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CHEELOO UNIVERSITY SCHOOL OF MEDICINE

RANDOLPH T. SHIELDS, M.D., DEAN

The beginning of this school dates back to a small class of students taught by Drs. J. B. Neal and C. F. Johnson, of the American Presbyterian Mission, at Tsinan, and by Drs. J. R. Watson and T. C. Paterson, of the English Baptist Mission, at Tsingchowfu, but the school was regularly established at Tsinan in 1909, by the English Baptist Mission and the American Presbyterian Mission, North, the institution at that time being known as the Union Medical College. To this college, the China Medical Board, in 1916, transferred three classes of students from the former Peking Union Medical College, at the same time making grants towards equipment and upkeep. In 1917 the Medical Department of the University of Nanking was closed and some of its students and teachers were transferred to Tsinan. In 1919 the Hankow Medical College also closed its doors and transferred some students and teachers to Tsinan. In 1923, a union was effected between this school and the North China Union Medical College for Women, and in September 1923, women students were admitted to the Medical School. In 1924, the University was granted a charter by act of the Parliament of Canada.

Beginning with the class which entered in 1910, there have been 220 graduates of the School of Medicine. About half of these, having served for one or more years in mission hospitals, are now in government or private practice. Very few have gone into military service. The following table shows the present location of 106 of our alumni in various mission hospitals. Many of these hospitals have been entirely managed for several years by these graduates. As a rule, we have received very encouraging reports of the work done by them. In only a few instances has their professional work, or their character, been unsatisfactory. Thus, from the standpoint of the missions, we have been able to train a large number of men to staff their hospitals. This has been conspicuously true during the past two years. Many hospitals were able to keep going because of the fact that they had graduates of Cheeloo who stuck to their work. This has been true also of the graduates of similar medical schools, notably the West China University School of Medicine in Chengtu, Szechuen. Of the

total number of Cheeloo graduates, twelve are women. Six have been abroad to England, America or Germany for post-graduate study. In addition to this list, one should mention the graduates of the University of Nanking Medical Department, those of the Hankow Medical School and of the old Union Medical College, Peking. The story of these men is similar to that of the graduates of Cheeloo.

Instruction in the Cheeloo Medical School is in the Chinese language, though the students are required to know a certain amount of English, are instructed in it, and are encouraged to use it as much as possible. There is also a School of Nursing attached to the instruction, and a Department of Pharmacy which is also teaching a few students. Seven students have graduated from this department, and are now working in the dispensaries of the various mission hospitals.

The following are only a few quotations from many encouraging letters which we have received about the work our graduates are doing.

From Kansu province: "We all hope that Dr.—will be back in Kansu some day. He has been far and away the best Chinese doctor in the province and we all miss him as a friend and fellow worker."

"Dr.—and Dr.—are both here and doing very well. I cannot praise too much the manner in which they conducted themselves in the troubles of 1927." (Kiangsu province.)

From Honan: "I am happy to state that both Dr.—and Dr.—are still serving in our mission hospital at K. . . They are men of sterling Christian character and ability and have done a splendid work in K. . . The past two years have specially proved their worth. They have stood firm and true and kept the hospital in perfect running order."

Modern medical education in China is still in its infancy. The supply of doctors is woefully inadequate to the needs of the people. Public Health work has scarcely begun, though the National Government is making a determined effort in this direction. The training of Christian men and women to staff and gradually take over the hospitals of the various missions in China, which numbered approximately 300 in 1927, is an important part of our work, and was the primary reason for the starting of medical schools by the missionary societies, but there is a greater and more permanent work which these schools should do. They should assist in training a large number of ethically and morally, as well as professionally, well qualified doctors to help in the establishment of a high standard medical

profession in China. To those familiar with the conditions of quackery, unethical or even criminal practice, and blackmailing obtaining throughout the country, the need for strong and good men and women in the medical profession is self-evident. The field is tremendous, the problem is difficult, but the result to be obtained is worthy of our best endeavors. Public Health workers, nurses, midwives, pharmacists, dentists, research workers and teachers all are needed. Cheeloo is one of the few schools that is attempting to fill some of these needs. The missions have made a good beginning in starting medical schools, and the government is planning to open schools, but medical schools are expensive institutions, and the present funds available in Cheeloo, as well as in other schools, are inadequate to meet the needs. When one thinks of the millions being spent on hospitals and medical schools in the home lands, where the need is incomparably less, one cannot but hope, and believe that some philanthropists will see the great need and assist our schools to do their part in trying to meet it.

The present staff at Cheeloo Medical School consist of 18 full time professors, associate and assistant professors, 6 instructors, 6 technicians, 3 pharmacists, 14 graduate nurses, and I dentist. We have 90 medical students, 45 pupil nurses, 5 pharmacy students, 4 students in laboratory technology. The budget for 1928—29 is estimated at a total of Mex. $192,000 for Medical School and Hospital. The hospital has 115 beds, but we have funds to erect a new hospital when conditions justify it.

MISSION HOSPITALS SERVED BY S.C.U. MEDICAL GRADUATES

January 1929

Total Medical Graduates since 1915	220
Not Located	20
Dead	3

Of the remaining 197, all are still in practice. Less than 50%, having, as a rule, served in mission hospitals, are now in private practice or Government employ. The remaining 105 are located as follows:

Mission	*No. of Hospitals*	*Provinces*	*No. of Graduates*
American Baptist	2	Chekiang	2
Southern Baptist	1	Shantung	1
American Board	6	Shansi Shensi Chihli Shantung	8
American Presbyterian (N)	11	Shantung Anhwei Hunan	17
American Presbyterian (S)	5	Kiangsu Chekiang	8
English Baptist	2	Shantung	2
Brethren Mission	3	Shansi	4

Mission	*No. of Hospitals*	*Provinces*	*No. of Graduates*
Canadian Church	1	Honan	1
China Inland	1	Kansu	1
Disciples' Mission	2	Kiangsu, Anhwei	3
Evangelical Church	1	Kweichow	1
Irish Presbyterian	1	Fengtien	1
London Mission	5	Chihli, Hupeh, Kiangsu	9
Lutheran	1	Honan	2
Mennonite	2	Chihli	2
Methodist Episcopal (Men's Board)	4	Chihli, Shantung, Anhwei, Kiangsu	8
Methodist Episcopal (Women's Board)	2	Chihli	2
Reformed Church of America	1	Fukien	1
Church of Scotland	1	Hupeh	1
Society for the Propagation of the Gospel	2	Shantung, Chihli	2
Union Hospitals			
Nanking Univesity, Margaret Williamson	2	Kiangsu	3
Tuberculosis Sanatorium, Kuling	1	Kiangsi	1
Total Missions 21	*Hospitals 57*	*Provinces 15*	*Graduates 80*

In addition to the above, there are *19* graduates working at *Cheeloo* and 6 at the *P.U.M.C.*

The following missions are contributing to the support of the School of Medicine:

American Presbyterian Mission. North
American Presbyterian Mission, South
English Baptist Mission
United Church of Canada Mission
London Mission
Methodist Episcopal Mission (Women's Board)
Society for the Propagation of the Gospel
Wesleyan Methodist Missionary Society

Jan 1931

CHEELOO UNIVERSITY SCHOOL OF MEDICINE

Dr. John G. Kerr, the famous medical missionary to China, in 1890 wrote a paper in which he emphasised the value of medical education in China, firstly, to train qualified physicians to treat the masses of the people, secondly, to train assistants for mission hospitals, and, thirdly, to train teachers for medical schools.

The official list of the National Medical Association of China for 1930 gives 15 government or private medical schools supported by Chinese. Very few of these are adequately equipped and staffed. In addition to these, there is the Peking Union Medical College (Rockefeller) and the Hongkong University School of Medicine (British). There are, at present, six mission medical Schools in China, two of which are exclusively for women.

FOUNDING AND DEVELOPMENT OF CHEELOO SCHOOL OF MEDICINE

The Cheeloo University School of Medicine is attempting to do its part in this great work. This school was established at Tsinan in 1909 by the English Baptist Mission and the American Presbyterian Mission, the institution at that time being known as the Union Medical College. To this College, the China Medical Board of the Rockefeller Foundation, in 1916, transferred three classes of students from the former Peking Union Medical College, at the same time making a grant of G. $50,000 towards equipment and upkeep. In 1917 the Medical Department of the University of Nanking was closed and some of its students and teachers were transferred to Tsinan. In 1919 the Hankow Medical College also closed its doors and transferred some students and teachers to Tsinan. In 1923 a union was effected between the North China Union Medical College for Women and the Cheeloo Medical School and, in September 1923, women students were admitted to the Medical School. In 1924 the University was granted a charter, by act of the Parliament of Canada. The School is now supported by the following missions, and also by an annual grant from the Rockefeller Foundation: —

American

- American Presbyterian Mission, North
- American Presbyterian Mission, South
- Women's Foreign Missionary Society of the Methodist Episcopal Church

British

- Baptist Missionary Society
- English Presbyterian Mission
- London Missionary Society
- Society for the Propagation of the Gospel
- Wesleyan Missionary Society

Canadian
United Church of Canada Mission
Women's Foreign Missionary Society of the United Church of Canada

GRADUATES AND THEIR WORK.

Beginning with the class which entered in 1910, there have been 242 graduates of the School of Medicine. Four of these are dead and two are not practising medicine. 82% of these graduates have served for shorter or longer periods in mission hospitals, with an estimate of over 700 years of service. In addition to these graduates now serving in mission hospitals, others, most of them having had experience in mission hospitals, are now working in government or private hospitals throughout many of the provinces of China and we feel sure that, on the whole, they are doing a good work for their country.

The following table shows the location, as far as we have been able to ascertain, of the 81 graduates who are now (January 1931) serving in mission hospitals.

