward of 800,000 taking together the three cities of Hankow, Wuchang, and Hanyang, which are separated from each other by the Yangtze and Han Rivers. Most of the trade is at Hankow; Wuchang is the capital of the province of Hupeh and its educational center; and Hanyang is the seat of the largest manufacturing industry. This is the strategic center where the revolution broke out, and from which later the present government was able to maintain and strengthen its hold upon the rest of the country.

While geographically and politically Hankow and Wuchang are already very important, they are not the center of such a strong and enthusiastic provincial feeling as we found at Tientsin in Chihli, at Changsha in Hunan and at Canton in Kwangtung. It seems also to be more difficult to find there men who are willing and able to take the lead on behalf of the Chinese community in large public enterprises. The lack of provincial spirit is accounted for in part by the fact that in ancient times the province, after losing most of its population in bloody wars, was filled up with immigrants from neighboring provinces. Later the development of foreign and domestic trade brought to Hankow many Chinese merchants from the lower Yangtze valley and from South China who have little

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interest in the city except to make their fortunes as soon as possible so that they can return to their native provinces.

The Union Medical College at Hankow has a smaller faculty and less equipment in the way of buildings and apparatus than any other recognized missionary medical school which we visited, though it does have access to hospitals with abundant clinical material. Its standards are low. Only two missions, the English Wesleyan and the London Mission, neither financially strong, are co-operating to an important extent in this school, and their representatives have intimated that they would gladly give place to any new institution which would be able to carry on the work on a proper scientific basis. They have little hope of receiving substantial assistance in the near future, for the American Episcopal Mission, the only other strong missionary organization there, is sending its medical students to St. John's at Shanghai. There is, therefore, practically nothing to build upon at Hankow, and to undertake work there would practically mean organizing an entirely new institution. This does not seem to the Commission advisable at present.

Shanghai

As Peking controls the political situation in China, so Shanghai dominates the trade and industrial activities of all the central and northern provinces. It is true that in recent years the direct trade of other ports has been increasing, but nevertheless if the cheap and bulky commodities which must go as directly as possible to the consumer are deducted, it will be found that an overwhelming proportion of the foreign trade of China is conducted through the great market of Shanghai. There are located some of the greatest Chinese industrial establishments such as the cotton mills and the Commercial Press. There also are the head offices of large Chinese corporations such as the Han-Yeh-Ping Iron and Coal Company, and the China Merchants Steam Navigation Company. On account of the security of life and property in the foreign settlements and the modern conveniences to be found there, Shanghai has become a favorite place of residence for retired Chinese officials and wealthy men. From among these men and those with a modern training employed in

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commercial, industrial, educational, and official pursuits, strong advisory committees and much active support for public enterprises can be obtained. So influential is the Chinese community in Shanghai that during the revolution of 1911, although the movement started at Wuchang and the commander-in-chief of the revolutionary forces, General Li Yuan-hung, continued to live there, the negotiations with the Manchu dynasty and the foreign powers were completely taken charge of by the Shanghai leaders, and their decisions were accepted as final by the country.

The population of Shanghai is large, being estimated at about 1,000,000 including the parts under foreign and Chinese control. From the point of view of clinical material it is of special interest because the large foreign community there gives medical men an opportunity to find many cases, both medical and surgical, that are at present comparatively rare among the Chinese. The Chinese population also comes from many provinces and includes many transients, so that the cases are not all of a strictly local character. Shanghai is very accessible, being connected by good steamer service with all the Yangtze valley and coast ports, and by rail with the interior of Kiangsu, Chekiang, and Anhwei as well as with the northern provinces.

The foreign settlements at Shanghai, which contain a population of nearly 700,000 of whom some 16,000 are foreigners, have modern health departments with provisions for sanitary inspection of dwellings, factories, markets, etc., quarantine of infectious diseases, facilities for routine examination of chemical, bacteriological, and pathological specimens, etc. While their control over the Chinese residents is not complete on account of legal and sentimental difficulties, these health departments serve as wonderful object lessons to the Chinese in general, and particularly to medical students in training for public-health work. The foreign example has had a marked effect in improving the manner of constructing and maintaining Chinese streets in Shanghai and has also led to the establishment of very creditable Chinese cholera and isolation hospitals.

There are in the neighborhood of Shanghai many schools qualified to prepare students for the study of medicine, and the English

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language, a knowledge of which is essential, is more widely used there than elsewhere in China. For these reasons Shanghai seems to be after Peking by far the best location for a strong and widely influential medical school.

At present there is no medical school in Shanghai which is established on a really permanent and satisfactory basis. It is true that the work now being done by the Harvard Medical School of China is excellent. The first students were graduated this year (in cooperation with St. John's) and they are very highly spoken of. The present equipment for teaching a small number of students is superior to that of any other institution that we have seen in China. The Red Cross Hospital, which the Harvard School now controls, has the best appearance of any hospital we have seen in the east outside of Manila, though it is far too small. The school has, however, as already noted, no buildings of its own, and the funds for its maintenance come mainly from subscriptions pledged for a short period which is about to expire. Its financial position is therefore not entirely secure. While the attitude of this school toward the missionary movement is sympathetic, it has the great advantage of being entirely free from religious restrictions. Most of the staff have now a good grasp of the medical educational situation in China and with their local experience are well qualified to become the nucleus of a strong medical faculty.

The ideal arrangement would be to have all the forces interested in medical education in the lower Yangtze valley brought together in one strong institution at Shanghai, for at the present stage of development one good medical school in that region should be sufficient.

Canton

Kwangtung is one of the great provinces of China, the first to have extensive intercourse with foreigners, and the one from which most Chinese have gone abroad, particularly to the United States. Cantonese have a reputation for shrewdness and industry throughout the country, and they have been very influential, not only in the radical revolutionary government, but also in the more conservative régime which exists at present. Under the empire also the number

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of influential Cantonese in government service was always large. The profession of medicine is very highly esteemed in Canton, and the number of students now studying medicine is larger there than in any other city in China that we have visited. Even poorly qualified graduates find the profession very lucrative. The city of Canton itself is one of the largest and most influential in China, having a population of about 1,000,000, and is at the same time the one most subject to epidemics of tropical diseases. The existence there of the oldest hospital in China, the Canton Hospital, with a wide reputation and wonderful clinical material which it is willing to place at the disposal of an efficient medical school, is an important asset.

While there is at present no men's medical school controlled by foreign missionaries at Canton, there exists in the Canton Christian College an agency which is qualified to undertake such work and to maintain it at a high level. The fact that this institution is an independent corporation, undenominational and requiring acceptance of no creed, would greatly simplify co-operation with it by the various organizations interested in medical education. The school at Hongkong is indeed close at hand, but it is very expensive, costing the student about $650 Mex. per year, instead of the maximum of about $200 Mex. which would amply cover the usual expenses for tuition, board, and lodging of a student in China. The important scholarships at Hongkong University are available only for British subjects. The admission requirements at Hongkong are further unnecessarily high in unessential subjects such as English literature. Besides these disadvantages Chinese educated in Hongkong tend to go into British government employ or into private practice in one of the British colonies, and it is alleged that they become more or less alienated from their own people, or at least less adapted to work among them. It does not seem, therefore, that Hongkong University meets the needs of South China for medical education, and it is certain that as a center from which to influence the Chinese government and people it cannot be compared with Canton. While Hongkong is making a good beginning there is little prospect of its soon giving instruction equal to that in first-class schools in England.

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Changsha

At Changsha, the capital of Hunan province, a city of some 250,000 inhabitants, the undenominational educational mission supported by Yale graduates is working out a most interesting problem in co-operation with the Chinese in medical teaching and hospital work. Hunan is fortunate in possessing wonderful resources, both agricultural and mineral, and the people of the province have long been known as among the most independent and energetic of the whole country. Even under the empire they did very much as they pleased, and while their early isolation led them to distrust foreigners, they are in no sense anti-foreign. The medical members of this mission, one of whom is a Chinese trained abroad, have been very successful in their relations with the Chinese and in matters concerning the public health they have been the trusted advisers of the local authorities. The Yale Mission feels very strongly the necessity of insisting on all reasonable safe-guards for the maintenance of high standards in its co-operative venture with the Chinese, and we believe, therefore, that this experiment, if carried to a successful conclusion, will have most important results in the gradual development of a high-grade strictly Chinese medical school, and very possibly in the establishment of a model public-health service by the natural extension of the influence of the Yale medical men at Changsha, both Chinese and foreign.

III. 7

HOSPITALS IN CHINA

The following report is based on the personal inspection of eighty-eight hospitals in China and in Hongkong. These hospitals are situated in twenty-eight cities (including Hongkong) and in ten different provinces. Fifty-nine of the hospitals may be grouped as representing the work of twenty-three Protestant missionary organizations (including the Harvard Medical School) while four are conducted by Catholic Missions. Twenty-five are wholly non-missionary in character and are controlled by the Chinese central or local government (ten), by Chinese societies or private individuals

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(eight), by the Chinese Red Cross (two), or by foreign organizations (five). The latter include the Shanghai General Hospital, the International Hospital at Hankow, the Japanese Hospital at Hankow, the Dojin (Japanese) Hospital at Peking, and the French Government Hospital (Hôpital Doumer) at Canton. Two hospitals belonging to the Chinese Red Cross Society are classed among the mission hospitals (Changsha, Shanghai) as they are being at present conducted by the members of the staff of the Yale Mission and the Harvard Medical School. In four of the hospitals visited the physicians are all practitioners of the old style of Chinese medicine. In three others Chinese medicine and western medicine are carried on side by side. It is quite customary in China to separate completely hospital work for women from that for men. Thus it is not uncommon to find in one city the work of a single mission being carried on by two staffs in buildings which may be at a considerable distance from one another. In such instances they have been regarded as separate institutions. When, however, the wards for men and women are in the same building or in adjacent buildings in a single compound, and are under the same general management, the whole has been considered to be a single unit. Thus twenty-three of the hospitals visited are for women alone, and fifteen are for men alone. The remainder are for both men and women.

A study of hospitals in China resolves itself almost completely into a consideration of the mission hospitals. The more important of the non-missionary hospitals controlled by foreigners are established for the care of foreign patients and thus have no very definite influence on China itself. The hospitals under Chinese control, whether government or private, are with few exceptions ineffective, and they are chiefly of interest as demonstrating how small an impression high grade western medicine has as yet made on China. It will, therefore, be proper to present first a somewhat detailed analysis of the present conditions prevailing in mission hospitals.

The Mission Hospitals

One of the first things that the traveller in China learns is the inaccuracy of all general statements. The country itself is so enormous, the physical, geographical, social, and political conditions

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THE NEW CANADIAN PRESBYTERIAN HOSPITAL AT CHANGTEFU
Constructed of native brick



THE NEW CANADIAN PRESBYTERIAN HOSPITAL AT CHANGTEFU
Main building with office, pharmacy, and dispensary

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differ so profoundly in the various parts, and indeed in closely adjacent districts, that what may be perfectly true of one city is wholly untrue even of its near neighbor. In few fields of activity is this more definitely brought home to one than in medical work, which by its very nature comes into intimate touch with that most conservative of classes—the common people. Moreover, in a study of medical work as it is carried on by foreign missions one soon finds that the accuracy of generalizations is limited not only by the inherent local factors, but also by the great differences existing among the foreigners who control the work. This depends in part on the mission body under the auspices of which the work is done, but much more frequently on the individual who is in direct charge. Thus one doctor devotes his attention chiefly to the development of the medical efficiency of his hospital, while another is more interested in evangelistic work, and regards the hospital more as a means to that end. One man has an executive, business-like mind, while in another this may be quite lacking. One man is by nature, and as a result of previous experience in his city, a conservative, while another is more boldly a progressive. It is a common experience to be told that some thing "cannot be done in a hospital in China at the present time," and then to find that exactly this thing is being done in another hospital only a short distance away. Sometimes, of course, the local conditions are different in the two places, but not infrequently the difference lies in the doctors themselves. Besides the personal element in determining the differences found in medical work, there are other facts of importance. Financial support, mission policy, size of the staff, whether foreign or native, the presence or absence of nurses, and other similar questions all tend to diversify the efficiency and standards of different institutions. While, then, it is quite impossible to make comprehensive statements with regard to mission hospitals in general, a broad survey of existing conditions may be drawn, attention being called to the variations where they are of especial significance.

HOSPITAL CONSTRUCTION

There are roughly two types of hospitals in China, the one consisting of native houses more or less adapted to their new use, and

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the other consisting of buildings especially constructed along western lines. The hospitals which are being conducted in native houses are almost invariably regarded as being in temporary quarters. The old houses are used as a makeshift until land can be purchased, and funds obtained for the erection of a new hospital. These hospitals usually represent the first step of the entrance of western medicine into a new center, and as a matter of fact they serve their purpose not wholly unsatisfactorily. The houses are fairly strongly constructed of clay or brick, and consist of one-storied buildings surrounding a series of courts. They are shut in by a high wall, so that even in the middle of a noisy Chinese city they are apt to be peaceful and relatively quiet. The courtyards and the customary large reception rooms form excellent waiting rooms for the crowds that frequent the dispensary. The smaller rooms leading off the main apartments can be readily adapted to use as examining rooms and dressing rooms. The problem of caring for in-patients is more difficult, as the rooms available for wards are usually small, dark, and poorly ventilated. Still worse are the facilities for baths and lavatories. In the Chinese house this department is of the simplest, and it requires both an ingenious and a persistent man to provide proper arrangements, and to keep them subsequently in anything approaching satisfactory condition. The construction of an operating room usually means the rebuilding of some portion of the house and even then the result is necessarily rather primitive. Running water is rarely to be had in these hospitals, and central heating almost impossible. Nevertheless some of these hospitals, and especially those in the larger houses, have been quite well converted into simple but useful hospitals. The degree to which they are adapted, or, more accurately, the amount of money spent on them, usually depends on the prospective term of residence in them, and on the possibility of replacing them by modern buildings.