Mission	No. of Hospitals	Provinces	No. of Graduates
American Advent	1	Anhwei	1
American Baptist (N)	3	Chekiang	3
American Baptist (S)	2	Shantung	2
American Board	4	Shansi, Hopei, Shantung	8
American Church	1	Anhwei	2
American Presbyterian (N)	10	Hopei, Shantung, Anhwei, Hunan	14
American Presbyterian (S)	7	Kiangsu	9
Brethren	3	Shansi	3
Canadian Church	1	Honan	1
English Baptist	3	Shantung, Shensi	4
Irish Presbyterian	2	Fengtien	2
London	4	Hopei, Hupeh, Kiangsu	7
Mennonite	1	Hopei	1
Methodist Episcopal	5	Hopei, Shantung, Kiangsu, Anhwei, Kiangsu	7

Mission	No. of Hospitals	Provinces	No. of Graduates
Methodist Episcopal (W.F.M.S.)	1	Hopei	2
Reformed Church of America	1	Fukien	1
Scotch Presbyterian	2	Hupeh, Fengtien	2
Society for the Propagation of the Gospel	2	Shantung, Hopei	2
Swedish Missionary Society	1	Hunan	1
United Christian Missionary Society (Disciples)	2	Kiangsu, Anhwei	4
United Church of Canada	2	Honan, Szechuen	3
UNION HOSPITALS			
Margaret Williamson, Shanghai	1	Kiangsu	1
Nanking University	1	Kiangsu	1

Total:- Missions 23 Hospitals 60 Provinces 14 Graduates 81
(including Union Hospitals)

Cheeloo Medical School & Hospital 21

CHEELOO MEDICAL SCHOOL STAFF AND STUDENT ENROLMENT. The present teaching staff of the School of Medicine consists of 32, 16 Chinese and 16 westerners. Those members of the staff teaching clinical subjects also carry on the work of the hospital. The student enrolment in the School of Medicine is 93 for the present year (1930-31).

MEDIUM OF INSTRUCTION. Instruction in the School of Medicine is in the Chinese language but the students are required to have a certain knowledge of English on entrance and are instructed in this subject while in the school, so that they may have a real reading knowledge and be able to utilise English text-books and journals.

PHARMACY STUDENTS AND TECHNICIANS. The School of Medicine has trained a number of Pharmacy students, eleven in all, up to the present. In the present Pharmacy class there are 12 students. Almost all of those already trained are at present working in mission hospitals, and, of those now in training, at least 10 expect to enter mission service. Owing to lack of personnel and funds, we have not organised this Pharmacy class as a regular School of Pharmacy, but it is hoped to do so before long as there is a great demand for pharmacists. During recent years

we have also trained a few technicians sent to us by various hospitals. Four men have already taken the full course of one year, and five students have taken a partial course. There are four students in the present class and several on the waiting list.

POST-GRADUATE COURSES. In addition to the above classes, we have several times given short post-graduate courses for doctors. During the last three years, difficulties of railway communication have prevented our attempting to do this, but it is hoped in the future to continue these courses which have proved very helpful.

PUBLIC HEALTH WORK. It is hoped in the future that the school can begin some regular public health work in the city and country, and also the training of midwives.

PATHOLOGY DEPARTMENT. The Pathology Department of the School of Medicine, besides teaching students and doing the pathological work for the hospital, including 44 autopsies during the past year, has assisted 22 hospitals in various provinces by examining pathological specimens and making reports. Though this requires a great deal of time, we feel that it is a worth while service.

THE HOSPITAL. The Cheeloo University hospital has a capacity of 105 beds and cares for about 2000 in-patients annually, with an attendance of approximately 40,000 at the Out-patient Department. A Dental Department has recently been opened, with a full-time dentist in charge. It is hoped that we may be able, in the future, to extend our work and open a small school of dentistry.

LEPER HOSPITAL. The Leper Hospital, which can accomodate 50 patients, is supported by the International Mission to Lepers. The School of Medicine is responsible for the management and the professional treatment of the patients.

SCHOOL OF NURSING. In connection with the hospital of Cheeloo University, there is a School of Nursing, staffed by 17 graduate nurses, with an enrolment of 46 pupil nurses during the present year. The first class of nurses graduated in 1919 and there have been 61 graduates of this Nursing School up to date, 29 being men and 32 women. For several years past, only women have been taken as students.

BUDGET. The budget for the Medical School and Hospital for the year 1931-32 is estimated at a total of Mex. ~~205,000.00~~ $165,000.00, plus the salaries of 22 missionaries.

COUNCIL ON PUBLICATION. Although the Council on Publication of the China Medical Association is not an organic part

of the Medical School, yet the majority of its members are on the staff of the Cheeloo Medical Faculty, and the headquarters of the council are located in the Medical School building. A large share of the work of translation of medical literature has been done by members of this institution.

The training of Christian men and women to assist in mission hospitals is a very important work and was the primary reason for the establishment of mission medical schools, but there is a more far-reaching and permanent aspect of the function of Christian medical schools. The value of modern medicine is becoming rapidly recognised in China and the government is making plans for the opening of hospitals and the establishment of medical schools throughout the country, as well as the development of public health work on a large scale. Already a large number of our graduates are serving in these new hospitals. Cheeloo can render a great and lasting service by turning out men and women with Christian ideals and high professional standards to serve as doctors, nurses, pharmacists, and as teachers in these professions in the New China.

[*Reprinted from the China Christian Year Book, 1931*]

With the compliments of
the author.

MEDICAL EDUCATION IN CHINA

R. T. Shields

Before taking up the present situation in regard to medical education, we shall do well to review briefly the history of the development of modern medical science in China.

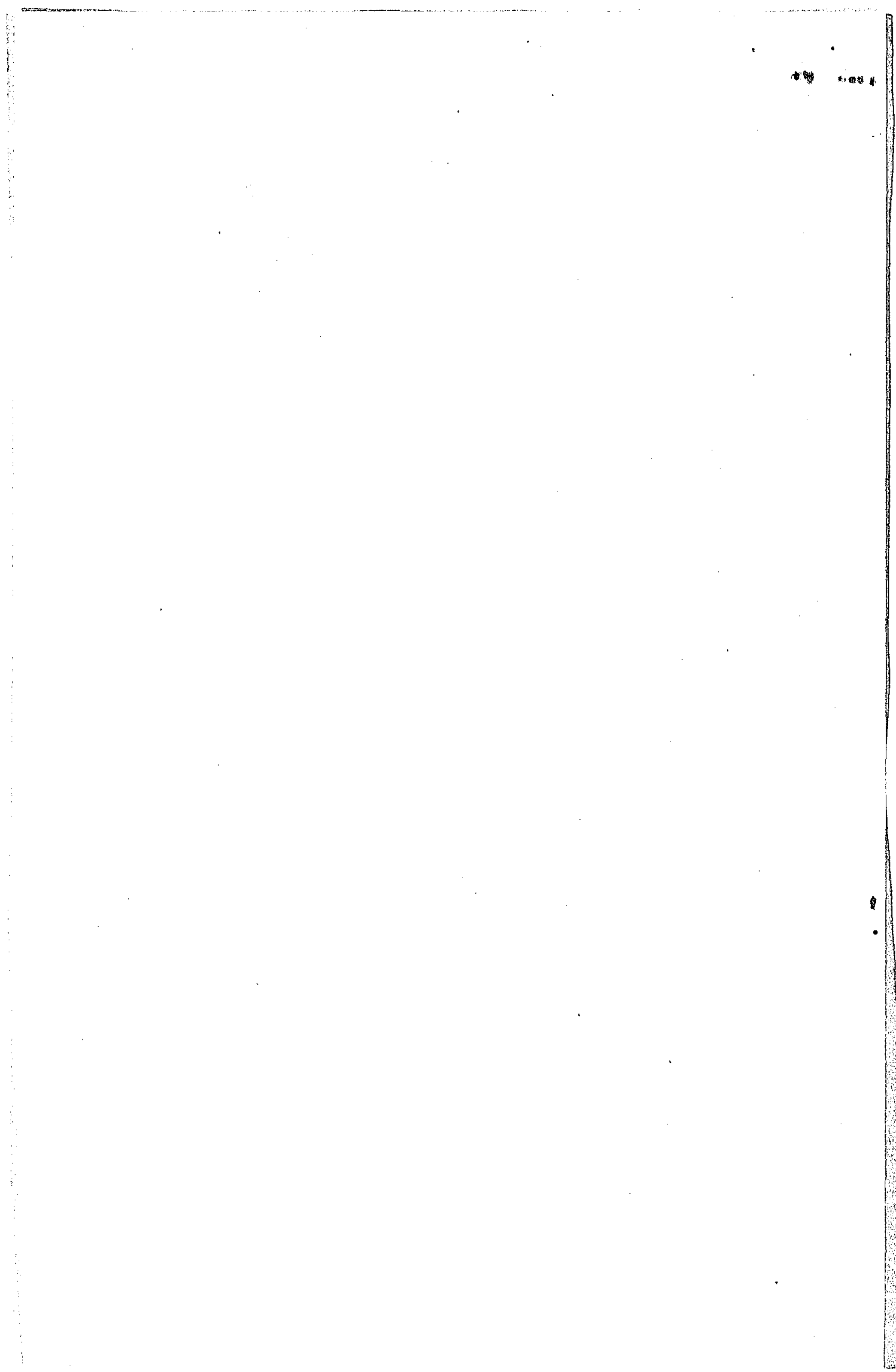
This article is not concerned with ancient Chinese medicine, nor with the early contacts of the Chinese with western medicine, such as the opening of the Jesuit Hospital in Macao in 1569, or the curing of the Emperor K'ang Hsi of malaria by cinchona bark possessed by the Jesuit missionaries.

MEDICAL WORK OF THE EAST INDIA COMPANY

The first modern medical work of which we have any record is that of Dr. Pearson, of the East India Company, who introduced vaccination into Canton in 1805. He later opened the Ophthalmic Hospital in Macao in 1827. Morrison, the first missionary to China, and Dr. Livingstone, of the East India Company, conducted a small dispensary in Macao in 182[illegible].