The buildings especially constructed for hospital purposes vary of course greatly, depending on the amount of money available, the size of the staff, the period of their construction, and other factors. The older hospitals frequently consist of a group of buildings, each better than its predecessor and the whole representing the growth of the medical work. The hospitals are sometimes situated

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THE METHODIST EPISCOPAL HOSPITAL FOR WOMEN AT TIENTSIN (back)



THE METHODIST EPISCOPAL HOSPITAL FOR WOMEN AT TIENTSIN

Small rooms with k'angs surrounding a court

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in the heart of the city, but more often they are in a compound just outside of the city walls, as it is difficult to obtain land enough within the city proper. Indeed it is frequently a hard task to get sufficient land even outside of the city. The land is usually held in small pieces by families, thus necessitating the agreement of many individuals before it can be purchased. Inasmuch as most pieces of land are encumbered by graves, which the owners are loath to disturb, the buying of land in China is proverbially a slow process. The hospitals are usually two-storied, sometimes three-storied buildings. The commonest building material is the native gray brick, which gets its color by having water poured on it while it is still in the kiln. Native brick is cheap and seems to be a most satisfactory building medium.[1] Stone and especially wood are rarely used. In some places the buildings are of mud, broken stone, and clay or cement. Reinforced concrete, which has proved to be the best building material in the Philippines, is extremely expensive in China, and it is almost impossible to get workmen in the interior who understand its use properly. All the walls of buildings are usually made of solid brick. This is covered on the inside with plaster. The floors are most often of wood, while in dressing rooms, bath rooms, lavatories, and rarely in wards, concrete is used. Sometimes special preparations are used on the operating room floors. The walls are usually kept clean by frequent applications of whitewash. The wooden floors are often covered with "Ningpo" varnish, an unusually heavy and resistant material which allows of frequent scrubbing. It is most

[1] Very good buildings constructed of native brick with concrete floors cost about $0.15 (gold) per cubic foot in Shanghai and $0.13 (gold) per cubic foot in the interior, but some fairly substantial buildings have been built much cheaper than this. The Erskine Hospital at Changtefu (see photographs) was built and equipped in 1914 at a cost of approximately $8,000 (gold). This includes an out-patient block and a main hospital building (forty beds) with operating suite, of foreign type; buildings of Chinese type with room for one hundred patients on k'angs; an isolation department, and various out-buildings. The land (two and one-half acres) on which the hospital is built cost $500 (gold).

St. Paul's Hospital for Women and Children at Kaifeng, recently finished and well constructed in foreign type, cost $26,000 (Mex.) or about $12,000 (gold). This is a hospital of eighty beds, with quarters for nurses in training, with an apartment for the doctor, and with a separate isolation building. Equipment cost $3,000 (Mex.) or about $1,370 (gold).

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important that all floors and walls should be constructed so that they can be easily washed and sterilized, for the habits of many of the patients are rather crude in regard to cleanliness.

The problem of ventilation and heating varies in different parts of the country. In the south all hospitals are built with broad verandas, and as the wards are practically open most of the year round the question is a simple one. In central and northern China the climate is intensely hot in summer, while it is damp and often extremely cold in winter. The ideal is thus to get a maximum of shade and breeze in summer, and a maximum of sun in winter. The combination is hard to obtain and the problem, which is slightly different in each locality, is a very live one in the minds of all who are working in or building hospitals. The methods of heating vary—hot water, steam, and stoves being used. Running water is far from universal as few cities have a proper water system. In many hospitals however water has been piped from cisterns to the wards, operating rooms, etc., and indeed in some hospitals, even in the country, both hot and cold running water have been put in.

INTERNAL ARRANGEMENTS

1. *Wards.*—The hospitals usually have several large wards for free patients or for those who pay small fees covering their "rice." In addition there are always a number of private wards for one or two patients of the better class. Privacy is a thing that the Chinese value highly and they will often pay well for it, so that these rooms form a considerable source of income for the hospital. The public wards contain from ten to twenty beds. They are large enough, airy, and well lighted. The general appearance of the wards in a Chinese hospital is very variable and depends in part on the doctor in charge, and in part on whether there is a foreign nurse associated with the hospital. It is almost possible to tell whether the hospital has a foreign nurse or not by glancing into the wards. In some hospitals the wards are clean and orderly and compare very favorably with hospitals in the west. In others, where there is no foreign nurse and an inadequate native nursing staff or where the friends of the patients are allowed to camp in the wards, the general appearance is far from satisfactory.

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SOUTHERN METHODIST EPISCOPAL HOSPITAL, KASHING

Building erected in 1911. Two wards of 20 beds each, private rooms, dining-room, bathrooms, students' room, and linen room. Size of ground plan, 80×25 feet. Walls 15 inches thick, of gray native brick. Galvanized iron roof. Cost $3,200 gold.



SOUTHERN METHODIST EPISCOPAL HOSPITAL, KASHING

Building erected in 1911. Dispensary below and operating-room above. Size, 50×52 feet. Cost $3,200 gold.

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Hospital beds in China are of every conceivable type and description, varying from the native k'ang to the latest model of white enameled spring bed. One frequently hears it said that the Chinese prefer to sleep on something hard and that if they are provided with spring beds they will sleep on the floor. This statement is probably a part truth, but it usually comes from some one who has never tried western beds in his hospital, and those who have introduced them frequently say that once the Chinese get used to the new beds, they like them. The most primitive type of bed, the k'ang, which is only found in some of the northern hospitals, is similar to what is used in the native houses. It consists of a brick platform covered with a straw mat. At one end is a fireplace, the flue from which passes directly under the bricks on which the person lies, thus affording him a warm bed as long as the fire is kept up, and one which is hard enough to gratify the most exacting. K'angs are of course uncommon and are usually seen in old Chinese buildings, adapted to hospital use, but they have also been constructed in at least one new hospital which has only lately been opened. Those who advocate the k'angs say that they do away with any feeling of strangeness that a new patient may have and make him at home, and they provide space for many patients who have come a long distance and would otherwise be out-patients. Moreover, they give room for the patient's family or friends who may come to nurse him in case the hospital cannot provide nurses. At best however they are but a makeshift and only call attention to the crying needs of the hospital. Many hospitals have beds of boards laid across two wooden horses. The majority, however, have iron beds. Some of them are fitted with springs of the latest model, some use board slats, and many a not at all uncomfortable rattan or bamboo substitute for a spring. The latter are rather hard, but have some spring, are cool, and are easy to clean—always an important consideration.

As regards bedding and the personal clothes of the patients, customs differ greatly. In the better conducted hospitals all the bedding—mattress, sheets, blankets, or quilts—as well as personal clothing, are supplied to the patient. In these hospitals the patient is required to take a complete bath before admission. At the other end

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of the scale are hospitals in which the patients supply their own clothes and bedding. Lack of money and a lack of nurses are usually the cause of such an unhygienic procedure, and the result is that the wards and patients present a most unfortunate appearance. Between these two extremes lie a large group of hospitals which own a limited amount of clothes and bedding, sufficient to provide only for those patients who have no bedding at all, or whose personal effects are "too dirty." Even in the well run hospitals the conditions in the private wards are often worse than they are in the public wards, for nearly every private patient brings with him one or two attendants or members of his family who live in the room with him, spread out their bedding and their belongings, and sometimes even cook in the room. It is difficult to keep from associating in one's mind the dirty bedding and clothing with the unusual prevalence of typhus fever among the foreign doctors in China. Ten recent cases have come to our attention, and six of these ended fatally—a high mortality from what is undoubtedly in part, at least, a preventable disease.

Cleanliness, orderliness, and neatness in hospital wards can be obtained in China, as is evidenced by the fact that they are obtained in a limited number of hospitals. They are, however, much more difficult to obtain than in the west, for the patients have no knowledge of the meaning of cleanliness. The degree to which they are obtained in any given hospital depends for the most part on the doctor in charge, on at least a certain amount of money which can be devoted to the cause, and, what is most important, on the presence of a foreign nurse. Many missionary hospitals, in which a doctor is working alone without a nurse, present remarkable looking wards, but these are the exception, and they represent a heavy burden put on the shoulders of an overworked man. Sometimes an element which prevents the wards from being at their best is a fear on the part of the staff of driving away the patients, if the conditions are made unattractive to them, or if their native customs are too much interfered with. Not infrequently one is told that it is impossible to make every patient take a bath as the "Chinese do not like baths." The logical answer is that all over China certain hospitals have for years made every patient take a bath, and the number of

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WOMAN AND BABY ON A K'ANG AT THE METHODIST EPISCOPAL HOSPITAL AT TIENTSIN

On the right is the stove, with stoke hole, and pot for cooking set into the top



PATIENTS ON K'ANGS AT THE NEWLY CONSTRUCTED CANADIAN PRESBYTERIAN HOSPITAL, CHANGTEFU

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patients lost by such procedure is quite negligible either from a medical or an evangelistic point of view. Similarly it is possible, although difficult, to have absolutely satisfactory wards provided one has the proper staff and equipment, and provided one "keeps everlastingly at it." An important factor in the appearance of the wards is the presence of the friends of the patients. In a large number of hospitals the friends are allowed to be in the hospital all day, and in some institutions one friend or attendant may spend the night in the ward on the floor. With this dirty mob continually coming and going, eating and spitting, it is of course impossible to keep the wards properly clean. One is told, however, that the Chinese will not come into the hospital unless their friends are allowed to come in freely. Also one is occasionally told that the more friends that come in with the patient, the more people there are to whom the gospel may be preached. The latter is true. The answer to the former is that a few hospitals make it a rule that patients may see their friends at stated times only, and one of the largest hospitals in China has for thirty years allowed friends in the hospital only from three to four daily. It is thus possible to keep out the families, and once the rule is made and has been in force for a time, it will probably interfere but little with the amount of work done by the hospital. There is however one thing to be said in favor of letting the friends into the wards at all times. In many hospitals there is no nursing staff, or there are so few native nurses as to make it impossible for them to care for the patients. Under such conditions, the patients must be attended by their friends. The solution thus lies in making provision for adequate nursing.

In spite of all the difficulties in maintaining ideal wards in China, the ideal may certainly be aimed at and frequently approximated. The importance of cleanliness and order in hospital wards cannot, of course, be overestimated. Not only is this true from the medical side but it is perhaps more true from the point of view of general education. If the Chinese are to learn what is best in western life, if they are to get the instincts of hygiene and sanitation, if the children are to be brought up to be better physically and morally than their fathers, then they must begin with cleanliness. And surely

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the hospital should be a model teaching institution in this regard, impressing its lesson on each person who enters it.

2. *Bath Rooms and Lavatories.*—The hospitals are usually provided with at least one or two simple but adequate bath rooms. Often there is a bath room in connection with each large ward. These are generally rooms with a concrete floor and concrete walls, provided with a drainage system. In them may be placed tin tubs or large earthenware Soochow bath tubs. A small number of hospitals are provided with western enameled bath tubs, occasionally fitted with hot and cold running water. As has been already indicated the degree to which bath tubs are made use of varies from place to place. In the better run hospitals, and in an increasing number, each patient is required to take a bath on admission, and at least once a week thereafter.

The lavatories present a difficult problem, as sewage systems practically do not exist in China. One finds innumerable methods of dealing with the problem. In most cases the floors and partitions are of concrete, so that they can be washed down once or twice daily. The excreta are collected in buckets or tubs and disposed of at least twice daily. In many hospitals the lavatories are screened from flies. To keep these lavatories in anything resembling a sanitary condition is a trying task, which requires the utmost patience and persistence, but in many hospitals it has been shown that it is quite a possible thing to do.

3. *Operating Rooms.*—Every hospital is provided with an operating room, and in a fair number of hospitals there are separate rooms for clean and septic cases. In a few institutions very up-to-date rooms have been constructed, with tiled floors and walls. In others simpler quarters suffice, with concrete walls, or with wooden walls covered with a heavy enamel paint, and the floors finished with Ningpo varnish. Practically all, however, are perfectly well adapted to their purpose. They can be cleaned easily and completely and are arranged so as to have a good light.

The operating equipment is in most cases fairly sufficient to the needs of the work at present. The problem of sterilizing is less easy than in western hospitals, as in most places neither gas nor steam are available. Oil burners are the common substitute and,

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WARD IN THE SOUTHERN METHODIST EPISCOPAL HOSPITAL, KASHING



WARD AND NURSES AT THE NEW LONDON MISSIONARY SOCIETY HOSPITAL, PEKING

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although less convenient, they are fairly satisfactory. The majority of institutions are provided with modern autoclaves. In some hospitals, even in the smaller cities, a system of steam heating for the operating room and for sterilization has been installed. The absence of running water is often an inconvenience in the operating room, but in many places a simple system has been put in.

4. *Laboratories.*—Practically every hospital has a small room set apart for a laboratory. This is equipped with a microscope, centrifuge, and the usual apparatus for routine clinical examinations. Sometimes much more special apparatus is found. On account of the enormous amount of work entailed by the care of the patients, however, the laboratories are for the most part but little used. Almost every doctor remarked, when opening the laboratory door, "I wish I could get more time to work in here—but it is impossible." In a few places a man who has an especial interest for laboratory or for research work does manage to make time—and the results, frequently published in the China Medical Journal, show how important it is that this type of work should be fostered. In perhaps four or five hospitals in China, outside of the largest cities, the examination of pathological tissues is carried on. In practically all others the doctor has no means of knowing the exact diagnosis of a tumor he may have removed unless he is prepared to pay for its examination or to ask to have it examined as a favor in one of the few pathological laboratories. The latter, one does not feel at liberty to do except in unusual cases, so the result is that one of the most interesting and stimulating sides of his work must be completely neglected. It is quite possible to train Chinese assistants as competent laboratory technicians, but even this training takes more time than the average doctor can give, and often requires a special knowledge that the clinical man does not possess.

5. *Kitchens.*—The kitchen department of a hospital in China is comparatively simple, as everyone eats the same diet—rice, tea, vegetables, and a very little meat. As yet no work of importance has been done on the subject of adapting the Chinese diet to various diseases. Here is an enormous field awaiting the investigator. Perhaps the most common method of conducting the kitchen is to

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have a chief cook, pay him a definite sum per day per capita, and leave the providing to him. He buys the food and hires his assistants, and usually receives about ten cents (Mex.) a day per patient. All but the poorest patients are supposed to pay this "rice money" themselves. The hospital kitchens are similar to those in native houses, with brick stoves, in the top of which are set large pots for the rice and vegetables. One is commonly told when visiting a hospital that "of course it is impossible to keep a Chinese kitchen clean," and for a long time it must be confessed this statement seemed incontrovertible. However, there are exceptions, and in a very few hospitals in which the fires are stoked from the outside, so that much smoke is avoided, in which the cooks are constantly prodded to keep their departments orderly, and in which whitewash is used liberally at short intervals, the result is that the kitchens are as clean and neat as one could possibly wish.

HOSPITAL DISPENSARIES

One of the most important features of the hospital is its dispensary, for it forms the feeder of the hospital proper. Here it is that the patients get their first glimpse of the inside of a foreign hospital. Sometimes a separate building near the gate is available for use as an out-patient department, but more often a few rooms on the ground-floor of the hospital are used. Usually a clinic is held daily. The attendance is in most places very large. A hospital run by a single doctor will often have a daily clinic averaging from fifty to a hundred or more patients. The larger hospitals may have over two hundred daily. The size of the clinic and the understaffing of the hospital give rise to the one great criticism that can be applied to this work. It is necessarily carried on so quickly and the out-patients are passed along so rapidly that careful work is quite impossible. This is more true of medical cases than of surgical cases. The latter are more obvious and the treatment more definitely indicated. Medical cases often require time for definite diagnosis, and time is one of the things that the doctor does not have, so he is forced to take a hasty look, guess, and trust that he is prescribing correctly. It is frequently said of the Chinese that they appreciate

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WARD AT THE CHURCH MISSIONARY SOCIETY HOSPITAL, FOOCHOW

Iron beds with springs or wooden slats covered by a straw matting. Very little bedding is needed in summer



WARD AT THE NEW CANADIAN PRESBYTERIAN HOSPITAL, CHANGTEFU

Patients supply their own clothes and bedding

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western surgery, but that for internal diseases they prefer Chinese medicine. This fact is borne out by hospital statistics, but one reason for it, at least, is readily explained. They have been given the best of western surgery, but they have seen little of first-class western medicine. The Chinese is shrewd enough to distrust a hasty, cursory observation of his case, and he will probably be wise enough to recognize the difference when his internal diseases receive the careful study that is due them. In at least one hospital where a small number of out-patients are seen daily and where time is taken for proper examination, the work of the medical and surgical clinics has been greatly benefited.

The usual custom is for the foreign doctor to see all the patients, or at least all the new ones. The ordinary dressings are done by the Chinese assistants, and the prescriptions are filled by Chinese assistants trained in pharmacy. Minor operations are performed in the dispensary by the doctor after he finishes seeing the patients. The out-patients are usually supposed to pay a few coppers at their first visit and one or two coppers at subsequent visits. An arrangement is sometimes made by which out-patients can see the doctor out of hours, or at special hours, on the payment of a higher fee.

The out-patients arrive at the waiting-room some time before the hour for the beginning of the clinic, and advantage is taken of this fact to give the hospital evangelist an opportunity to preach to them. In some places the evangelist preaches for half an hour before the clinic opens, and in others he continues talking to them in the waiting-room until it closes.

THE HOSPITAL STAFF

1. *Foreign Doctors.*—As in any large group of men, one finds almost every type among the medical missionaries in China. On the whole the standard both of medical and of general efficiency is high, and not a few would have made their mark professionally anywhere in the world. The day of the half-trained medical missionary is rapidly drawing to a close. The fact that even now a certain number of insufficiently equipped men find their way to the field seems to be chiefly due to the methods of selection adopted by

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some of the mission boards. In the appointment of medical missionaries they should be guided by the advice of medical men who are in a position to pass properly on a candidate's qualifications. In some missions this is apparently not customary, and the result is that men who have not had the requisite professional training, or whose personality is not adapted to the work, are sent to China. Some of these return home after a short trial, and others remain to carry on comparatively ineffective work. In either case there is an economic loss from every point of view. As a matter of fact the nature of medical work in China is such that only men of the strongest personalities and of the highest professional training are of value. The man who goes to China needs a much broader training than his brother who remains at home, for he is called to face every conceivable kind of medical work, and usually he must meet it without consultation. Two years of hospital work, after finishing the medical course, should be the minimum requirement and it is of great advantage to have some additional special training. It is unwise policy to select a missionary doctor on the ground that he is a good evangelist. Almost every strong medical man in the field knows that his influence in helping the work of Christianity depends primarily on his effectiveness in carrying out his own job.

The missionary doctor is invariably overworked. This is not merely due to the pressure of the strictly professional demands, which are heavy enough to exhaust the energy of any one person, but to the innumerable other duties that fall to his lot. In addition to the care of his patients and to operating, the doctor has the general management of the hospital involving a considerable amount of financial business. Besides this he usually has teaching, for he must at least train his own assistants. Then he must always be a somewhat experienced builder and architect, for whatever building is done must be superintended by him personally. To this is added evangelistic work if there is any time left. Frequently there is not, however, and the doctor leaves this branch to the hospital evangelist. On top of all these duties comes the fact that the doctor seems to be regarded as the "handy-man-about-the-house" of the mission, and he is consulted with, or asked to attend to a mass of other matters which have no relation to medicine, but which require the wise,

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LEPER HOSPITAL, SIAOKAN
Chapel and wards. This shows the possibility of orderliness in China



LEPER HOSPITAL, SIAOKAN
Entrance

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common-sense attention of someone who can be depended on as being on the spot continuously. It is a remarkable fact that in spite of all, many of the men make time for reading and study, and not a few are in touch with the latest advances in the fields in which they are interested. Such are some of the duties that are put on the missionary doctor, and in connection with this one is brought face to face with the most immediate problem which confronts the mission hospitals. It is practically true that every mission hospital is terribly understaffed.[1] A large proportion of hospitals have but one doctor. Those that have two doctors have usually increased their work so that they are little better off. Outside of the largest cities there are scarcely any hospitals with more than two men. One cannot but recognize with admiration the remarkable manner in which many men are able to carry on a large hospital work, with perhaps a hundred in-patients and a large daily dispensary, single handed. They are men of forceful personality, of marked executive ability, able and eager to cope with any situation. But they are overdriven, and their work is necessarily productive of less good results than it would be if they had proper assistance. Moreover even the strongest must stop sometimes, and this means that the hospital must close for vacation, usually during the summer, when the need of it is great.

The problem of properly staffing the mission hospitals is a difficult one. One is sometimes told that the trouble is lack of money, and sometimes that it is lack of men. Probably it is both. Some of the American missions have the salary for a doctor, but are unable to find a suitable man, while others cannot raise the money. There is some evidence to show that it may be easier to find men in England than in America, but the new Insurance Act has given so many opportunities for medical men in England that a smaller number are

[1] Of fifty-five mission hospitals investigated only eleven had more than two foreign doctors. Nine of these are teaching hospitals in Peking, Canton, Foochow, Nanking, and Shanghai. One is connected with the Women's Medical College in Soochow and one is at Hangchow where an enormous work is carried on. Of the remaining forty-four hospitals, twenty-five have one foreign doctor, seventeen have two, and two have temporarily no foreign doctor. Twenty of the hospitals have no foreign nurse, and only seven (including one Catholic Hospital) have more than one nurse.

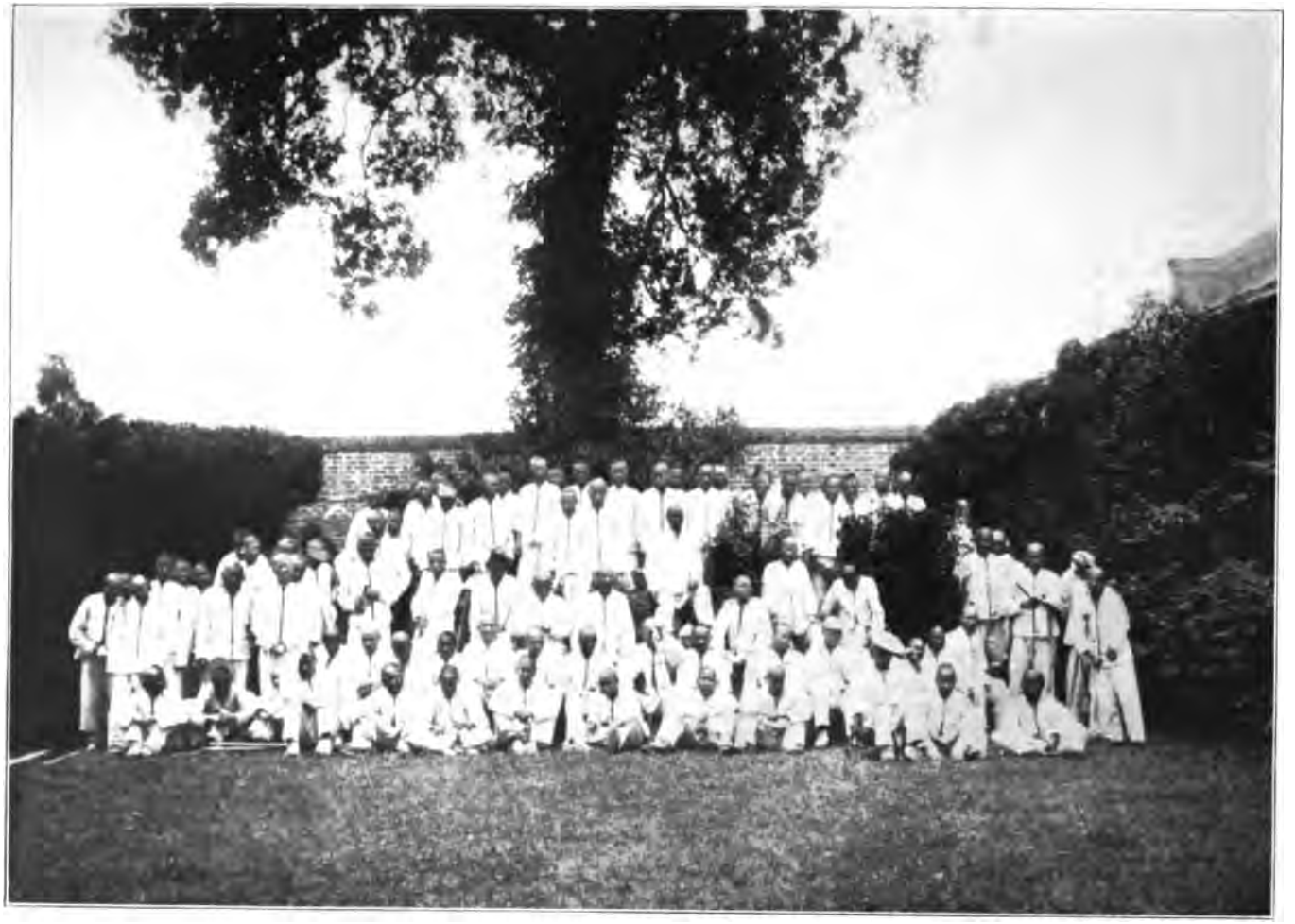
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looking to the foreign field. It is possible that some increase in salary might bring more men. While the missionary doctor is not primarily interested in the financial aspect of his career, the salaries are for the most part very low now, and regard for the care of his wife and family might well make one hesitate before taking up the work.[1] One means which might help would be the bringing out of men for short terms of two or three years. This would give the man a chance to see China and to find out on the spot whether he was interested in it and whether he wanted to stay in mission work. Some of the men in the field would welcome such assistance, but others feel very doubtful about it. They think that unless a man comes prepared to give his life to China with the "missionary spirit," he might be unsympathetic with the work and would hinder rather than help. It also takes a good deal of the "missionary spirit" to make a man stand by his work in spite of all the set-backs, disappointments, and difficulties that he is sure to be brought to face. It must be recognized that, in spite of being overworked, many men who have built up their own clinic rather dread the coming of a new man who may bring new ideas and interfere with the running of things. And unfortunately certain experiences tend to show that great care must be exercised in trying to give help of this sort. The problem of understaffing can probably never be solved by the provision of foreign doctors, even if it were a wholly wise policy. The most promising and obvious solution lies in the training of high grade Chinese doctors.