MEDICAL MISSIONARY PIONEERS

Dr. Peter Parker was the first regular medical missionary to come to China. He was sent out by the American Board Mission to Canton in 1834 and founded the Canton Hospital, and, with Bridgman, and Colledge, of the East



India Company, started the Medical Missionary Society of China in 1838. He also opened a hospital in Macao and began the teaching of students. This hospital was afterwards taken over by Dr. Lockhart of the London Mission, who, later, left it to Drs. Diver and Hobson, and, in 1844, opened a hospital in Shanghai. Later, when Dr. Lockhart was physician to the British Legation in Peking in 1861, he established a hospital in that city. Dr. Hobson, of the London Missionary Society, came out in 1839. He worked in Macao, Hongkong, Canton and Shanghai. He is known as the "first medical book-maker for China." His "Outline of Anatomy and Physiology," the first book of the kind, was published in 1850.

Dr. John G. Kerr, of the American Presbyterian Mission, came to Canton in 1854. He took charge of the Canton Hospital and was connected with it for thirty years. He did a prodigious amount of work: over 500,000 patients passed through his, or his assistants' hands, and he is credited with having performed over 1000 operations on bladder stone. He had more than one hundred students, and translated or compiled twenty-seven books, most of them small volumes; but his "Manual of the Theory and Practice of Medicine" consisted of six volumes. When Dr. Parker was appointed American Minister to Peking, Kerr took over the Canton Hospital in 1855. He also founded the first "Refuge for Insane" in 1898.

In 1870, Dr. Osgood, of the American Board, came to Foochow. He lived only ten years, but in that time, besides doing hospital work, he published the first large translation of Anatomy in four volumes. He was followed by Dr. Whitney, who revised and reedited this Anatomy.

In addition to the men already mentioned who were leaders in medical education and translation, we should mention Dr. Dudgeon, who translated an "Anatomy and Physiology" and Dr. Fryer who, though not a medical man, translated many scientific and medical books and edited a scientific journal in Chinese. Drs. Atterbury,

Douthwaite, Hunter and Porter also played a large part in the work of translation. There are many others who were outstanding in clinical work, but, in this article, we must confine ourselves to the educational leaders.

Dr. J. R. Mackenzie, of the L. M. S., arrived in Hankow in 1875. He moved to Tientsin in 1879. With Li Hung Chang as patron, he started a medical school in Tientsin in 1881, afterwards the Peiyang, and now the Naval Medical College.

In 1873, Dr. Combs came to Peking, under the W. F. M. S., as the first woman medical missionary.

First Medical Schools

Besides the teaching work done by Dr. Kerr and others, the following schools had been started between 1880 and 1900:— Dr. Mackenzie's school in Tientsin and Dr. Boone's school in Shanghai, which, in 1906, became the medical department of St. John's University. Drs. Lambeth and Park started teaching students in Soochow, Dr. Christie in Mukden, and Dr. Main in Hangchow. The Hongkong College of Medicine for Chinese was founded in 1887. This institution later became the Hongkong College of Medicine, and admitted others besides Chinese. Dr. Wilkinson had a class of students in Soochow, and Drs. Stuart, Beebe and Macklin a school in Nanking. Medical training was carried on, on a small scale, in many other hospitals.

Medical Missionary Association

The Medical Missionary Association was founded in 1886 and a journal begun, which has continued up to the present, first as a quarterly, then as a monthly.

Early Medical Work

It behooves us of this generation to consider not only the conditions in China, but the condition of science and

of medicine throughout the world at the time when these early pioneers came to this country. Dr. Pearson first vaccinated Chinese nine years after Jenner's discovery of vaccination was made. Morton first gave ether in Boston in 1846 and Simpson used chloroform in Edinburgh in 1847. The first record that we have of the use of ether in China was by Kuan, one of Dr. Parker's students, in 1847. Pasteur and Lister were not born until 1822 and 1827 respectively.

In addition to the medical ignorance of the world, these pioneers were handicapped by superstition and prejudice and the lack of communications which made cooperation on a large scale impossible. There was no literature in the Chinese language, and they had very poor equipment for their hospitals, no qualified assistants or nurses, and yet they not only accomplished a tremendous amount of medical and surgical work, but they laid the foundation for the growth of modern medicine in China, and they had the vision of a more efficient system of education which was to be made possible by their pioneer efforts. The spirit of Christian faith and love which is shown by the papers they have written is an example for us to follow.

Medical Education

The decade from 1880 to 1890 is a rather remarkable one, as far as medical work in China is concerned. During the 53 years, 1834–1887, there had been 150 medical missionaries all told in China. Between 1887 and 1890, forty-six arrived. If one reads over the lists of names of the medical men and women who arrived in China during the decade 1880 to 1890, one cannot but be struck by the fact that practically all of those who were later to lead in medical education and to found most of the medical schools of China were among this number:—Beebe, Boone, Brown, Christie, Cousland, Fulton, Gillison, Gloss, Hodge, Hopkins, Ingram, Johnson, Macklin, Main, McClure, Neal, Niles, Park, Paterson, Reifsnyder, Stuart,

Swan, Thomson, Watson. The pages of the medical journal after this period are full of articles, mostly by the group who came out in the eighties, dealing with medical education. A much disputed question was whether English or Chinese should be used as the medium of instruction. Of course, the necessity for carrying on the translation work which had been begun by the early pioneers was emphasised, and the need of a uniform terminology and an English-Chinese dictionary was stressed. It is very interesting to note that, in all the discussions of which one can find records in the journal, though there were differences of opinion in other matters, yet all seemed to be unanimous that not only should they join in a medical association, but that the medical men and women should cooperate and unite in carrying out their plan for medical education without any regard to nationality or denomination. Some articles even advise the different missions to unite in hospital as well as in educational work.

Training of Chinese

However, in spite of the attitude of the leading pioneers towards the value of the training of Chinese to be medical men and women, there was, apparently, not much interest shown by the missionary body in general in this phase of the work. (Note the lack of emphasis on this subject in the great missionary conferences in Edinburgh in 1890, and in Shanghai in 1907.) Indeed, most of the medical missionaries seemed to regard the small, inefficient and understaffed training schools as sufficient for the needs of China. They were so engrossed with the immediate, pressing needs of their own work that they did not see far enough into the future.

In 1890 Dr. Kerr wrote a paper in which he outlined the need for medical education. (1) to provide qualified physicians for the mass of the people; (2) to train assistants for mission hospitals; (3) to train teachers. He said:—"The education of physicians and surgeons for the people of this great empire is a subject of the utmost

importance, and one which may well engage the attention of the medical profession of the world," and he advocated that teaching should be carried on in the Chinese language.

Medical Missionary Conference

At the first conference of the Medical Missionary Association, in 1890, which was attended by thirty doctors, a Committee on Education was appointed, with Dr. Cousland as Chairman. From this time on, Dr. Cousland became one of the leaders in translation and the leader in the establishment of a standardized medical terminology in China. In spite of ill health, he persisted in this work for forty years, until his death, in Victoria, B. C., in June 1930. China owes a lasting debt of gratitude for the work which he did.

Improved Medical Instruction

At this 1890 Conference, a plea was made for more efficient teaching in place of the slipshod manner of instruction which had prevailed: "Unless it is done systematically, it would better not be done at all." . . . "There should be a first class medical school in Shanghai or Nanking." Co-operation was urged, in order to put teaching in China on a higher plane.

Stuart, in an editorial about the same time, wrote: "So little has been done in educational work," and he advocated that "a real school should be begun." Cousland urged the Educational Committee to arrange for textbooks and terms and also to organize a regular medical school. He thought that student training in hospitals would have to be continued as well. He soon submitted a long list of terms to be criticised.

In an editorial in the Journal, in 1897, Neal, reviewing medical education, reported that there were about forty hospitals where students were being taught. Already 268 had been trained, and 194 were in training, of whom thirty-three were women. "Of the number of so-called

schools, scarcely half a dozen can be considered medical schools."

Training of Women

Dr. Mary Brown, of Shantung, so far as we know, wrote the first article on the training of women, and referred to a class of four students whom she was teaching.

Medical work was, of course, largely broken up during 1900, but shortly afterwards we find the Nomenclature Committee, composed of Whitney, Cousland, Stuart and Neal, asking for subscriptions to carry on their work. There was quite a discussion at this time in regard to whether there should be central medical schools, or a central examining board, to be appointed by the Medical Missionary Association.

Increase of Medical Schools

The Hackett Medical School, in Canton, was begun by Dr. Fulton in 1899, and the London Mission College in Hankow in 1902. In 1903 the South China School of Medicine was started and Dr. Neal announced the plan for a Union School in Tsinan. In 1906 the Union Medical College in Peking was opened and, by 1909, had a staff of fourteen foreign doctors. The Women's Union Medical College in Peking was founded in 1906, by Dr. Gloss, as well as a school for nurses, and the Boone Medical College in Hankow in 1907. In this year it was reported that there was a government medical school for women in Tientsin. The London Mission College in Hankow became the Union Medical College in 1908. The Nursing Schools in Anking and Nanking were opened in this year. The Kung Yee Medical School in Canton was started in 1909. 1910 saw the opening of the Tsinan Union Medical College and of the Medical Department of Nanking University. In 1911 Mukden Medical College was opened and steps were taken to organize the West China Medical School in Chengtu. The C. M. S. Medical School in Foochow and the Harvard

Medical School, Shanghai, were started in 1912. The Pennsylvania Medical School joined St. John's in 1914, and the Hunan-Yale Medical School was organized in the same year. At this time the nine leading mission medical schools in China had 300 students. It was reported that the French government had given 25,000 francs for a medical school in Shanghai.

Publication Committee

In 1904, the Publication Committee which had been formed in 1897, announced that they were preparing five new books. At the conference of the China Medical Missionary Association in 1905, a resolution was passed, advocating union medical schools in four centres. It was voted to give $400 surplus from the treasury of the Association to the Publication Committee, and a further subscription of $400 was taken up from the members. This was practically the beginning of the new work of this Publication Committee, which has gone on until, at present, it has about $40,000 worth of sales a year.

Union Medical Schools

At the 1905 Conference, Dr. Christie, in his presidential address, advocated two or three union schools, and urged more translation and a journal in Chinese. At the 1910 Conference in Hankow, Dr. Cousland reported on schools, present and projected, including the proposed plans of the Rockefeller Foundation and of the Wuhan British scheme. In this report he spoke of "dissipated energies" in regard to medical education and said that "a wider outlook and more unselfish spirit is needed."