2. *Chinese Doctors and Assistants.*—There are at present very few Chinese medical men who have been trained in Europe or America, and only a small proportion of these are connected with mission hospitals. A larger number have studied in Japan, but most of them attended second-rate schools, and they have either gone into private practice or government service. The assistants in the mission hospitals have almost all been trained by the missionaries. A few of them are graduates of the newer union schools but the majority are the product of the hospitals or hospital schools.

[1] The average salaries for married men range from $1,000 to $2,000 (gold) in addition to quarters. This is a living wage, but it means the most rigid economy. In some missions the salaries are even lower.

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LEPER HOSPITAL, SIAOKAN
A group of patients

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Every missionary needed, of course, assistants and the only way to get them was to train them himself. The usual custom has been to take a few boys into the hospital and train them as dressers. After some years they often become useful assistants, doing most of the nursing, dressings, and even a certain amount of minor surgery. The more experienced are skilful men, and invaluable as long as they are under supervision. Some of the missionaries have done this training on a larger scale, giving more or less systematic courses of instruction on the subjects usually contained in the medical curriculum, while the students are simultaneously working as clinical assistants in the hospital. On this basis there have developed several miniature medical schools with one, two or more rarely three, instructors. The usual requirements for admission are an ability to read and write Chinese, with perhaps some knowledge of arithmetic. At the end of five or six years a diploma is given. Those who finish the course have had much practical experience on top of a rather flimsy preparatory training. They are often very useful men as assistants and some of them are fitted to do work of a certain grade independently. Thus there is much minor surgery that they can handle successfully—as well and perhaps better than an experienced orderly in an American hospital. The great difficulty is that there is no means of controlling the type of work they will do, and that they are almost sure to deteriorate as soon as they leave the hospital. Some of the graduates continue in the service of the hospitals at which they have studied, or in other mission hospitals, in part for the living they get out of it, and in part on account of their interest in missionary work. Exceptional men have made good records in temporary charge of mission hospitals. The mission hospitals, however, are able to pay only very moderate salaries[1] so that a large proportion of the men seek other employment. Indeed with the comparatively great financial rewards which may be looked for in private practice, in railway or in government work, it is frequently very difficult for the hospitals to keep sufficient assistants

[1] At Swatow $12 to $15 (Mex.), at Paotingfu $28 to $34 (Mex.), one Shanghai hospital, $40 (Mex.) a month. Another Shanghai hospital pays two men $50 and $100 (Mex.). The latter is unusually high but the man is said to be exceptional. The railways pay from $150 to $200 (Mex.) per month.

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to carry on the work properly. There are so few Chinese medical men at the present time, and so many positions waiting for them, that men with the most meager training may obtain posts of considerable responsibility to which large salaries are attached. The graduates of these hospital schools have not been trained to a high enough professional standard to make them realize the advantages to be gained in the end by constant contact with a foreign hospital.

This system of training hospital assistants has been a necessary step in a country where there is no other means of obtaining help. It is useful in so far as it fills the immediate needs of the hospital doctors. Its value in providing independent practitioners throughout the country is however very questionable. In India the training of low grade men has been tried, but it has recently been discontinued and no new candidates without the degree of M.B. will be admitted to practice. Moreover, the training of assistants puts a heavy burden on the foreign doctors—a burden of which the majority are anxious to be relieved. The establishment of high grade medical schools in China should soon make unnecessary the teaching of low grade men. The hospitals and the schools will work hand-in-hand—the hospitals supplementing the schools by giving practical interne experience to men who have already had sound preliminary teaching. Many of these graduates should subsequently become permanent paid assistants, at good salaries, at the mission hospitals. Those who are qualified may also be put in charge of branch hospitals. Many who do not desire to do hospital work exclusively may go into private practice, and continue to devote a part of their time to a hospital in return for a fair compensation. As many as possible of the graduates of the medical schools must certainly be kept in more or less intimate contact with hospitals under foreign control. This is a cardinal principle, for experience has shown not only in China but in Japan, and in India, and in the Philippines that the western influence and control are essential to prevent deterioration of professional standards.

3. *Nurses.*—No one can visit hospitals in China without coming away profoundly impressed with the need for more foreign nurses. The influence of the nurse shows itself everywhere in the appear-

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OPERATING-ROOM AT THE NEW LONDON MISSIONARY SOCIETY HOSPITAL, PEKING

Dr. Thacker operating, assisted by fifth-year students

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ance and efficiency of the hospital, and, by relieving the doctor of innumerable responsibilities she promotes directly his own immediate work. Moreover in much of the educational work of the hospital —in the teaching of cleanliness and hygiene—the nurse is a more important factor than the doctor, for she is directly responsible for the standards and example set before the patients. In the care of women patients and especially in obstetrical work the presence of a nurse is most helpful, and with her assistance a male physician can do almost as much as a woman physician. Perhaps the most important function of the nurse, next to general supervision of the wards, is the training of pupils. In several hospitals training schools for both male and female nurses have been established along lines analogous to those in the best American and European hospitals. In others nurses are being given more elementary training. It is sometimes said that a woman cannot administer the male wards or teach the male nurses, but the experience of various institutions proves the fallacy of this statement.

The training of nurses along western lines is a comparatively new movement in China, but it has already acquired considerable impetus in certain parts, and more especially in central China.[1]

In southern China there are few nursing schools, and it is said to be hard to get proper persons to take up the profession. The hospitals in the Yangtze Valley are better supplied with foreign nurses than are those in other regions, except perhaps Fukien. The cause of nursing has been greatly aided by the formation of the Nurses' Association of China, which has established regulations governing the course of training and study which must be complied with by schools desiring to be recognized by the Association. It holds annual examinations for such graduates of these training schools as wish to obtain the Association diploma. A prize, given

[1] Thus in the Men's Hospital of the American Church Mission at Wuchang with two foreign nurses, there are sixteen male students. At the American Church Mission Hospital at Anking with two foreign nurses, there are twelve male and nine female pupils. In the Friends' Hospital at Nanking there are fourteen pupil nurses. At Kiukiang in the Methodist Episcopal Hospital there are twenty young women in training. There are already eighty graduates of this school. In the Methodist Episcopal Hospital for Women at Nanchang there are twenty pupil nurses.

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annually to the nurse passing the highest examination, is a further stimulus to good work. On account of social conditions in China it is necessary at present to have male nurses for male patients. The time will come, however, when women can do all the nursing. In some places it will come very soon, but the general tendency, and no doubt the wisest, is not to hurry too much so radical a change in custom. The problem is not serious, for it is comparatively easy to get fairly competent young men to enter the training schools, and they seem to turn out efficient nurses. The work in training girls has been even more satisfactory, and those engaged in it are encouraged by their experience to believe that Chinese women may be made into excellent nurses. Emerging suddenly from generations of ignorance they are naturally lacking in self-confidence and in reliability, but the course of training produces remarkable results. As yet the requirements for admission are necessarily low. In some cases only a knowledge of how to read Chinese and how to write a limited number of Chinese characters is demanded, but in others graduation from an intermediate school or other equivalent education is required. Many of the girls, however, are much better educated and there is a general tendency to raise the standards as fast as possible. The higher the standard is raised the better will be the class of girls entering the training schools and the sooner will the nursing profession cease to be regarded as "coolie labor." Already one hears not infrequently of girls of the better classes taking up the work. The course in the better schools usually lasts three years and is essentially the same as in the western training schools. Translations of English textbooks are used. Obstetrics forms an important part of the nurse's training, as the native midwives are so ignorant as to be a real source of danger to the community. The Nurses' Association requires for their special diploma in midwifery one year's training in addition to the three years of training for the nurse's diploma, and the passing of written, oral, and practical examinations. There are a number of graduates of those nursing schools doing private work and their reputation, even among foreigners, is excellent. Many of the graduates, of course, marry immediately, but their training must be

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STERILIZING-ROOM AT THE SOUTHERN METHODIST EPISCOPAL HOSPITAL, KASHING

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an important influence in their own homes and in the homes of others. In Changsha there is even a Chinese district nurse who is demonstrating the possibility of improving domestic conditions along a line which is new in China, and one believed by many to be as yet impossible.

The need of more graduate nurses in China is of course imperative. At present there are 140 foreign nurses in the country and these are distributed in about 100 hospitals. Thus less than *one hospital in two* has a graduate nurse at all and few have more than one. It does not seem easy to get nurses, but in some instances the missions are hampered by lack of funds. It is possible that the situation might be helped if nurses could come out to the hospitals as nurses and not necessarily as members of the missions. While some doctors would oppose this arrangement others would certainly welcome it, and be glad of any help. Even after getting nurses out to China the difficulties are not over. For the first two years a considerable part of their time must be taken by language-study—and at the end of that time a good proportion get married. With proper funds it may be possible to supply enough foreign nurses to serve as teachers in the leading training schools, but the other hospitals will have to depend for the most part on the Chinese graduates of these schools. The situation will be helped if it is possible to provide even a limited number of Chinese nurses who have had post-graduate nursing in America and are able to bring back the best that the profession has to offer and to undertake the training of others.

In the hospitals without foreign nurses the care of the patients is much less adequate. In several women's hospitals the woman physician in charge has undertaken the training of nurses and so gets a class of probationers who can do the work of the institution. In one at least there is an excellent training school. In some of the men's hospitals there are similar classes for male nurses who receive some instruction from the doctor. In other hospitals the nursing for men is done in part by half-trained coolies, and for women by "amahs," while the bulk of the care must be taken by the patients' friends and relations.

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THE PATIENTS

In the early days of medical missionary work in China there was a feeling of distrust and often of hostility on the part of the people toward the newcomers. Stories were spread abroad of patients being cut up, of eyes being taken out to be made into medicine, and of other similar atrocities, all of which tended to keep people from coming to the hospital. Even after the work became fairly well established the doctors were not safe in performing any operation which might end fatally, and to have a patient die in the hospital was a serious matter. And now, when medical work is first started in a new city, the conservatism and opposition of the populace must be overcome. But in the centers where hospitals have been carried on for several years, the patient, wise, and tactful methods of the doctors have been rewarded. The confidence of a large part of the people has been given to them; patients flock to them in large numbers and their reputations have spread through miles and miles of country round. There are now scarcely any hospitals that do not have all the patients they can attend to, and the majority of hospitals have many more than they can care for properly. Patients are no longer refused because they are likely to die, and serious operations are performed in which the patient and his family realize that it is a matter of life or death.

The patients in the mission hospitals come from all classes of society. The great majority belong, of course, to the poorer ranks, but the more prosperous people also come in considerable numbers. Thus there is usually quite a demand for private rooms. Those doctors who have made a point of cultivating an intimate relationship with the upper classes of Chinese often number members of the official class among their hospital patients. Many more of the upper classes are apt to be seen by the physician as patients in their own homes. The extent to which practice in the patients' homes has been cultivated varies with the personal inclination of the doctor. Some men desire this outside practice as it brings them in contact with influential people and forms a considerable source of income for the hospital. Others discourage it as it takes them away from their hospital work for so long a time. Moreover, prac-

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DR. MARY STONE AND HER TRAINING-SCHOOL FOR NURSES, KIUKIANG



MEDICAL STAFF, WITH MALE AND FEMALE NURSES, KASHING

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tice in the Chinese homes is apt to be very unsatisfactory. There is no assurance that one's directions will be carried out, and it quite often happens that one or two Chinese practitioners of the old school may be coming to the case at the same time. The Chinese custom is to keep calling in new doctors until one of them gives a medicine which is followed by an amelioration of symptoms. The last man is then credited with the cure, regardless of what the natural history of the disease may be.

The practice of the mission hospital is by no means limited to the city in which it stands. It draws on a large country round and it is not unusual to have patients brought from a distance of twenty-five or even fifty miles. Boats, carts, donkeys, wheelbarrows, and stretchers of the most primitive kinds are used for transportation purposes. Many of the patients are not seriously sick and if they had good homes near by they could be treated as out-patients, but coming so far they must be taken into the hospital. Similarly other patients who live near by are taken in as their home conditions are so miserable. Thus it is that one sees a much larger proportion of ambulatory cases in the hospitals in China than in those of the west.

While the people of China are becoming more and more friendly to western medicine it must not be supposed that the native practitioners are by any means deserted. In general people regard western surgery highly, but they have less respect for western medicine. In one of the Chinese hospitals in Peking the patients are given their choice of going to a practitioner of native or of western medicine. A large number choose the native medicine—and in truth when one compares the wise, dignified, scholarly-appearing native doctors with the young exponents of western medicine, one has much sympathy with their opinion. At the Tung Hua Hospital in Hongkong a similar choice is given, but all the patients are seen first by a doctor of western medicine and urged to come under his care. Nevertheless 60 per cent decide to go to the native practitioners. Almost all the foreign physicians have been interested primarily in surgery, and lack of time has not allowed them to devote the proper attention to their medical cases, but in those clinics in which internal medicine has been developed independently the number of medical cases is not far behind that of surgical cases.