At the Conference of 1913, Dr. Thomas Cochrane voiced the feelings of many of those interested in education when he said: "There is no really efficient medical college in China . . . and further diffusion of effort is

likely to take place." As a result of discussion at this 1913 meeting, where the question practically before the conference was to advocate either twenty mission schools each manned by five doctors, or five mission schools each manned by twenty doctors, a compromise was effected, advocating eight schools manned by at least fifteen doctors each.

At the Conference in Shanghai in 1915 there were over 100 medical missionaries present and several important events occurred during or following this meeting.

Joint Terminology Committee

A preliminary meeting arranged by the Kiangsu Educational Association was held, and, in February 1915, the Joint Terminology Committee was formed and its first meeting arranged for August, 1916. This was followed by a meeting in January, 1917, and these meetings continued thereafter annually, with one exception, until 1929, when the work of this committee was completed and turned over to the Government. Much could be said in regard to the fundamental importance of the work of this committee which standardized medical terms for China. It was composed of representatives from the Kiangsu Educational Association, the China Medical Missionary Association, the National Medical Association and the Medical Pharmaceutical Association (students returned from Japan) and Chemical Society, together with a representative of the Educational Department of the Government.

Rockefeller Foundation Commission

In 1914 a commission of the Rockefeller Foundation arrived to study the medical situation in China. In June, 1915 an agreement was made between the China Medical Board of the Rockefeller Foundation and the London Missionary Society in regard to the Union Medical College in Peking, and the C. M. B. formally took over this institution on July 1st. 1915

NATIONAL MEDICAL ASSOCIATION

The National Medical Association was formed in 1915 and its first meeting, at which there were fifty-five members present, was held in February 1916.

AMALGAMATION OF MEDICAL SCHOOLS

In the autumn of 1915 another Rockefeller Commission visited China and made several recommendations regarding medical education. They not only planned to begin a new school in Peking on the basis of the Union Medical College, but they definitely planned to start a school in Shanghai. Land was purchased, but the plans for this school were later abandoned. As a result of their recommendations, in June, 1916, there was an important meeting of the Executive Committee and the Council on Medical Education of the C. M. M. A., at which there were several others present by invitation. At this meeting it was unanimously decided to advocate the closing of the medical schools at Nanking and Hankow and the uniting of all the mission forces of East China in the school at Tsinan. At the joint conference of the C. M. M. A. and the National Medical Association in Canton, in 1917, it was reported that there were twenty-six medical colleges in China, with 1500 students, of whom 136 were women. The University of Nanking Medical Department closed in 1917, and two of their teachers and most of their students went to Tsinan. The Hankow Medical College transferred two teachers and their students to Tsinan a year later. Three classes of the Union Medical College, Peking, and one teacher were already in Tsinan, so that the School of Medicine of Cheeloo University is practically a combination of the Nanking, Hankow and Peking schools with the original Tsinan school, though not all of the original cooperating missions are now in the union. Later, in 1923, the North China Women's Union Medical College united with the Cheeloo School of Medicine and transferred teachers, students and funds to Tsinan.

MISSION MEDICAL SCHOOLS

Name	*No. of Teaching Staff, 1929-30*				*No. of Students 1929-30*	*No. of Graduates*	*Co-education*	*Language*
	Chinese	Foreign	Full Time	Part Time				
Hackett Medical College, Canton	20	14	25	9	67	187	No	Chinese
St. John's University School of Medicine, Shanghai	14	11	5	20	37	99	No	English
Mukden Medical College	17	12	27	2	95	164	Yes	Chinese
Shantung Christian University (Cheeloo) School of Medicine, Tsinan	16	16	32	0	88 (Pharmacy 13)	241 (Pharmacy 11)	Yes	Chinese
West China Union University, Medical and Dental School, Chengtu	12	27	Med. 20 Dent. 8	8 3	Med. 33 Dent. 14	Med. 37 Dent. 4	Yes	Chinese English
Women's Christian Medical College, Shanghai (1930-31)	16	14	12	18	30	8		English

Present Mission Medical Schools

other mission medical schools were closed at this time or before, and Hangchow and Hunan-Yale were forced to close in 1927. The latter reopened in 1929, taking in a pre-medical class. Up to date 55 students have graduated from the Hunan-Yale Medical School. At present the number of mission schools is represented by the (foregoing) list (see page 11).

The difficulty of obtaining money and personnel to equip and carry on properly a modern medical school makes it extremely unlikely that any attempt will be made to increase this number. None of these six schools have at present an adequate staff or endowment to carry on the work which they should do, and some are far below the desired standard. Still further reduction, by amalgamation of certain of these schools, would make for greater efficiency.

Non-Mission Schools

Of the three foreign-supported non-mission schools, the P. U. M. C. is fully equipped and endowed, the Japanese school in Mukden is said to be adequately staffed and supported and the Hongkong University School of Medicine, with the recent grant from the British Indemnity Fund, is well provided for.

PEKING UNION MEDICAL COLLEGE

No. of Teachers 1929-30		*No. of Students 1929-30*		*No. of Graduates*		*Co-education*	*Language Used*
Chinese	Foreign	Regular	Special & Graduate	Before 1924	Since 1924		
65	26	93	104	105	65	Yes	English

(Grads. of classes of 1919, 1920, 1921 (43) also counted as graduates of Cheeloo)

HONGKONG UNIVERSITY SCHOOL OF MEDICINE (British)

Date of Founding	*No. of Teachers 1929-30*	*No. of Students 1929-30*	*No. of Classes Graduated*	*Language Used*
1912	23	160	15	English

MANCHURIA MEDICAL COLLEGE, MUKDEN (Japanese)

Date of Founding 1929-30	*No. of Teachers 1929-30*	*No. of Students*	*No. of Classes Graduated*	*Language Used*
1911		638	13	Japanese

GOVERNMENT SCHOOLS

In regard to the purely Chinese-controlled schools, supported by central government, provincial or private funds, it is very difficult to obtain at present exact data as to equipment and resources. The appended list* is from the 1930 official statement. Many of these schools are very far below par and most of them are inadequately equipped, but the National Central University Medical School at Woosung has a strong staff and high standards and, with the necessary financial assistance from the Government, should soon become a first class institution. As with mission

*See pages 14, 15.

CHINESE GOVERNMENT MEDICAL SCHOOLS

Name	*Date of Founding*	*No. of Teachers 1929-30*	*No. of Students 1929-30*	*No. of Classes Graduated*	*Language Used*
Army Medical College, Tientsin. (Moved to Peking 1918)	1901	26	320	13	English Japanese German Chinese
Aurora University Medical School, Shanghai (private)	1902	10	69	10	French
Chekiang Provincial School of Medicine and Pharmacy, Hangchow (closing 1931)	1911	24	83	19	Chinese English German Japanese
Chungshan University Medical Department, Canton	1927	40			Chinese German
Hopei University Medical College (Provincial)	1921	19	94	3	Chinese German
Kwang Wah Medical College, Canton (Private)	1909	53	292	19	Chinese
Nan Yang Medical College, Shanghai	1914	70% full time 30% part time	400	10	Chinese
National Central University Medical College, Woosung	1927	30	53		Chinese English

CHINESE GOVERNMENT MEDICAL SCHOOLS

Name	*Date of Founding*	*No. of Teachers 1929-30*	*No. of Students 1929-30*	*No. of Classes Graduated*	*Language Used*
Naval Medical College, Tientsin (originally Dr. Mackenzie's school. 1881, then Peiyang Medical College, 1893)	1915	12	12	15	English
National Peking University Medical College (reorganized 1912, and 1927)	1903	over 30	240	9	Chinese
Tung Chi University, Medical Department, Shanghai	1907	17	200	22	German
Tung Nan Medical School, Shanghai	1926	30	280	120 graduates	Chinese
Tung Teh Medical School, Shanghai (private)	1918	16	150	10	Chinese German
Yunnan Army Medical College	1920	24	56	1	

medical schools, so it has been with the government schools, a great many have sprung into a nominal existence but have sooner or later died.

Research

The Rockefeller Foundation scholarships and the post-graduate instruction given by the P. U. M. C. are a great aid to young Chinese teachers, and the Lester Institute will prove a valuable stimulus to advanced research.

An important part in the proper training of medical men and women is being played by the increasing number of well equipped hospitals where young graduates may obtain competent instruction in the practice of their profession.

Training of Nurses

This report would not be complete without a statement of the remarkable progress made in nursing education in China. As is well known, it was difficult for the pioneers in the nursing profession in the West to break down the prejudice and opposition they encountered. This prejudice was even stronger in China. The first regular School of Nursing was begun in Peking in 1905. The Nurses' Association of China was organized in 1914. At present the number of registered schools in the N. A. C. is 136, all but nine of which are located in mission hospitals. There are over 2000 registered nurses besides, probably, several hundreds who are not registered. The N. A. C. has a Committee on Translation which has prepared a very complete list of necessary text books.

In recent years there has been awakened a great interest in the important work of training midwives, notably in Hangchow, Peking, Canton and other centres.

Pharmacists, Hospital Technicians and Dentists

There is a School of Pharmacy in Shanghai, and pharmacy students are taught in Cheeloo and Hackett.

There is also a School for Hospital Technicians connected with the Union Hospital at Hankow, and technicians are being trained in other centres. So far as we know, there is but one School of Dentistry at the present time, that at Chengtu.

As we look back over the history of the development of educational work in medicine and the allied professions, though we could wish that more had been accomplished, we are bound to recognise that notable progress has been made, and we can look forward to the future with confidence that if, and when, peace and prosperity come, the teaching and the practice of medicine in China will be placed upon a high professional and ethical plane.

[From "The Chinese Recorder," June 1934.]