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The types of diseases met with in the hospitals of China vary greatly in the different parts. Tuberculosis and syphilis are everywhere rampant. The amount of tuberculosis of the bones is especially striking. In North China the general run of cases in the wards is not very different from what one finds in a similar climate in the west. In North and North Central China Kala Azar is fairly common. In Central China the diseases caused by intestinal parasites are the most characteristic cases, and in summer the dysenteries and cholera. Along the coast, in Fukien Province, there is an interesting focus of filarial infection. From Central China southward beri-beri is common. Approaching South China, the amount of strictly tropical disease increases—for example, beri-beri is common; bubonic plague appears regularly in the early summer; cholera and dysenteries are very frequent. In the neighborhood of Canton there is an immense amount of stone of the bladder. In 1913 seventy-one operations for lithotomy were performed at the Canton Hospital. The cause of the remarkable occurrence of stone of the bladder in this district has not yet been determined.

The amount of obstetrical work done in the hospitals is increasing rapidly. The Chinese women have always been reluctant to have a male physician attend them when they are confined, so for a long time obstetrical work was practically in the hands of the few women physicians, and even at present they control most of the largest obstetrical clinics. There are, however, many men who are getting a considerable and an annually increasing number of cases. Frequently the women do not want to come to the hospital for confinement so they are cared for in their own homes. In some of the hospitals much of the obstetrics is handled by the more experienced of the Chinese nurses. They are able to take complete charge of the normal cases, and only summon the doctor when abnormal conditions arise. Foreign nurses have been of great assistance in the obstetrical work of hospitals which are controlled by male physicians. The experience of one women's hospital in Central China with regard to obstetrics is of considerable interest. This hospital has over two hundred cases a year, coming from both rich and poor families. The great majority are handled in the patients' homes by

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OUT-PATIENTS WAITING IN THE COURT AT THE GOVERNMENT HOSPITAL, PEKING

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the nurses. Usually two nurses, one older and experienced, and one younger pupil go together. If the case proves to be abnormal the doctor is usually sent for, but one of the Chinese graduate nurses is able to put on forceps. The obstetrical fee is from $3 to $6 (Mex.). In the summer vacation the work is superintended by a male physician, but there is no noticeable decrease in the number of patients. He is an older man who is well known in the community and is regarded with great confidence. This merely serves to illustrate the type of work which can be developed, and the enormous humanitarian importance of it can only be appreciated by one who knows of the immense amount of unnecessary suffering and death which mark the trail of the native midwife.

There is as yet a comparatively small amount of abdominal surgery in China. Appendicitis is remarkably unusual, and acute and chronic salpingitis are not common. It seems probable, however, that when more careful medical examinations are made the number of cases in need of gastric and intestinal surgery will be found to be considerable. It might almost be said that as yet the field of abdominal surgery has hardly been entered upon. Everyone has been busy with more simple and more obvious work.

FINANCES

It is a rather remarkable fact that a large proportion of the mission hospitals are, with the exception of the doctor's salary, self-supporting or nearly self-supporting. The missions usually contribute the salary of the foreign doctor, and of foreign nurses, if there are any. Beyond this they sometimes contribute a small sum—a few hundred dollars—to the support of the hospitals. A few hospitals receive larger grants from their Home Boards, but probably more receive nothing beyond the doctors' and nurses' salaries. All other support must come from the field, and it is derived from the earnings of the hospital and from gifts.

The majority of the patients go into the open wards and pay from ten to fifteen cents a day (Mex.) which just about covers their "rice." Many patients, of course, cannot afford even this and are accepted as charity patients. A considerable number of patients go

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into second and first class rooms and pay from fifty cents to about $2.00 (Mex.) a day. These patients are a true source of income to the hospital. Occasionally there are special fees for operations or for maternity cases. The fees received in the out-patient department make some additional income. Patients usually pay about three to ten cents (Mex.) at the first visit and from one to five coppers at subsequent visits. They are also supposed to pay for the bottle for their medicine, but there are many who cannot pay the regular fee, and must be given their medicine. Many hospitals have an arrangement by which the better class of patients are put in a separate waiting room and see the doctor first, paying twenty cents for the privilege. It is also customary to charge from twenty cents to $1.00 (Mex.) for consulting the doctor out of regular hours. At one hospital the senior physician has a special out-patient clinic at which patients pay $1.00 a visit. A large source of income is frequently out-patient practice in the patients' homes. The advantages and disadvantages of this have been mentioned. For outside calls the doctor gets from $2.00 to $5.00 (Mex.) A certain number of hospitals receive a considerable income from contract practice for the foreign firms, the customs service and the post office service. Small sums may be realized for the care of the members of other missions.

Among the donations to the hospitals may be mentioned those obtained from home by personal solicitation of the doctor or his friends (usually for special purposes), those raised among the foreign community, especially in the open ports, and those coming from the Chinese. The latter are often a very important item. At one place $3,700.00 (Mex.) have been donated since the hospital was opened about ten years ago. The gifts vary greatly in different places and depend in large part on how long the work has been established and on the personality of the doctor. Some men become close friends with the local gentry and officials, and are able to get very considerable support from them. In many instances they have contributed liberally to the construction of new buildings, or to some similar definite object. It is natural that other hospitals situated in less prosperous communities can rely but little on local contributions.

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A PATIENT BEING CARRIED IN FROM THE COUNTRY TO DR. STONE'S HOSPITAL, KIUKIANG



AT THE GATE OF THE CHINA INLAND MISSION HOSPITAL, KAIFENG

The patients are brought in on wheelbarrows

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The following is the financial statement of one hospital in South China conducted by a man of unusual ability, whose only foreign assistant is his wife, who has studied nursing. The hospital had in 1913, 1,232 in-patients, 2,833 out-patients; 187 patients were seen in their homes, and 140 on itineration. Total operations, 547, opium smokers treated, 167.

Income		Expenditures	
Chinese fees and donations.....	£350	Chinese assistant, salary.....	£ 40
Fees from schools (mission)....	10	Wages.....	65
Foreign donations, including 9 supported beds — £3 each...	80	Drugs and dressings.....	160
		Instruments and upkeep.....	30
Sales, bottles, soap, etc.....	60	Buildings and repairs.....	60
Income from kitchen account, sale of pigs, fruit, excreta, etc.	50	Fire and light.....	60
		Poor.....	20
		Customs and carriage.....	60
		Sundries, stationery, etc.....	55
	£550		£550

The salary of the foreign doctor, £320, is not included. It is the only financial contribution from the Mission.

NON-MISSIONARY HOSPITALS UNDER FOREIGN CONTROL

The hospitals under the control of foreign non-missionary bodies are few in number. Some of them (the Do-Jin Hospital in Peking and the Hôpital Doumer of the French Government in Canton) are for the Chinese, but the more important like the Shanghai General Hospital and the International Hospital at Hankow are for the exclusive use of the foreign community. As yet, however, the medical care of foreigners in China is very inadequately provided for. This is true in cities like Peking and Tientsin, with large foreign communities, but is more true when considering the great body of foreigners, mostly missionaries, scattered throughout the country. There are few places for them to resort to when they are sick, and the majority of them return to their homes for diagnosis and treatment that should properly be obtainable in China. With this in view a small hospital has been constructed at Nanking,

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which has as its chief aim the care of sick missionaries, but which also takes in any other foreigners. It would be much better, however, to have a foreign ward as a part of a large thoroughly equipped modern hospital. Thus in the construction of any new hospitals in the large centers the care of foreigners should be borne in mind, and adequate provision should be made for them to obtain the best that modern medicine can provide at a limited expense.

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IV

STANDARDS OF MEDICAL EDUCATION UNDER MISSIONARY AUSPICES. TEACHING IN CHINESE OR IN ENGLISH

There are two policies propounded for the training of Chinese as medical men.

One of these looks first of all at the pressing need, and seeks to meet that need at the earliest moment and to the largest practicable extent. This involves taking students who are not educated very far and giving them a hasty and more or less superficial training. It involves at the present teaching in Chinese and depending on books translated into that language from English or German sources.

This policy is not justified by its fruits. It does not fill the need for trained physicians because it does not really train physicians. The graduates are useful as hospital assistants, but are not fitted for the responsibility of medical practitioners.

The other policy contemplates preparing a smaller number of graduates, but doing work only of a high grade. The use of English is imperative for instruction of this character, and to enable students to have access to medical literature. There must be in order to carry out this plan an adequate preliminary training. This is the policy favored by the majority of the most enlightened and progressive medical men and teachers in the missionary schools, by similar men in Shanghai, Canton, and Changsha, and by all the Chinese medical men of high standing with whom we have talked. It is considered practicable, because now there are enough middle schools and missionary high schools for preparatory work, and because more Chinese young men of good qualities will be drawn by work of a high scientific value. Doubtless it will be necessary to provide in a strong medical school two years of pre-medical education.

The General Secretary of the Educational Association of China has prepared a list of Chinese Government Middle Schools, which is as nearly accurate as practicable at the present time, in which

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four hundred thirty-eight middle schools are reported. In all these English and modern sciences are taught.

While the efficiency of the government schools is not yet uniformly of a high order, still it is likely that they will gradually improve, and there should be enough of their graduates, carefully selected, to enter the pre-medical work of the medical schools. By the end of the two pre-medical years the students should have enough science and English to do work of a high order. The missionary high schools also are capable of furnishing a considerable number of properly prepared students.

It will be seen that a vital question connected with the subject of standards for medical education in China is that of the language which shall be the medium of instruction.

On the one side it is held that teaching should be wholly in Chinese and that there should be conducted a very active industry in the translation of the best works of modern medical science into the Chinese language for the use of students and physicians. The adherents of this belief maintain: (1) that the use of the vernacular enables the Chinese student to take up a medical course without the previous great labor of acquiring a foreign tongue; (2) that it is better to expect the teacher to spend three years in learning Chinese which he can then use for the rest of his teaching life than to require succeeding generations of Chinese students to spend each of them from four to six years acquiring English, for instance, before being able to enter medical work; (3) that after a student learns his medical science in a foreign language he becomes so far diverted from the practical use of Chinese that he finds difficulty in the application of his western science and especial difficulty in making his examination of patients; (4) that they expect and wish that the medical profession in China should become as quickly as possible a real Chinese profession, and that it should not be made up of men who have been alienated from their own people and rendered deficient in Chinese culture through education in a foreign language; (5) that young men who know sufficient English to study medicine in that language command at once such high salaries in business and other pursuits that few of them will take the additional time necessary to give themselves a thorough medical education.

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Further it is held that the need for native practitioners is so great, so immediate, and so pressing on all sides that everything should be done to facilitate the teaching of students as rapidly as possible, so that there can be a considerable body of practitioners at the earliest possible date provided with such knowledge as it may be practicable to give them even in a limited time.

These views are strenuously held, e.g., by a majority of the Faculty of the Union Medical College in Peking (the last vote of the Faculty was eight in favor of the use of Chinese and seven in favor of the use of English) and by the Faculties of the Union Medical Schools at Tsinanfu and at Hankow.

The other view is that medical teaching should be wholly or mainly in a western language and that that should presumably be English. In favor of this view it is held: (1) that it is entirely possible for students in the middle schools to acquire sufficient English to use in medical work; (2) that there is no great body of medical publications in China and for a long time to come there is likely to be nothing in Chinese except a few translations which by the nature of the case will be more or less behind the times, while by the use of English students will have the whole wide field of the new medical science open to them; (3) that the use of English greatly widens the field for the choice of medical teachers by preventing the very onerous burden of learning Chinese being placed on every teacher in a medical school; that it would probably be impossible to find any considerable number of well-qualified professors who would be willing to devote two or three years to a study of the Chinese language, and thereafter to spend a large part of the time for preparing lectures in the laborious task of putting them into good Chinese; (4) that a graduate in medicine should no longer be debarred from keeping up with the advance of medical science because there is not open to him the great field of medical literature both in books and scientific periodicals in which the English language is rich. It is not likely for a long time to come that the Chinese language will contain any such body of literature.

This view of the case is held very strongly, e.g., by the minority of the Faculty of the Union Medical College at Peking, by the Faculty of the proposed Yale Medical School at Changsha, by the

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St. John's and Harvard schools in Shanghai, by the Faculty of the Canton Christian College for the proposed school at Canton, and by the Faculty of the Union Medical College at Foochow. It may be added that a similar view is taken by the Germans who are conducting medical work at Tsingtau and Shanghai with the substitution of German for English, naturally by the English in their medical school in connection with Hongkong University, and even by Chinese in the Peiyang Medical College at Tientsin, a government institution. Practically all the western trained Chinese physicians with whom we have talked share this view, as do many influential Chinese educators. They say that neither the terminology of the missionaries nor that of the Japanese is satisfactory, and that on the whole the English textbooks are easier for the students to understand than the Chinese translations. The best students ask for instruction in English.

In this connection it may be interesting to note the Japanese experience in dealing with the same problem. All Japanese students in the University medical schools have had five years of English in the secondary course and three years of German in their college course. Those who enter the second grade medical schools directly from the middle schools have special instruction in the German language for the four years of their medical course, side by side with their medical studies. Medical school teaching is mainly in Japanese, but students and professors freely read the other languages and have textbooks in all three. Of course there now exists a considerable body of Japanese scientific literature both in books and in periodicals. Japanese medical instruction began in German and even now a great deal of German is used by the Japanese professors in lecturing to their students. In the Kyoto and Tokyo University Hospitals and in the prefectural hospital at Kyoto records of cases are kept largely in German.

The first view, that of instruction exclusively in Chinese, is held by those who are eager to meet the present needs of China in the shortest possible time and who are willing to make the standards of medical training quite low in order to secure a considerable number of medical graduates. The second is the view of those who believe that the crying need of China is not so much for a large number of

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ill-trained men, but for a number, presumably small at first, of thoroughly trained medical men who will be able to man the medical faculties, hospitals, and institutes of investigation, to aid the government in the work of sanitation, and ultimately to provide efficient practitioners throughout the land. It is the belief of those who favor teaching in a foreign language that this process will take a longer time than the other, but in the long run will secure the largest and best results.

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V

DISSECTION AND AUTOPSIES

Ancestor worship, one of the important outgrowths of Confucianism, requires of its adherents a profound respect for the dead. A desecration of the human body, such as is supposed to be caused by dissection or post-mortem examination, has been from time immemorial wholly impossible in China. For this reason the physicians of China have remained in absolute ignorance of anatomy and of physiology, and the science of medicine in China has scarcely developed since its conception. The generally accepted method of studying anatomy is to memorize the books which have been inherited from the past—books in which the descriptions and the plates demonstrate that neither the author nor the author's teachers ever made an anatomical investigation which went more than skin-deep. It is said that when the Japanese, who had adopted Chinese medicine, first saw a Dutch anatomical book, they declared that the people in the West were made differently from those in the East. But they were open to conviction, and in spite of religious beliefs akin to those in China, dissection made its way into Japan, the first known dissection being performed there on March 4, 1771.

There are few factors which have been so potent in obstructing the advance of western medicine in China as has been the impossibility of making anatomical studies. Dissection is essential for even the elementary work of the medical student, while autopsies are necessary to teach the nature of disease processes, and they are of fundamental importance in many types of research. Certain peculiar diseases in China can never be thoroughly understood until many post-mortem examinations have been made. Up to the present time the number of dissections and autopsies that have been done in China is practically negligible. One hears very rarely of a foreign doctor who has performed an autopsy, or more likely a partial autopsy. These have always been done with the utmost secrecy, for if news of them got abroad, the public might become inflamed, and the doctor and his hospital be in grave danger. At

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one government school we were told that dissections had been carried on—that moribund patients were brought to the hospital from the jail, and that after death their bodies were dissected. Outside inquiry revealed the fact that this has happened, but it is doubtful if it has happened frequently. At another school it was said that bodies had been dissected, but the number is very questionable. At Shanghai a limited number of bodies have been obtained for dissection at the Harvard Medical School, and about six autopsies have been performed in the school. Conditions are of course very favorable in Shanghai, where there is a large foreign concession and a foreign health officer. In Hongkong, in British territory, the situation is quite different. The medical school can obtain all the material it needs for dissection, and about two thousand autopsies are performed annually by order of the health authorities. Some of the students of the Kwong Hua Medical School in Canton come to Hongkong in the summer for a special course in anatomy. On November 13, 1913, the dissection of the body of a criminal was performed at the Kiangsu Provincial Medical School in Soochow. Permission was given by the Governor and the occasion was one of great formality. Some sixty-five persons were invited to attend and those present included the representative of the Governor, judges of the higher courts, many other officials, and both Chinese and foreign doctors. The day was considered such a memorable one that the guests and the subject were photographed, and a descriptive pamphlet was published in which it was stated that this was the first dissection in China for four thousand years.

Human dissection thus having been impossible in China, anatomy has necessarily been taught with the aid of plates, models, bones, occasional material from operations, and in a few places a limited amount of animal dissection. As pathology is taught it consists almost wholly of the study of microscopic sections brought from abroad. Surgical operations provide a small amount of material for both gross and microscopic study.

Late in 1913 the outlook for the teaching of medicine in China was entirely changed by the publication of an official edict[1] which

[1] A translation will be found in Appendix B 7.

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gave permission for the dissection in the medical schools of the unclaimed bodies in the jails. It is now only necessary for the medical school to apply to the local officials for permission, and for the officials to issue the requisite order. It is fair to say, however, that in China these steps are much less simple than they appear and it will probably be a long time before public opposition is entirely overcome. However, not many weeks after the issuing of the edict the Union Medical College in Peking had made its application and had in due course received three bodies. The edict came suddenly and no arrangements had been prepared for the preservation of bodies, so that it was necessary for a time to refuse other bodies that were offered. But that is of minor importance. The chief thing is that the custom of "four thousand years" has been broken, and once broken, there is no reason to suppose that it will ever again block the path of scientific medicine in Peking. Away from the capital, the edict has not yet produced any definite results. At Hankow, Nanking, and Foochow no bodies had been applied for. This was, no doubt, partly due to the fact that they had no proper place of storage, and that the summer vacation was just beginning. On the other hand it is striking that few of the schools in central and southern China seemed to be making any special effort to prepare for dissection. They had not taken the question up with the officials, and they were apparently not hurrying to make even temporary provision for the reception of material.

The question of autopsies has practically not been touched. One rarely finds a foreign physician who has ever even asked to do an autopsy. We heard, however, of one physician who, a short time after the edict was issued, requested permission to make a post-mortem examination of a child who died in his hospital. The parents knew him and gave permission without difficulty.

For some reason this edict, which will revolutionize the teaching of medicine in China, appears to have provoked very little stir among the teachers. The general attitude seems to be that "it may be all right in Peking, but we have got to go very slowly here." How far this is actually the case it is impossible for one not intimately connected with local conditions to know, but it would certainly seem

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that all who are interested—both Chinese and foreigners, physicians and laymen—should take the question up while it is fresh. "The Republic" in China signifies much more than a new form of government. It means too the sweeping aside of many ancient social customs, and its advent marks the brightest time for striking at the roots of superstition.

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VI

THE ATTITUDE OF THE CHINESE TOWARD MODERN MEDICINE

The members of the Commission met Chinese officials in every place visited, including officers of the central government and officials of the provinces and cities. In no one case was there found any expression of opposition to the introduction of western medical teaching and practice into China. In nearly every case there was found on the other hand warm approval of the introduction of such work, and in not a few cases willingness was expressed to aid as far as possible if such work were undertaken on an adequate scale. The members of the Commission are convinced that the introduction of medical teaching on a large scale and on a high standard would receive the approval of the government and its moral support. Letters received by the Chairman of the Commission from the Minister of Education in Peking and from the Governor of Hunan Province at Changsha are especially interesting in this connection. (See Appendix B, 1 and 2.)

The old prejudice against western medical men and their methods still remains undoubtedly in many parts of China. At the same time this prejudice is breaking down everywhere. The fact that the missionary hospitals are taxed beyond their capacity shows better than words the actual state of things in this regard. The willing support given missionary hospitals by native Chinese, many of whom are not Christians, is also an evidence. The generous reception of the members of the Commission by Chinese citizens in many parts of the Republic and the interest expressed in the work are also convincing. It is the opinion of the Commission that there will be no serious obstacle found in the attitude of the people at large toward the new medicine if properly presented and if matters are wisely handled.

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VII

RECOMMENDATIONS OF THE COMMISSION

In the light of the facts as gathered by the Commission the following recommendations are made to the Rockefeller Foundation:

MEDICAL WORK IN CHINA

That the Foundation should undertake medical work in China. In the opinion of the Commission the need is great beyond any of their anticipations and the opportunities for progress in all lines are equally great.

CO-OPERATION WITH MISSIONARY INSTITUTIONS

That the Foundation so far as possible should co-operate with existing missionary institutions which have already done such good work in China.

HIGH STANDARD FOR MEDICAL INSTRUCTION

That medical instruction in which the Foundation is concerned should be on the highest practicable standard. Such standard at the present time seems to include as a requirement for admission to a medical school the training of a middle school (roughly equivalent to an American High School) supplemented by two years of pre-medical work devoted to instruction primarily in English, Chinese, physics, chemistry, and biology.

ENGLISH AS THE PRINCIPAL MEDIUM OF INSTRUCTION

That the teaching in medical schools in which the Foundation is concerned for the present and for some time to come should be in English as the main language. A part of the instruction might be in Chinese and it might be possible in most classes to have explanations given in Chinese.

PUBLIC HEALTH—TIME NOT RIPE FOR LARGE WORK BY FOUNDATION

That on account of the lack of suitably trained men, and for other reasons, the time is not yet ripe for the Foundation to assist in the organization of a large work in relation to public health.

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However, the Commission believes that a useful foundation for such work might be laid by assisting one or more local hospitals, on condition that the work of the institution should be under the control of a physician approved by the Foundation or its representative.

If a suitable physician, acquainted with the Chinese language, were found for this position he would naturally become the adviser of the local authorities on public-health matters. He could probably from the beginning do a great deal of vaccinating among the general public against small-pox, as much has already been done in various places. He would also be able to do effective therapeutic work in the cholera epidemics which recur in China every few years. In this way and through his hospital practice he should so win the confidence of the authorities and the people that they would be likely to give respectful consideration to his recommendations in regard to means of preventing these and other diseases.

AN INDEPENDENT INSTITUTION FOR RESEARCH NOT RECOMMENDED

That it is not advisable at this time to establish an independent institution for research in China, but that research be encouraged in connection with the medical schools aided.

MEDICAL SCHOOL AT PEKING

That the first medical educational work organized should be in the city of Peking and that it be in connection with the Union Medical College if suitable arrangements can be made.

MEDICAL SCHOOL AT SHANGHAI

That on account of the population, wealth, and convenience of location of the city of Shanghai, the second medical work of the Foundation be established in that city.

In the opinion of the Commission it is unfortunate that there should be in Shanghai two competing medical schools both under American auspices and both teaching in the English language.

It also seems to the Commission much wiser that well supported schools of medicine should not be undertaken both in Shanghai and

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in Nanking. One strong institution in the lower Yangtze Valley would be better and the better place for such institution is in the larger city.

The Commission therefore recommends:

1) That there be established at Shanghai a new institution, perhaps chartered under the laws of the State of New York, to be known as the Shanghai Medical College or by some other name acceptable to the various interests concerned.

2) That provision be made for co-operation with existing medical schools in and near Shanghai on such basis as would be advantageous to the co-operating schools and would unite the medical educational forces and the principal hospitals of the entire lower Yangtze Valley contributory to Shanghai.

The Commission hopes that the above plan will make it possible to unite all the medical forces in the vicinity of Shanghai in medical education of a high grade in order to secure the advantages of union, while at the same time leaving to each co-operating institution its entire autonomy. A special advantage to the united institution will lie in making it possible to have proper arrangements with the various missionary secondary schools and further with the various missionary hospitals in the territory. On the other side the advantages to the co-operating institutions will lie in being connected with an institution financially strong and therefore permanent in character and situated in a city which will afford the greatest amount of clinical material and probably the most substantial support among the Chinese.

MEDICAL EDUCATION AT CANTON

That assistance should be given to the plans of the Canton Christian College for medical education. The particular form of such aid cannot be determined at this time on account of some pending questions with reference to the Canton Hospital.

MEDICAL EDUCATION AT CHANGSHA

That aid be given to the medical plans of the Yale Mission at Changsha. In the opinion of the Commission it is advisable to put such aid in a form which will be likely to stimulate the interest and support of the Hunanese.

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MODEL TUBERCULOSIS HOSPITALS

That two model tuberculosis hospitals be established in China and that expert advice be secured as to location and organization. Kuling in the Yangtze Valley and the Western Hills between Peking and Paotingfu are tentatively suggested as possible locations. Our attention was called in all parts of China to the overwhelming prevalence of tuberculosis. It has become especially common among the student classes. Plans for a sanitarium situated near Peking are already being formulated.

FELLOWSHIPS

That six Fellowships yielding $1,000 gold a year and necessary traveling expenses be maintained in order to enable selected Chinese graduates in medicine to prosecute further study abroad.

SCHOLARSHIPS

That in connection with the medical schools aided provision be made for a limited number of scholarships in order to encourage selected young men who have no sufficient financial means to pursue the study of medicine. It is suggested that ten be offered for the year 1915–16 and ten additional yearly until the total number reaches fifty. The expense will be $750 in the first year and $3,750 in the fifth year and thereafter.

THE DEVELOPMENT OF HOSPITALS

That hospitals be developed first of all in the fields tributary to the medical schools which may be aided by the Foundation. Aid may be given to other hospitals as circumstances may warrant.

The following suggestions are submitted:

Increasing the Staff of Foreign Doctors.—That the Foundation offer to pay the salaries of additional foreign medical men selected by the missions and subsequently approved in each individual case by the Foundation. These doctors should be sent only to hospitals already established, so that they would be additional members of the hospital staff. This system would put the task of finding medical men on the missions, but would solve the question of the lack of medical men in so far as it depends on the lack of money for salaries. It would also prepare more hospitals to be proper institutions for the clinical training of medical school graduates.

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Provision for the Salaries of Chinese Doctors in Hospitals.—These men should be graduates of schools recognized by the Rockefeller Foundation and their appointment should be subject to the approval of the representative of the Foundation in China.

The provision of salaries for the Chinese would be of direct value in two ways: on the one hand, it would help to give the hospitals more efficient staffing; on the other hand, it would provide opportunities for a considerable number of Chinese graduates to continue hospital work for a series of years. Some of these men might give their full time to the hospital, and some perhaps half time. It is of great importance that Chinese graduates be kept in touch with hospitals, so that their standard of work will not deteriorate. By this means they will be constantly under the supervision of trained foreign physicians.

Provision of Salaries for Foreign Nurses.—That the Foundation support a considerable number of foreign nurses in hospital work. These nurses should be nominated by the missions, and subsequently approved by the Rockefeller Foundation. The attempt should be made to have them sent, first of all, to the better-equipped and better-staffed hospitals. The lack of nurses would thus be met, in so far as it depends on the lack of money on the part of the missions.