Medical Missions in China*

R. T. SHIELDS, Cheeloo University, Tsinan, Shantung

NO comment is needed on the "Situation and Needs" as outlined in Section I of the Report, as we are all familiar with the facts there presented. "For the inception and early spread of modern medicine missionary influence has been almost solely responsible." The C.M.A. list (1931) gives only 304 foreign missionary doctors; there has been a decrease of 18% since 1926/27. Practically all of these medical missionaries have had a first-class education, but many are "often far from abreast of recent knowledge and methods."

"In the development of medical education missionary influence has been dominant." Table I gives interesting statistics regarding medical schools. Table II gives the distribution of graduates of mission medical schools. "As members of a hospital staff graduates seemed to be working satisfactorily. As practitioners their work was disappointing." More should be done by the medical schools to develop their graduates by giving post-graduate instruction.

The comments on the non-mission medical schools agree with Dr. Faber's report. "There are two or three of these eleven Government schools which compare in quality of work with mission institutions." "The number of students is in inverse ratio to the excellence of the school." "After visiting these low grade private and Government medical schools one realises the distinctive service which mission medical schools offer."

Only one School of Dentistry exists in China, that in Chengtu, Szechuen. Other such schools should be organised. The same condition obtains in regard to Pharmacy—the only proper course is now given at Tsinan, unless the French School in Shanghai be considered.

"Missionary influence has been outstanding in the devleopment of modern nursing in China." There are 256 foreign missionary nurses. Years ago they organised the Nurses' Association of China. There are 136 registered schools of nursing, all but five being in mission hospitals. "Missionary trained nurses are products of which to be proud." Table IV gives a distribution of these nurses.

Many mission hospitals are training midwives, but the outstanding school for these workers is under government auspices in Peiping, conducted by Dr. Marion Yang.

Table V gives the distribution of mission hospitals in 1931, and Table VI general data concerning the 235 mission hospitals. It will no doubt surprise one who has not studied the question to note that out of seventy-one hospitals reporting, the bed occupancy was

*Brief review of the chapter on "Medical Missions" by Dr. W. G. Lennox, Fact Finders' Report, *China*, Volume 5, Part 2.

only 53%, and in small hospitals much less, whereas in U.S.A. the occupancy is 65%.

The proportion of funds from foreign sources has steadily decreased and patients' fees have made up the balance, being now reckoned at 69%. There is danger the hospitals may be forced so to raise fees that very little charity work can be done for the absolutely poor.

Table VII, comparing statistics of 200 hospitals in 1919 with 120 in 1930, shows a marked increase in equipment and facilities for work in mission hospitals. The reports regarding laboratory examinations were very good and 88% reported in-patient records, 71% out-patient; but as to the completeness of in-patient records, Dr. Lennox says "In only a handful of hospitals were they comparable to the usual public hospitals in America."

As to evangelistic work, 111 doctors answered the following question. "In your work as medical missionary which do you regard as the most important, the proper medical care of the patient or efforts towards his evangelization?" Sixty-seven percent replied that both were equally important; 29% that medical care was more important; and only 4% that evangelization was more important.

The Central Hospital at Nanking and the two National University Hospitals were first class. "These three about exhaust the list of good Government Hospitals." Provincial, municipal, philanthropic and private hospitals were all below the standards of mission hospitals in the same locality. The only exceptions were in port cities manned by men trained abroad. Four Japanese hospitals were visited—wards usually in disorder, though crowded "because of the specialization, the cheapness and freedom of life in the wards."

Lennox points out the serious lack of sanitaria for treatment of tuberculosis on the part of mission and other agencies, and in contrast to this their activity in the care of leprosy. The only effort to care for the insane has been initiated by the missionaries.

As to Public Health Work, mission hospitals have done something in the examination and care of students, inoculations and vaccinations, and indirectly by the cultivation of public opinion on health matters.

"The Council of Public Health Education, fostered by missionaries, did a huge amount of pioneer work. More spectacular has been the part played by missionaries in times of peril caused by epidemics." The Government is seriously attempting work in Public Health, through the Central Hospital and Field Demonstration at Nanking, the Midwifery School in Peiping, the Epidemic Prevention Bureau and laboratories in Peiping.

Section III, "Opinions on the data collected." The position of medical missions will not be so favourable in the future, due to the growth of private and government agencies...."There can be no doubt of the gain to the Church of hospitals—organisations have

grown up which are too expensive and too technical for the churches to handle and are oft-times too deeply rooted in sentiment to permit of consolidation or transfer" . . . . "There is a greater need for quality than for quantity . . . . if resources remain as at present, the call of unoccupied places will require consolidation, or withdrawal and relocation of some of the units. Of the places visited, opportunities of consolidation and federation exist at Hankow, Swatow, Canton, Ningpo, Foochow and Peiping. On the part of thirteen mission bodies there exists a wasteful duplication of effort in the presence in twenty-two localities of separate hospitals for men and women conducted by the same denomination. There was excuse for this condition fifty years ago, but now there is none." There is no doubt but that there must be more consolidation of our work in order to make it more efficient.

The suggestion of Dr. Lennox that there should be "some form of village or rural work" should be carried out. Travelling dispensaries or out-stations might be connected with central hospitals, and this is now being attempted in certain places.

As to the very important matter of preventive medicine, Dr. Lennox says very properly, "Preventive work is largely outside the doctor's domain and control. Public health implies public laws and is more properly a function of Government. Health education requires the cooperation of educational authorities." However, there is a great opportunity here for the mission hospitals to cooperate with the government agencies.

In order to maintain existing institutions, there should be an increase in the total number of doctors. "Each foreign and Chinese doctor cares for ten bed patients and fourteen dispensary patients each day, in addition to various other duties—he is able to do this by dint of doing superficial work." "It is a question whether missions should aim simply at volume—either the staff should be increased or the volume of work reduced."

The present situation two years after Lennox's Report, in regard to reinforcements and finances, leads one to believe that neither the one nor the other will be sufficient to maintain all existing hospitals at the proper level of efficiency. The mission boards interested should consider increasing the quality of mission hospitals by reducing the quantity. As Chinese agencies become better able to improve the quality of medical work done, many mission hospitals will find themselves at a disadvantage and they will become a handicap rather than an aid to the Christian cause. The same arguments are true in regard to mission medical schools. Only the best possible is worthy of the cause we represent.

"The Mission Hospital is of strategic importance in the spread of modern medicine . . . . It is a demonstration and education center . . . . It serves to introduce doctors into interior places." . . . "The plans of the Government call for the introduction of State medicine. Mission hospitals are in step with this policy. At the same time

they have a duty to neighbourhood practitioners, a duty imperfectly discharged. . . . "The best opinion seems to be that missions should leave the lower grade class of education to the Government, and that whatever work is done in medical education should be well done." We would like to emphasize this point.

"Graduates of mission schools have spent more than half their time in mission institutions. . . . "The nett cost of one medical school is as much as that of six hospitals. Existing schools should have needed ~~medical~~ support, even at the cost of closing the required number of hospitals." . . . "We cannot quarrel with the budget on which mission hospitals operate—per dollar of total cost the mission hospitals do eight times as much work as the large charity hospitals of Boston. In view of the increasing budget of hospitals, unless income from abroad also increases, some hospitals will need to close." . . . "On the average the missionary institutions excelled in the quality of professional service, in medical equipment and its use, in the nursing care of patients . . . in the human interest in patients, and in the stability of the work." . . . "The average mission hospital has been in active service for twenty-eight years. Chinese philanthropic efforts are often a flash in the pan!"

RECOMMENDATIONS OF APPRAISERS

"The difficulties with which mission hospitals in China have to contend . . . are to be found in the lack of a central co-ordinating agency, clothed with executive power, familiar with problems peculiar to the work and expert in solving them . . . . Missionary doctors have pointed out this need and spoken of their earnest hope that in time some such central organisation might develop."

One cannot close this brief review of Dr. Lennox's careful and fair survey without referring to certain statements contained in "Re-Thinking Missions," which was supposed to be based upon the work of the Fact-Finders and the Appraisers. After reading the findings of both these groups, it is difficult to see how, in "Re-Thinking Missions," the following statements are made (page 201): "The impression gained from our study of the clinical work of American Missions in the Orient was *in general* one of disappointment . . . . *too often* inferior to the near-by Government and non-missionary hospitals.[1] The story of a "typical American Missionary Hospital" is too long to quote here in full. "He can easily handle 50 an hour" . . . . "Many prescribe for 500 or even 1000 out-patients in one morning." Lennox says the *average* number seen daily is fourteen!

The writer has not seen the volumes of the Fact-Finders' and Appraisers' Reports on India. These reports may give the basis for the broad statements as to the Orient which are manifestly not correct for medical missions in China.

1. See Lennox, page 202, as quoted in this article.

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MEDICAL EDUCATION IN CHINA*

RANDOLPH T. SHIELDS, M.D.

I

THE EARLIEST chapters of the history of medicine in China are shrouded in the mists of four thousand and even five thousand years ago.

The first treatise on medicine[1] is said to have been written in the twenty-ninth century B.C. by the legendary emperor, Sheng Nung, now revered by the Chinese as the God of Medicine.

About two hundred years later another legendary emperor, Huang Ti, is believed to have written of diagnosis and the pulse. By careful observation of the rate and character of both radial pulses various diseases were diagnosed and proper medical or surgical remedies applied. To Huang Ti are also ascribed works on acupuncture, which is discussed more in detail later.

Until the establishment of the Chou dynasty in the twelfth century B.C. there are no authentic medical records, only legends. During these ancient days medicine was mixed with religion, the priest and the doctor being usually the same individual.

By the time of the Chou dynasty, priests and doctors were separate people. Medicine was still dominated, however, by philosophical speculation and not by scientific observation. About the middle of the Chou dynasty there lived three of the greatest Chinese philosophers—Confucius, Mencius, and Lao Tze.

During this period the "science" of medicine was mixed up with the principles of "yin" and "yang," a position which even Confucius accepted (Fig. 1). It is impossible for us to understand all the intricacies involved in the "yin" and "yang" concept. They were opposites—they were complements—the male and the female principle. The universe is made up by the union of "yin" and "yang." All life consists of "yin" and "yang" principles. Some organs of the body are "yin," and others "yang," and therefore diseases are classified as "yin" and "yang" diseases.

In addition to "yin" and "yang," the "five elements"—metal, wood, water, fire, earth—all entered into the composition of all substances. The body was an harmonious mixture of the five elements.

The "Nei Ching," or canon of medicine, is traditionally ascribed to the emperor Huang Ti, though it was probably written at the end of the Chou dynasty in the third century B.C. It is interesting to note that the Nei Ching states that "the heart regulates all the blood of the body" and

* The position of medical education in China, as described in this article, is based upon the situation prevailing during the first half of 1937, before the development of the present conflict. Just how seriously this conflict will disrupt the whole program of medical education in China it is still too early to predict. During the last half of 1937 practically all medical schools and hospitals in the bombed and invaded areas were affected by these military developments. A number of the hospitals and medical schools mentioned herein have been so seriously injured that they have been compelled to close temporarily and transfer students and staffs to locations further inland. The author, who is Dean of the School of Medicine, Cheeloo University, Tsinan, was in Tsingtao during the bombardment of Tsinan, but returned to Cheeloo about January first.—EDITOR

[1] The historical facts in this article are taken from Drs. Wu and Wong's *History of Chinese Medicine*.

that "the blood flows continuously in a circle and never stops." There are other ideas in the Nei Ching in regard to anatomy and physiology, and one authority gave measurements and weights of the different organs of the body though there is no direct evidence that dissection was actually practiced.

As far back as the Chou dynasty there seems to have been some attempt at organization of medicine. There were physicians, surgeons, dietitians, and veterinarians. One finds references to preventive medicine in such sentences as: "The sage does not treat those ill, but those well." Hospitals for various classes of sick people are also mentioned.

During the Han dynasty (206 B.C. to 220 A.D.) more emphasis was laid on observation. In this dynasty lived three great Chinese physicians whose names are revered to this day. Ts'ang K'ung wrote case histories, though they are not to be compared with those of Hippocrates for they have little scientific value. He used drugs, acupuncture, and hydrotherapy. Chang Chung Chin composed volumes on typhoids and other fevers, wrote regular prescriptions, and advised enemas of pig's bile. He evidently had keen powers of observation and very high ethical ideals. After his death scientific medicine degenerated and there were no later writings of any value until the Sung dynasty (960-1279 A.D.) Hua T'o, often called the God of Surgery, is credited with many remarkable operations, as well as the use of "narcotic wine," and "effervescing powder" as anaesthetics. He probably used species of datura, rhododendron, jasmin, and aconite in his anaesthetic mixtures.

Acupuncture, as mentioned above, was probably practiced in very ancient times. In the T'ang dynasty (619-907 A.D.) there is reference to a professor of this subject. The practice of acupuncture was carried to Japan at an early date, and in the seventeenth century was introduced into Europe. Acupuncture is practiced by driving long sharp needles into the part of the body where there is pain or where the seat of the disease is supposed to be located. The favorite locations for this operation are shown in the accompanying photograph (Fig. 2) of a model used to instruct surgeons in technique. The depth to which these needles are driven depends upon the nerve of the operator and the courage of the patient. As these needles are never sterilized, serious and sometimes fatal cases of joint and abdominal infections are often brought into modern hospitals as a result of the treatment.

Early Chinese practitioners also used counter-irritation by burning on the sky a cottony material, moxa, prepared from Artemisia moxa. Massage was also employed in ancient times.

The "Pen Tsao Ching" is a remarkable set of books. The first edition is ascribed by tradition to Sheng Nung, twenty-ninth century B.C. Various treatises or commentaries on this were written later. In 656 A.D., the Emperor appointed 22 men to revise the Pen Tsao Ching and they produced a work of 53 volumes. In the Ming dynasty, the Pen Tsao K'ang Mo was begun in 1552 and finished in 1578. This work, consisting of 52 volumes, was done by a father and son and published in 1595. The substances treated in this book are divided into 16 classes, such as water, fire, earth, metals, vegetables, insects, fish, birds, beasts and

men. There are 1871 different individual substances mentioned: 1074 from plants, 443 from animals and the rest from minerals. There are also 142 drawings and 8160 prescriptions in this work, which is now the Materia Medica of Chinese doctors of the old school. Part of it was translated by Dr. George Stuart, who, however, died before he had finished the whole work.

In the Ming dynasty (1368-1662 A.D.) medicine was divided into five sects which may be called the Yin, Yang, Radical, Conservative, and Moderate schools. The decline of Chinese medicine began in this dynasty. The profession was divided into still more sects during the Ch'ing dynasty (1662-1911 A.D.).

Medicine was one of the phases of Chinese culture which greatly influenced the surrounding nations of Asia. There were many translations of Chinese books made in Japan, for example. In 982 A.D., Yashuyori wrote the I Shin Ho, said to be the oldest Japanese book in existence. This book gives symptoms, diagnoses and carefully written prescriptions which remind one of the prescriptions given in western textbooks 30 years ago.

The coming of Buddhism into China in 67 A.D. brought many medical as well as new religious ideas to be mixed in with the Taoist practices of incantations, magic, etc.

II

Medical education in China may be said to have started in the T'ang dynasty (619-907 A.D.) during which period an Imperial Medical College was founded with a staff of officers and 300 students. This school was abolished in 1166 and reëstablished in 1191. Other schools were established by imperial edict in the Sung dynasty (960-1279 A.D.).

Medicine, surgery and acupuncture were taught, the curriculum consisting of diseases of adults and children, midwifery, fractures and wounds, acupuncture, charms and incantations. Students were supposed to know the structure of the body and materia medica, an assumption which seems fallacious because there is no record of their having studied dissection, or chemistry or botany. Examinations consisted of written, oral and clinical parts. State medical examinations were in existence as early as the tenth century B.C. The work of doctors was examined and their salaries fixed according to the results shown. If only one out of ten patients had died, for example, the attending doctor received a good mark and correspondingly high compensations; contrarily, if as many as four out of ten died his grading and salary were low. In 1317 A.D. competitive examinations similar to those held for literary and official appointments were first applied to the medical profession. The examinations were conducted over a three-year period in progressively difficult stages, the last stage eliminating the majority of candidates. The survivors of the final examination were then divided into three grades: court physicians, assistant examiners, and teachers. Medical candidates, including women doctors, who were first recognized by the profession in the early fourteenth century A.D., had to be over 30 years of age, of good medical knowledge and of high moral character, and esteemed by their friends.

The teacher-student relationship in medical schools carried severe penal-

ties for the former: If students did not attend school regularly, the teachers were fined. If the teachers were lazy or incompetent, they were either fined or dismissed, or both.

Despite state and competitive examinations and the establishment of medical schools by imperial edict, there was very little regulation of practices by the profession, and no attempt was made at government supervision until recently. As Morse says, it was "one grand free for all profession, with no registration or code of ethics whatever." Medicine was looked upon as a more or less second-rate business. No ethical standards were followed, though formerly there were some very good rules, such as the "Five Don'ts," which applied to such things as the avoidance of delay in paying a call on poor and rich alike, the propriety of having a third person present when attending a woman patient, and care in compounding prescriptions, not substituting other substances for pearls, etc., given by patients to be dissolved in the medicine. Coolies, old women and incompetent men started medical practice on the slightest provocation and usually supported only by one or two old medical treatises. But there was, of course, more confidence in those who had descended from medical families. The patient called one or more doctors depending upon his economic status and each doctor prescribed his medicines without consulting the other attending doctors.

As we have stated, there has been a distinct decline in Chinese medicine from the time of the Ming dynasty (1368-1662 A.D.). At present, anyone may prescribe drugs, which are readily accessible in the old-style shops dealing in all sorts of vegetable, animal and mineral substances. The drugs are used according to the ancient methods, with incantations and a good amount of magic and superstitious practices involved.

III

Modern medicine may be said to have begun in China in the early nineteenth century, but the Western influence on Chinese medical history was first noticeable in the sixteenth century with the coming of the Jesuit missionaries. One of the first of the Jesuits was Ricci, to whom may be credited the introduction of modern medicine along with religion and science. It is a well-known fact that the Jesuits cured Emperor K'ang Hsi (1655-1723 A.D.) of malaria by the use of quinine. Father Parrenim translated an anatomy in the seventeenth century and also works on chemistry, toxicology and pharmacology. Several other priests practiced medicine in the seventeenth and eighteenth centuries, but the Catholic missions did not send qualified doctors, the priests doing what they could to aid the people medically. It is interesting to note that inoculation with human virus was used by the Chinese for smallpox about 1000 A.D.

In 1805 Dr. Pearson of the East India Company first introduced vaccination and later opened an ophthalmic hospital in Macao. These were the beginnings of true "modern" medicine. Some fifteen years later the first dispensary was opened in Macao by Dr. Livingstone of the East India Company and Morrison, the first Protestant missionary to China.

Dr. Peter Parker was the first regular medical missionary to come to China. He was sent out by the American Board Missionary Society to Canton in 1834 and founded the Canton Hospital and, with Bridgman and Colledge of the East India Company, started the Medical Missionary Society of China in 1838. He also opened a hospital in Macao and began the teaching of students.

The London Missionary Society in 1839 assigned Dr. Hobson to medical work in China. Dr. Hobson is known as "the first medical book-maker for China." His "Outline of Anatomy and Physiology," published in 1850, was the first book of its kind written in Chinese.

Dr. John G. Kerr of the American Presbyterian Mission came to Canton in 1854, taking charge of the Canton Hospital when Dr. Parker was appointed American Minister to Peking. Dr. Kerr was connected with Canton Hospital for thirty years during which time he produced a prodigious amount of work: Over 500,000 patients passed through his, or his assistants', hands; he is credited with having performed over 1000 operations on bladder stone; he had more than one hundred students, and translated or compiled twenty-seven books, including the six-volume "Manual of the Theory and Practice of Medicine"; he also founded the first Refuge for Insane, in 1898.