Equipment.—It is impossible to undertake to provide suitable equipment for even a small proportion of the hospitals in China. However it would be most important to increase the equipment of certain hospitals, and more especially those which can be brought into line with the medical schools which may be aided by the Foundation and of those hospitals which have an adequate medical and nursing staff. It is, of course, quite unnecessary to provide much increased equipment for a hospital which has only one doctor.

Business Managers.—In many hospitals the efficiency of the medical staff can be enormously increased by the provision of a salary for a business manager. This man may be either foreign or Chinese.

The Establishment of Diagnostic Laboratories.—One of the greatest needs of practically every hospital in China is an opportunity

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to get modern laboratory diagnostic measures carried out. There are not more than three or four hospitals in China, outside of Peking and Shanghai, in which pathological material can be studied. It would be quite simple to provide a system by which bacteriological, serological, and pathological work could be done in a central laboratory. The hospitals could send specimens in special containers by mail, and the material could be worked up for the most part by trained technicians, as is done in the large Board of Health laboratories in foreign countries. Reports, together with specimens, could then be returned as soon as possible to the hospitals. Such a system would have a twofold value: it would help the hospital, in that it would provide adequate diagnostic information; and it would stimulate the physician by helping him to know exactly what he was dealing with and keeping him in touch with scientific work. It would help the laboratory, by bringing in an enormous amount of material which would form the basis for important research studies. It would also serve as a check on the grade of work done by the various hospitals, and by the men working in them, and would tend to bring many country hospitals in close connection with the more important centers. Such diagnostic laboratories should be established in Peking and Shanghai in connection with the pathological departments of the medical schools. This would provide much material for teaching purposes and would also make the expense of an entirely separate plant unnecessary.

Medical Libraries.—One need emphasized by many of the best medical men in China is some means of getting hold of medical literature. At least one, probably two, extensive libraries containing especially files of medical journals should be established in connection with medical schools. These libraries should be provided with competent librarians and such assistance as will enable them to send books anywhere in China.

THE TRAINING OF NURSES

That encouragement be given to the training of nurses, especially in hospitals aided by the Foundation.

(1) In special cases it may be desirable to give aid in the way of providing dormitories in connection with schools for nurses.

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(2) It is desirable that a reasonable number of scholarships (not over five at the beginning) be established in order to enable selected Chinese women to receive nurses' training in the United States. This will provide a group of highly trained women who may become teachers of nursing and superintendents of hospitals.

(3) Provision should be made for the translation into Chinese of textbooks on nursing. The Nurses' Association of China already has in view an English-trained Chinese nurse who is competent to do the work.

SPECIAL INSTRUCTION FOR HOSPITAL STAFF—RESIDENT FELLOWS

That as soon as the medical schools aided by the Foundation become strong and well equipped, medical men in hospitals under pay from the Foundation spend three months in each year pursuing advanced work in such schools. In this way the members of the staff of various hospitals will keep informed on the progress of medical science and will constantly refresh their professional knowledge and skill. Further, such evidence will afford an opportunity for investigation along lines which may be suggested in hospital practice, and will at the same time bring to the medical school faculty the results of observations in the field. Members of a hospital staff during residence at the medical school may be known as "resident fellows."

A RESIDENT COMMISSIONER IN CHINA

That the Foundation be represented in China by a resident commissioner, who will administer the affairs of the Foundation in connection with the institutions aided. He will make regular reports and recommendations. The commissioner should have a suitable staff. Peking should be his headquarters.

ADVISORY COMMITTEES

That in order to carry out the foregoing recommendations, an advisory committee of medical men be formed in the United States, and, if circumstances warrant, a similar committee in Great Britain.

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It should be the function of these committees to consider the qualifications of medical men whose appointment is subject to the approval of the Foundation; to consider technical questions as to the curriculum, equipment, or policy; and in general to aid the Foundation with reference to its work in China on all strictly professional matters.

EXPERT LECTURERS

That from time to time, as may appear expedient, specialists in various branches of medical science be sent to China by the Foundation to lecture in medical schools aided by the Foundation and elsewhere.

These specialist lecturers may at the same time be of use to the resident commissioner in the way of advice on matters technical in their character.

The lecturer may or may not be a member of the Advisory Committee. If not, he would naturally be considered later for appointment to that Committee.

Thus in time there will be a considerable number of high class medical men who will be conversant by personal observation with medical affairs in China.

FELLOWSHIPS FOR MISSIONARIES

That provision be made for ten fellowships annually for medical missionaries in China to enable them to proceed to the United States or Europe for advanced study, and that the annual stipend be $1,500, with $1,000 for expenses.

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APPENDIXES

A. The Authority and Instructions of the Commission.
B. Chinese Official Papers—Copies.
   1. Letter from the Minister of Education.
   2. Letter from the Governor of Hunan.
   3. Order of the Board of Education concerning Curriculum.
   4. Requirements for Middle Schools.
   5. Course of Study in Peking Medical Special College.
   6. Course of Study in Peiyang Military Medical College.
   7. Regulations of the Board of Interior as to Dissection.
C. Estimated Population of China by Provinces and of Its Principal Cities.

APPENDIX A

THE AUTHORITY AND INSTRUCTIONS OF THE COMMISSION

To Whom It May Concern:

BE IT KNOWN that the Rockefeller Foundation, a charitable corporation established under the laws of the State of New York, in the United States of America, has appointed the following persons to serve as the

CHINA MEDICAL COMMISSION

OF THE ROCKEFELLER FOUNDATION:

HARRY PRATT JUDSON, LL.D., President of the University of Chicago, Trustee of the Rockefeller Foundation, Member of the General Education Board, etc., *Chairman;*

ROGER SHERMAN GREENE, A.M., Consul-General of the United States of America at Hankow;

FRANCIS WELD PEABODY, M.D., of Harvard University and the Peter Bent Brigham Hospital, Boston, Mass.

GEORGE B. MCKIBBIN, Secretary to the Commission.

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The purpose of the Rockefeller Foundation, as stated in the Charter (Chapter 488 of the Laws of 1913), is that "of receiving and maintaining a fund or funds and applying the income and principal thereof to promote the well-being of mankind throughout the world."

The purpose of the above-named Commission is to inquire into the condition of medical education, hospitals, and public health in China.

In order to accomplish the objects of their appointment the members of the Commission will depend, from time to time, upon the good offices of public officials and of both public and private agencies and institutions concerned with medical education and the treatment or prevention of disease. To all such and to any other agencies, institutions, or individuals who may be in a position to further the inquiries of the Commission, its members are respectfully commended by the President and Trustees of the Rockefeller Foundation.

GIVEN in the City of New York and State of New York, in the United States of America, this twenty-first day of March, in the year nineteen hundred and fourteen.

(Signed) JOHN D. ROCKEFELLER, JR., *President.*

(Seal)

(Signed) JEROME D. GREENE, *Secretary.*

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APPENDIX B

1. LETTER FROM THE MINISTER OF EDUCATION

(*Translation*)

MINISTRY OF EDUCATION,
PEKIN, June 19, 1914.

To Dr. H. P. Judson,
Representative, Rockefeller Foundation:

DEAR SIR: I appreciated very much your visit and listened to your conversation with great interest. I understand that your mission to China is connected with medical education especially with the provision of funds for encouragement of the same. The work is philanthropic and truly worthy of one who has humanitarian principles at heart. Therefore all your proposals meet with my hearty support.

I am,

Dear Sir,

Your obedient servant,

(Signed) TANG HUA-LUNG
Minister of Education.

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(*Copy*)

2. LETTER FROM THE GOVERNOR OF HUNAN

GOVERNMENT HOUSE
HUNAN

CHANGSHA, July 20, 1914.

Office of the Governor.

MY DEAR SIR: Your very kind letter of June 20 has been received and I am very glad that you were able to call on my brother while you were in Peking.

Your visit and that of your colleagues to Changsha is sure to prove a great impetus to the cause of medical education. The people of Hunan are rapidly awakening to the advantages of western medicine, and if their usual enthusiasm can be aided by men and equipment from without, to supplement what we can do locally, it should be possible to develop here at Changsha a big Medical School of high standard. The city is growing in every sense of the word and I am personally grateful for what interest you may take for the cause of medical education in this province.

I am,

Yours cordially,

(Signed) S. M. TAN.

Dr. Harry Pratt Judson,
Care Messrs. Thomas Cook & Son,
Yokohama, Japan.

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3. ORDER OF THE BOARD OF EDUCATION CONCERNING THE CURRICULUM OF MEDICAL SPECIAL COLLEGES

Curriculum and Regulations:

I. Medical Schools shall have as their object the training of medical men.

II. The regular course of medical schools shall last four years.

III. Medical schools may establish preparatory departments whose course shall last one year.

IV. Medical schools may establish research departments for their graduates. Courses in these may last one year and upward.

V. The curriculum of a medical school shall be as follows:

1. German
2. Chemistry
3. Physics
4. Anatomy dissection
5. Dissection on organs
6. Histology
7. Embryology
8. Physiology
9. Medical chemistry
10. Hygiene
11. Bacteriology
12. Pathology
13. Pathological anatomy
14. Pharmacology
15. Diagnosis
16. Medicine
17. Surgery
18. Orthopedics
19. Eye diseases
20. Ear, nose, and throat diseases
21. Gynecology
22. Obstetrics
23. Pediatrics
24. Dermatology
25. Venereal diseases
26. Nervous diseases
27. Medical jurisprudence
28. Practical work in chemistry and physics
29. Practical work in anatomy
30. " " " histology
31. " " " physiology
32. " " " medical chemistry
33. Practical work in pathological anatomy and histology
34. Practical work in hygiene
35. " " " bacteriology
36. " " " pharmacology
37. " " " medicine
38. " " " surgery
39. " " " bandaging
40. " " " eye diseases
41. " " " ear, nose, and throat diseases
42. Practical work in gynecology
43. " " " obstetrics with manikin work
44. Practical work in pediatrics
45. " " " dermatology
46. " " " venereal diseases
47. " " " nervous diseases
48. " " " medical jurisprudence

VI. The arrangement of the schedule of all the courses in the school shall be determined by the Principal and shall be reported to the Minister of Education.

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VII. Medical schools shall provide suitable quarters for practical work, and all needed charts, books, apparatus, instruments, and specimens for the students.

VIII. Medical schools may, according to special needs, institute a department of materia medica and pharmacy following the rules and regulations of schools of pharmacy and designate them accordingly.

IX. All public and private medical schools, in addition to conforming to the orders for schools in special branches and to the rules and regulations laid down for public and private schools in special branches, shall be carried on in accordance with the present rules and regulations.

X. These rules and regulations are in force from the date of their publication.

Departmental Order No. 25.

Date: November 22, 1912.

4. CHINESE CENTRAL BOARD OF EDUCATION REQUIREMENTS FOR MIDDLE SCHOOLS ("HIGH SCHOOL" EQUIVALENT)

Transcribed from "Orders of the Board of Education" January, 1913

Subjects	Hours			
	1st Year	2d Year	3d Year	4th Year
Ethics	1	1	1	1
Chinese literature	7	7	5	5
Foreign language	7	8	8	8
History (Chinese)	2	2	2	2
Geography	2	2	2	2
Mathematics	5	5	5	5
Natural science	3	3	2	0
Physics	0	0	4	0
Chemistry	0	0	0	4
Economics	0	0	0	2
Drawing	1	1	1	2
Manual training	1	1	1	1
Music	1	1	1	1
Physical culture	3	3	3	3
Total hours	33	34	35	36

Notes.—(*a*) As to foreign language. English is to be given the preference, but according to local conditions French, German, or Russian may be substituted.

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(*b*) Special emphasis is to be laid upon the History of China, with more general courses in universal history, especially in relation to its bearing upon China.

(*c*) Mathematics include arithmetic, algebra, and geometry.

(*d*) Natural science includes botany, zoölogy, mineralogy, human physiology, and hygiene, with as much laboratory work as possible.

(*e*) Drawing includes Free-Hand and Mechanical Drawing.

(*f*) No school shall give less than 32 hours per week, nor more than 36.

(*g*) The number of instructional days per year shall not fall below 220. Time spent in examination or review shall not be included in this minimum.

(*h*) The number of students in any one middle school shall not exceed 400, except in specially authorized cases.

(*i*) The number of students in each class shall not exceed 50, except in specially authorized cases. Music, ethics, and physical culture only may be taught in larger groups.

(*j*) Provincial middle schools shall have their principals appointed by the Civil Governor of the Province. Teachers shall be appointed by the principal, but notification of such appointments must be sent to the Civil Governor. (*Provincial* Middle Schools are those supported by provincial funds.)

(*k*) *District* middle schools shall have their principals appointed by the District Magistrate, with the sanction of the Civil Governor of the Province. Teachers shall be appointed by the principal, but notification of such appointments must be sent to the District Magistrate, and transmitted by him to the Civil Governor of the Province.

(*l*) *Private* middle schools shall have their principals appointed by the association of citizens establishing the school, but notification of such appointment must be sent to the Civil Governor of the Province.

(*m*) No middle school shall employ less than eight teachers. If the number of sections or classes exceeds four, the teaching staff shall be further increased so that not less than three teachers shall be employed for every two extra classes.

(*n*) The location of every middle school shall be determined after a careful consideration of moral and sanitary surroundings.