There are many others who were outstanding in clinical work, but in this brief article, we must confine ourselves to the educational leaders. Passing mention also should be made to Dr. Osgood, who published the first large translation of anatomy; to Dr. Mackenzie of the London Missionary Society who in 1881 with Li Hung Chang, his patron, founded a medical school in Tientsin; to Dr. Combs, who came to Peking in 1873 as the first woman medical missionary.

Besides the teaching work done by Dr. Kerr and others, schools were founded between 1880 and 1900 in the following places: Tientsin, Shanghai (later the medical department of St. John's University), Soochow, Mukden, Hangchow, Nanking, and Hongkong.

The Medical Missionary Association was founded by the Protestant missionaries in China in 1886 and a journal begun, first as a quarterly, then as a monthly. This is now amalgamated with the *Journal of the Chinese Medical Association*.

From 1834 to 1887 there had been 150 medical missionaries all told in China. Between 1887 and 1890, 46 more arrived. The pages of the medical journal after this period are full of articles dealing with medical education. A much disputed question was whether English or Chinese should be used as the medium of instruction. Translation work and the need of a uniform terminology was emphasized. In 1890, Dr. Kerr wrote a paper in which he outlined the need for medical education: (1) to provide qualified physicians for the mass of the people; (2) to train assistants for mission hospitals; (3) to train teachers. He said: "The education of physicians and surgeons for the people of this great empire is a subject of the utmost importance and one which may well engage the attention of the medical profession of the world," and he advocated that teaching should be

carried on in the Chinese language.

After 1900, there was a marked increase in the number of medical schools. The Hackett Medical School for Women had been begun in 1899. A school was started in Hankow in 1902. In 1906, the Union Medical College and the Women's Medical College, as well as a School of Nursing, were opened in Peking. The Hankow College became the Union Medical College in 1908. Nursing schools in Nanking and Anking were opened in this year. The Kung Yee Medical School in Canton was started in 1909. 1910 saw the opening of the Tsinan Union Medical College and of the Medical Department of Nanking University. In 1911, the Mukden Medical college was opened and steps were taken to organize a medical college in Chengtu, Szechuen. The Harvard Medical School, Shanghai, was started in 1912. The Pennsylvania Medical School joined St. John's University Medical School in 1914 and the Hunan-Yale Medical School was organized the same year. At this time, the nine leading mission medical schools in China had 300 students. At the conference of the Medical Missionary Association in Shanghai, in 1915, there were over 100 medical missionaries present and several important events occurred during or following this meeting. The Joint Terminology Committee was formed at this time and the first meeting was held in August, 1916. This committee was composed of representatives from the Kiangsu Educational Association, the Chinese Medical Missionary Association, the National Medical Association, the Medical Pharmaceutical Association (students returned from Japan), and the Chinese Chemical Society, together with a representative of the Education Department of the Government.

In June 1915, an agreement was made between the Rockefeller Foundation and the London Missionary Society, in regard to the Union Medical College in Peking, and the Rockefeller Foundation took over this institution on July 1st, 1915. The National Medical Association (a purely Chinese body) was formed in 1915, and, at its first meeting, held in February 1916, there were 55 members present. In 1932, the National Medical Association and the old China Medical Missionary Association, amalgamated to form the new Chinese Medical Association, whose membership is not limited to any nationality. At the 1935 meeting there were 2400 members reported as belonging to the Association. This Association has the usual councils on Medical Education, Hospital Standardization and Publication, etc.

In 1916, the Rockefeller Foundation, in addition to their school in Peking, planned to start a school in Shanghai. For this and other reasons, the Medical Department of the University of Nanking closed in 1917, some of its teachers and students going to Tsinan. The Hankow Medical College did the same thing in the following year. Three classes of the old Union Medical College, Peking, and one teacher were already in Tsinan, so the School of Medicine of Cheeloo University is practically a combination of the Nanking, Hankow and Peking schools, with the original Tsinan school. Later, in 1923, the North China Women's Union Medical College united with the Cheeloo School of Medicine and transferred teachers, students and funds to Tsinan.

At present, there are three foreign-supported non-mission medical schools in China: the Peiping Union Medical College, of the Rockefeller Foundation, the Japanese school in Mukden and the Hongkong University School of Medicine.

In 1935, the *China Medical Journal* reported 30 medical schools in China, of which 15 were listed as private and the others as government. (Of these the Medical Department of Hongkong University is purely British and the Japanese Government has a medical school in Mukden.) The curriculum, as prescribed by the government, requires six years after graduation from a senior middle school, for the higher grade colleges, and four years after high school, for the second grade medical schools. The majority of colleges listed claim to belong to the higher grade. It is interesting to note that the language of instruction in these schools is given as follows: Chinese, 14; English and Chinese, 7; English, 4; German and Chinese, 1; German, 1; French, 2; Japanese, 1. All except three of these schools have been founded since 1900, and 13 of them since 1920. Only eleven of the schools have more than 30 teachers, and in only three schools are all teachers on full time. Registration in 28 medical schools show enrolments totaling 3616 students, of whom 636 are women.

With the present irregularities as to legal requirements and registration of doctors and of hospitals, it is impossible to obtain accurate statistics, but the most reliable figures available list 430 hospitals in China. Probably one-third of these would not be recognized as hospitals by an investigating committee. The majority of the hospitals are well-equipped and staffed, with a bed capacity of approximately 20,000. The number of doctors is given as between 5000 and 6000, but there are hardly that number of properly qualified modern physicians. The tragic piece of data is that there is *one doctor to every 80,000 persons* in China. About 90 per cent of the total doctors are Chinese. The old style non-scientific medicine is still practiced by thousands of "doctors" throughout the country. Time and the growing education of the masses will no doubt ultimately eliminate these practitioners.

IV

The Protestant missionary societies conduct six medical schools, the scope of whose activities is too great to chronicle here. We may take the Cheeloo Medical College, with which the writer is connected, as an example of what such international medical missionary institutions are doing. Although only 350 doctors have been graduated from this school in twenty years, their influence cannot be estimated by the smallness of their number. They are helping to operate over 60 of the best mission hospitals in the country and in many cases they are acting as superintendents of these hospitals. Since the Government has begun its program of public health work, an increasing number of Cheeloo graduates are going into school and rural public health activities. One is in charge of the model centers for rural and school public health work near

Nanking. Another is head of public health work in Kansu province. Still another is the head of the Isolation Hospital in Nanking. One young woman graduate is in charge of a large maternity hospital in Nanking, and is also head of the Midwifery School of that city.

In 1935 there were 260 mission hospitals reported, 325 medical missionaries (practically all British and American), and 271 foreign nurses. These hospitals employed 530 Chinese doctors, 1000 Chinese graduate nurses, and had nearly 4000 pupil nurses in training. These figures are remarkable when one considers that thirty years ago there were probably no properly trained Chinese nurses. There are five institutions in which a regular course in pharmacy is offered.

Private practice as understood in the West is not practicable in China, except in the large cities. Doctors usually have to run their own hospitals where they can control the medical and nursing care of the patients.

There is much that could be criticized in regard to the program of modern medicine as it is seen in China today, but when one considers the vastness of the country and population and the tremendous social and economic handicaps, one cannot but be surprised at the really worthwhile progress that has been made; and most of this progress, as far as the indigenous institutions are concerned, has been made since the reorganization of the Government in Nanking in 1928. The Central Health Administration and the Ministry of Education are going ahead energetically in tackling their vast problem. There is a Commission on Medical Education of the Ministry of Education, and it has drawn up elaborate programs for the training of physicians, public health officers, school health workers, midwives, nurses, pharmacists, technicians and second and third grade medical assistants, to be used especially in rural areas. The plan is to have an intelligent assistant available for every village in the country. There is also a program for the post-graduate training of specialists and research workers.

The economic condition of the agricultural classes especially, and the fact that probably 85% of the people of China live in rural areas, makes it obvious that state medicine is the only way in which to deal with the problem. The Government has invited experts from the League of Nations as advisers on its various educational and health programs, one of the first reports on medical schools in China being that of Dr. Faber, in 1931. This report has been the point of departure for the national medical policy. The Rockefeller Foundation has also assisted in medical education, research and public health work, besides having built and endowed the Peking Union Medical College. The Henry Lester Institute for Medical Research, in Shanghai, built and endowed by a legacy from Mr. Lester, a British business man, is devoted, as its name implies, entirely to research, both in purely scientific and clinical work. The Public Health Administration is carrying out research along various lines, especially in regard to diseases found in Asia, such as Malaria, Schistosomiasis, and Kala-azar. The Government has already set up institutions for the production of various vaccines and sera.

The central offices of the National Health Administration and Central Field Health Station are located in Nanking, but their activities along the lines of training personnel, setting up health stations, curative and preventive medicine, extend throughout the whole country. Nine provinces alone recently reported 144 health stations. Millions of people are being treated by vaccination and inoculation.

It is impossible in a short article to give a description of the work now being undertaken by the central and provincial Government authorities. In no other country and in no period of history has such a nationwide program on such a vast scale been undertaken for the urban and rural reconstruction of a nation.

The medical needs of a population of 450,000,000 are tremendous and, though hundreds of students are now being trained in the various types of institutions, it will be many years before these needs can be adequately met. Even if funds were available for buildings and equipment, the lack of a sufficient number of trained teachers is an insuperable handicap at present. But when we realize what remarkable progress has been made in so few years, we can readily see that modern medicine is ultimately going to fulfill the same important function in China that it does now in Europe and America.

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Medicine in China had its beginnings before recorded history, and produced great physicians long before Hippocrates. Under the Chans the state held yearly examinations for admission to medical practice, and fixed the salaries of the successful applicants according to their showing in the tests.—Will Durant in "The Story of Civilization," Vol. I, "Our Oriental Heritage."