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5. PEKING MEDICAL SPECIAL COLLEGE

SCHEDULE OF COURSES

		1st Year			2d Year			3d Year			4th Year		
		1st Term	2d Term	3d Term	1st Term	2d Term	3d Term	1st Term	2d Term	3d Term	1st Term	2d Term	3d Term
1. German		10	10	8	6	6	4	4	4	4	4	4	4
2. Chemistry	Lectures and laboratory work	4	4	6	.....	.....	.....	.....	.....	.....	.....	.....	.....
3. Physics		2	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
4. Anatomy	Lectures	10	10	8	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Dissection	.....	.....	.....	4	4	4	.....	.....	.....	.....	.....	.....
	Dissecting of organs	.....	.....	.....	.....	.....	.....	2	2	.....	.....	.....	.....
	Lectures on histology	4	4	4	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Laboratory work in histology	.....	.....	.....	4	4	4	.....	.....	.....	.....	.....	.....
	Embryology	.....	.....	.....	.....	2	2	.....	.....	.....	.....	.....	.....
5. Physiology	Lectures and laboratory work in physiology and medical chemistry	2	2	6	5	3	.....	.....	.....	.....	.....	.....	.....
6. Hygiene	Lectures and laboratory work	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	2	2
7. Bacteriology	Lectures and laboratory work	.....	.....	.....	.....	.....	4	4	2	.....	.....	.....	.....
8. Pathology	General survey	.....	.....	.....	8	6	4	.....	.....	.....	.....	.....	.....
	Pathological anatomy	.....	.....	.....	.....	2	4	2	.....	.....	.....	.....	.....
	Laboratory work in pathological anatomy	.....	.....	.....	.....	.....	.....	hours not fixed					
	Laboratory work in pathological histology	.....	.....	.....	.....	.....	.....	4	4	4	.....	.....	.....
9. Pharmacology	Lectures and laboratory work	.....	.....	.....	2	4	2	.....	.....	.....	.....	.....	.....
10. Medicine	Lectures	.....	.....	.....	.....	.....	.....	3	3	6	6	3	3
	History taking	.....	.....	.....	.....	.....	.....	hours not fixed					
	Clinics	.....	.....	.....	.....	.....	.....	at least three hours					
	Diagnosis	.....	.....	.....	2	3	3	.....	.....	.....	.....	.....	.....
	Pediatrics	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	2	.....

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11. Surgery	General survey				4	4	4						
	Lectures							3	3	3	3	3	3
	History taking								hours			fixed	
	Clinics							at	least	four	not	hours	
	Practice in bandaging						2						
	Operating and orthopedic work								hours	not	fixed		
12. Dermatology	Lectures and clinics							1	1	1			
13. Venereal diseases	History taking							1	1	1			
14. Diseases of ear, nose, and throat	Lectures and clinics							1	1	1			
	History taking								hours	not	fixed		
15. Diseases of the eye	Lectures and practice with the ophthalmoscope							3	3	3			
	Clinics								hours	not	fixed		
	History taking							hours	not	fixed			
16. Obstetrics	Lectures on obstetrics										3	3	3
Gynecology	Lectures on gynecology							3	3	3			
	Clinical lectures on obstetrics and practical work								hours	not	fixed		
17. Neurology	Clinical lectures										2	2	2
18. Medical jurisprudence	Lectures and practical work										4	4	4
19. Ethics		1	1	1	1	1	1	1	1	1	1	1	1
20. Chinese		2	2	2									
21. Gymnastics		1	1	1									
Total		36	36	36	36	39	38	39	35	34	34	31	29

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6. PEIYANG MILITARY MEDICAL COLLEGE

(Established by the Department of War)

Schedule of Courses

FIRST YEAR

Name	Hours per Week
1. Anatomy	12
2. Histology	2
3. Physiology (Second half-year)	6
4. Inorganic Chemistry (First half-year)	7
5. Organic Chemistry (Second half-year)	7
6. Physics	3
7. Military Science	
8. Japanese	3
9. Ethics	1 or more.
10. Drill or Exercise	4 or more.
11. Riding	2 or more.

SECOND YEAR

1. Laboratory Anatomy	2
2. Embryology	1
3. Pathology (First half-year)	5
4. Pathological (Morbid) Anatomy (Second half-year)	6
5. Physiology	5
6. Materia Medica	4
7. Immunity (First half-year)	3
8. Bacteriology (Second half-year)	3
9. Physical Diagnosis	4
10. Surgery	4
11. German	4
12. Practical Histology	4 or more.
13. Practical Anatomy	4
14. Drill or Exercise	2 or more.
15. Riding	1 or more.

THIRD YEAR

1. Practice of Medicine	4
2. Surgery	4
3. Diseases of the Eye	5
4. Medical Chemistry, Laboratory work (First half-year)	4 or more.
5. Diseases of the Ear, Nose, Throat	2
6. Diseases of the Skin	2
7. Bacteriology, laboratory work	4 or more.
8. Practice in Hospitals	6 or more.
9. Clinical Medicine and Surgery	4
10. Syphilis	1
11. German	4
12. Drill or Exercise	2 or more.
13. Riding	2 or more.

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FOURTH YEAR

1. Practice of Medicine	4
2. Surgery	4
3. Hygiene	4
4. Mental Diseases	2
5. Therapeutics	2
6. German	4
7. Drill or Exercise	2 or more.
8. Riding	1 or more.
9. Hospital Practice	6 or more.
10. Clinical Medicine	2
11. Clinical Surgery	2
12. Clinical Ophthalmology	2

7. REGULATIONS OF THE BOARD OF INTERIOR

Issued November 22, 1913. Order No. 51. Government Gazette 563.

We have adopted five regulations regarding dissection which we now especially proclaim.

REGULATIONS FOR DISSECTION

1. A physician, in a case of death from disease, may dissect the body and inspect the diseased part to determine (examine) the origin of the disease, but he must first obtain consent of the relatives of the deceased and clearly inform the local magistrate before proceeding to dissection.

2. The police and inspectors, in case of mysterious death, the cause and origin of which cannot be accurately ascertained without autopsy, may appoint a physician to dissect said corpse.

3. The bodies of all those meeting death by punishment or dying in prison from disease, without relatives or friends to claim their bodies, may be given by the local magistrate to a physician for dissection, to be used for the purpose of experimentation in medical science, but after dissection the body must be sewed up and buried.

4. If any are willing for the benefit of science to offer their bodies for dissection and leave word to that effect before death (they may do so), but the whole body must be sewed up and returned to his or her family after dissection.

5. These regulations are in force from the day of their proclamation.

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APPENDIX C

ESTIMATE OF THE POPULATION OF CHINA BY PROVINCES AND PRINCIPAL CITIES AND THE AREA OF THE PROVINCES

	National Review Annual		Maritime Customs Returns	Population of Principal Cities	
	Area Sq. Miles	Population		National Review	Customs
Anhwei	54,826	23,672,300	36,000,000		
Anking				40,000	
Wuhu				137,000	89,000
Chekiang	36,680	11,580,000	17,812,000		
Hangchow				350,000	594,000
Ningpo				260,000	455,000
Shaohing				500,000	
Chihli	115,830	20,930,000	29,400,000		
Peking				500,000	
Paotingfu				80,000	
Tientsin				750,000	800,000
Fukien	46,332	23,870,000	20,000,000		
Foochow				624,000	624,000
Amoy				114,000	114,000
Changchowfu				500,000	
Honan	67,954	25,317,820			
Kaifengfu				200,000	
Hunan	83,398	22,169,000	22,000,000		
Changsha				500,000	250,000
Changteh				300,000	
Siangtan				300,000	
Yochow				20,000	20,000
Hupeh	71,428	35,280,000	34,000,000		
Wuchang				500,000	166,000
Hankow				870,000	590,000
Hanyang				400,000	70,000
Kansu	125,483	10,386,000			
Lanchowfu				500,000	
Kiangsi	69,498	26,532,000	24,534,000		
Nanchangfu				300,000	
Kiukiang				38,000	36,000
Kiangsu	38,610	23,980,230	26,920,000		
Nanking				350,000	269,000
Chinkiang				168,000	184,000
Shanghai				966,000	651,000
Soochow				500,000	500,000
Kwangsi	77,220	5,142,000	8,000,000		
Kweilinfu				80,000	
Nanning				25,000	87,600
Wuchow				65,000	40,000
Kwangtung	100,000	31,865,200	32,000,000		
Canton				1,000,000	900,000
Fatshan				500,000	
Kongmoon				55,000	62,000
Sheklung				100,000	
Swatow				35,000	70,000
Kweichow	67,182	7,650,000			
Kweiyangfu				100,000	
Anshunfu				50,000	

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APPENDIX C—*Continued*

	National Review Annual		Maritime Customs Returns	Population of Principal Cities	
	Area Sq. Miles	Population		National Review	Customs
Shansi	81,853	12,200,000	.....	.....	.....
Taiyuanfu	.....	.....	.....	250,000	.....
Hweihwating	.....	.....	.....	200,000	.....
Shantung	55,984	38,247,900	38,000,000	.....	.....
Tsinanfu	.....	.....	.....	100,000	.....
Chefoo	.....	.....	.....	85,000	54,500
Tsingtao	.....	.....	.....	35,000	34,000
Tsiningchow	.....	.....	.....	150,000	.....
Shensi	75,290	8,450,000	.....	.....	.....
Hsianfu	.....	.....	.....	1,000,000	.....
Hanchungfu	.....	.....	.....	80,000	.....
Szechuan	218,533	68,724,800	71,456,000	.....	.....
Chengtufu	.....	.....	.....	500,000	.....
Chungking	.....	.....	.....	620,000	631,700
Kiatingfu	.....	.....	.....	150,000	.....
Wanhsien	.....	.....	.....	140,000	.....
Yunnan	146,718	12,721,500	7,571,000	.....	.....
Yunnanfu	.....	.....	.....	45,000	.....
Manchuria (three Eastern Provinces, Fengtien, Kirin, and Heilungchiang)	363,700	8,500,000	19,290,000	.....	.....
Moukden	.....	.....	.....	180,000	.....
Newchang	.....	.....	.....	75,000	.....
Kirin	.....	.....	.....	100,000	.....
Harbin	.....	.....	.....	.....	81,400
Dairen	.....	.....	.....	60,000	24,500
Tsitsihar	.....	.....	.....	30,000	.....
Hsinkiang (Chinese Turkestan)	550,579	1,200,000	.....	.....	.....
Kashgar	.....	.....	.....	60,000	.....
Mongolia	1,267,953	2,580,000	.....	.....	.....
Urga	.....	.....	.....	37,000	.....
Thibet	463,320	6,430,000	.....	.....	.....
Lhasa	.....	.....	.....	40,000	.....
Customs estimate for Honan, Shansi, Shensi, Kansu, and Kweichow together	.....	.....	55,000,000	.....	.....
Grand totals	4,178,371	437,428,750	441,983,000*		

* Exclusive of Hsinkiang, Mongolia, and Thibet.

There has been no authoritative national census of China. The *National Review*, a weekly published by Chinese in English, gives in its annual for the year 1910 a so-called official estimate of the population of the several provinces and principal cities, from which the

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figures in the second column are taken. The Maritime Customs Report on the Foreign Trade of China for the year 1913 contains quite different figures, which are given in the third column. In general where the two authorities differ considerably, the lower estimate is more likely to be correct. The customs estimate includes only Chinese, but this affects only such cities as Dairen and Harbin which have large Japanese and Russian colonies and to a slight degree Shanghai.

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APPENDIX D

DISTRIBUTION OF MISSIONARY HOSPITALS AND MEDICAL WORKERS IN CHINA BY PROVINCES

Provinces	Cities Having Missionary Doctors	Hospitals	Doctors		Nurses
			Men	Women	
Anhui	5	5	7	1	5
Chekiang	8	10	22	2	8
Chihli	10	18	26	12	6
Fukien	26	34	29	15	28
Honan	8	9	14	3	13
Hunan	12	13	18	4	10
Hupeh	12	22	22	6	13
Kansu	1	1	1	.....	1
Kiangsi	4	6	5	3	2
Kiangsu	12	21	42	18	20
Kwangsi	3	4	5	1	2
Kwangtung	22	27	43	16	9
Kweichow	2	2	2	.....	.....
Shansi	7	6	11	.....	4
Shantung	19	24	27	8	11
Shensi	1	1	3	2	1
Szechuan	22	17	33	12	6
Yunnan	1	2	1	.....	.....
Hsinkiang	.....	.....	.....	.....	.....
Manchuria (Fengtien, Kirin, and Heilungkiang)	17	22	18	14	1
Mongolia	.....	.....	.....	.....	.....
Thibet	.....	.....	.....	.....	.....
	192	244	329	117	140

Total number of doctors, men and women, 446.

Total number of medical missionaries, including foreign nurses, 586.

Note.—The above table is not absolutely accurate, as changes are constantly occurring. Furthermore answers were not received from all stations to which inquiries for information were addressed. Probably the actual number of missionary hospitals is slightly larger than that stated. A few medical missionaries are not connected with any hospital, but are simply receiving out-patients at their homes or at small dispensaries. A few others are no longer actively engaged in medical work.

The membership of the China Medical Missionary Association at the beginning of 1914 was as follows:

Active members	470
Honorary and corresponding members	54
	524

This total includes some missionaries in Korea, Formosa, Japan, and other places outside China, and also a number of private practitioners.

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