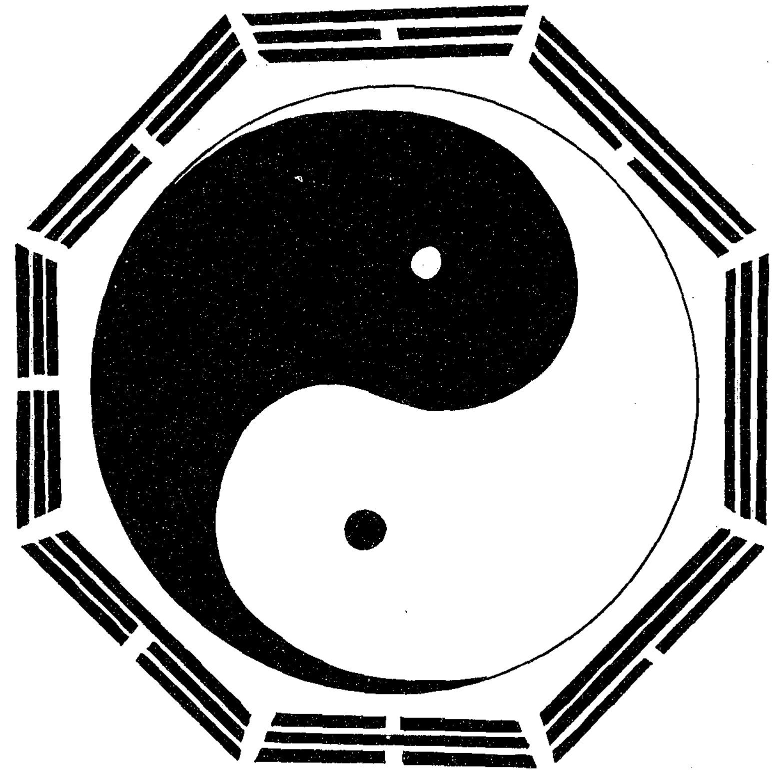


Fig. 1. The Yin and the Yang, Surrounded by the "Pa Kua" (the Eight Symbols) Chiefly Used in Divination.

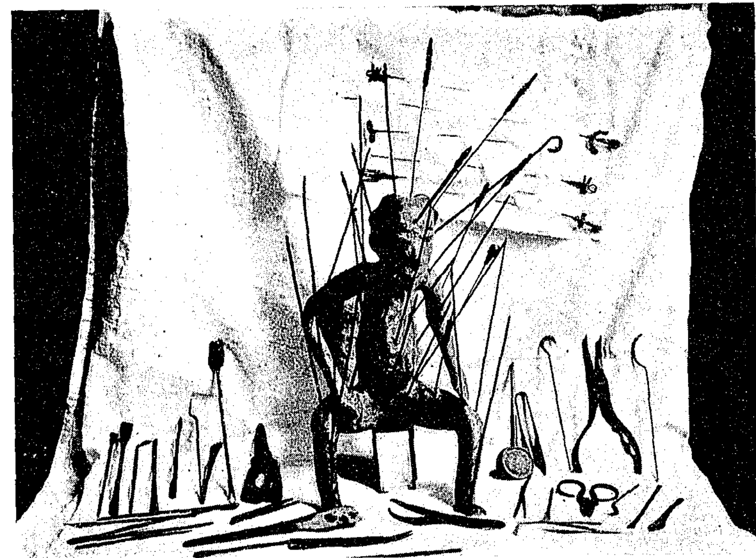
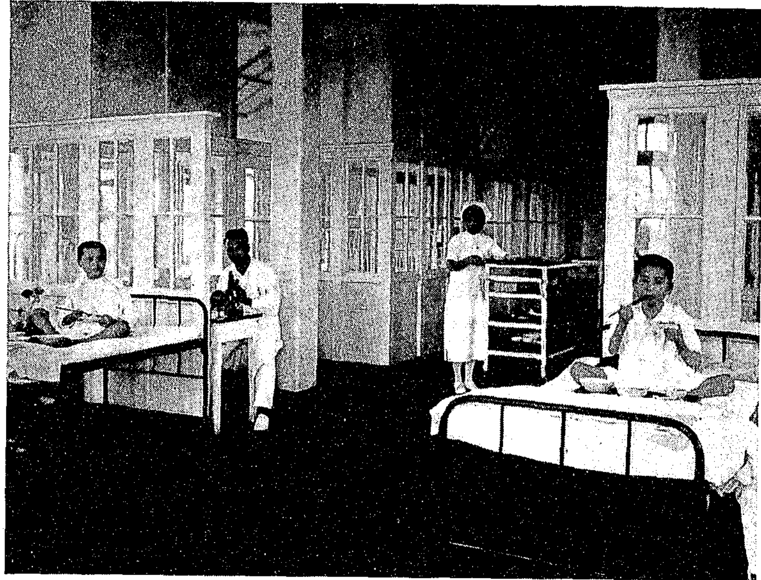
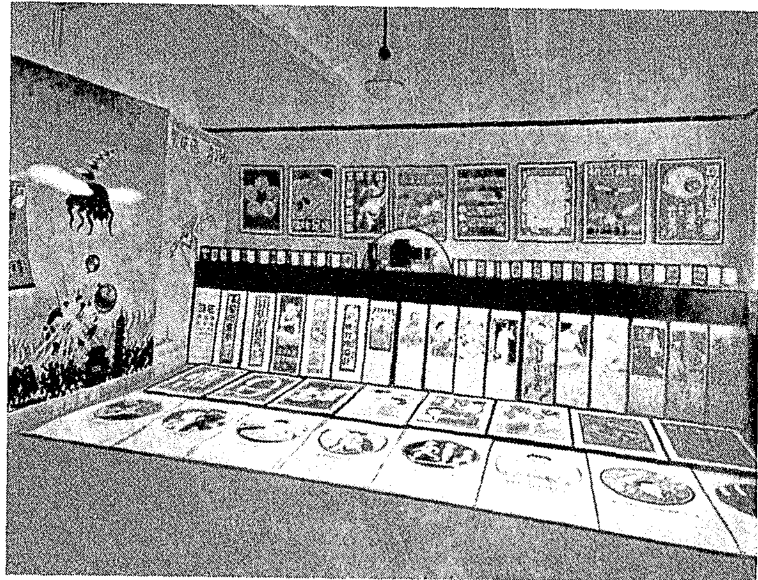


Fig. 2. Model for Demonstrating Acupuncture, as Used by the Old-Style Chinese Physicians. Some of the Actual Instruments Used Are Shown on the Sheet.



A Ward in Cheeloo University Hospital



衛生教育系編製之衛生標語圖畫
Health Posters Prepared and Printed by the Department of Health Education

MEDICAL MISSIONS*

R. T. SHIELDS

Co-operative Relations. The writer has been asked to write, within a limited time, a brief outline of Medical Missions as that work exists in China today. To present adequately the subject of medical missionary work in this country in its relation to other mission work, to the church, to the growing medical profession, and to all the various and changing phases of the life of the vast population of China, would require an amount of time and labour entirely beyond the scope of this chapter. Also no reference will be made to the history of the growth of medical missions though this is necessary to a proper understanding of certain situations now existing. The amalgamation in 1932 of the China Medical Association and the National Medical Association to form the Chinese Medical Association, should be noted, as it is an outstanding example of a real cooperation and union between a mission and a national body.

Statistics. For necessary statistics the writer has relied on the data collected by Dr. Lennox of the Fact Finding Commission, published in the C.M.A. Journal, May 1932, Vol. 46, and on the figures given in the Prayer Cycle published by the missionary division of the C.M.A. for 1932-1933. But in order to obtain opinions and not merely statistics, a list of suggestive questions has been sent to fifty doctors, several of them being Chinese colleagues, located in various parts of China. They were asked to give facts and opinions not only in regard to their own, but also other hospitals in their locality. Forty-four replies were received and as these come from representative men and women, from large and small hospitals, from Shansi to Kwangtung, from Kiangsu to Szechwan, the

*Reprinted from the China Christian Year Book 1932-33 by kind permission of the Editor.

letters can be considered as giving a fairly accurate idea of what medical missionaries think of their own work. The large majority of writers have been in China many years, but a few were purposely chosen as being "youngsters." Their opinions as regards the present value of medical misions were unanimous; on their future development, however, different opinions are held. One's viewpoint must necessarily be influenced to a certain extent by one's experience and environment. The situation must seem different to the doctor in a large well-equipped hospital in a port city from what it does to the one in a small hospital in a bandit infested region. There is a difference between being a doctor in one of several hospitals in a city, to being one in the only hospital in a province.

Manchukuo. Owing to difficulty in communications no attempt was made to get opinions from "Manchukuo". The latest figures give 18 hospitals, 27 foreign doctors, over 8000 in-patients and 200,000 out-patient treatments in the three provinces.

Number of Hospitals. Absolutely accurate figures are not available as some hospitals may not have reported and some are temporarily closed, but the number of mission hospitals (not including Manchukuo) is between 230 and 250. The number of so-called private hospitals, however, is literally legion. There are probably a score of more or less well equipped non-mission hospitals, conspicuous among them being the P.U.M.C., Central Hospital Nanking, Central Hospital Peiping, National Medical College Hospital Shanghai, Hunan-Yale, and Hongkong University Hospital.

Of 190 Hospitals reporting in the Prayer List, there were:—

Number of Hospitals	Number of in-patients
66	Less than 500
67	From 500-1000
57	More than 1000

	Number of out-patient visits
33	Less than 5000
42	From 5000-10,000
113	From 10,000-100,000
2	More than 100,000

These facts, though interesting, are not of great significance unless the individual location, age of hospital, and other conditions are studied.

Foreign Doctors. The number of foreign doctors is about 275 and the number of foreign nurses slightly less. There are at least 400 qualified Chinese doctors now working in mission hospitals. The large majority of these are recent graduates, and naturally not members of any missionary society. The graduate Chinese nurses number about 700. Nearly all hospitals have training schools for nurses.

Work Statistics. The following statistics are taken from Dr. Lennox's report. "The proportion of Chinese to foreign doctors in all mission hospitals was in 1920, 55%, in 1925, 57% and in 1930, 67%. "On the average each of the doctors (including nationals) has twenty-four beds in his charge. Each day, not allowing for furlough vacation or other duties (and counting 15 days as the average stay of in-patients) he treats 10 hospital and 14 dispensary patients". "The number of in-patients in 1930 was 178,467 and dispensary visits 3,111,467". "In the U.S. in 1930, 64 per cent of the beds in general hospitals were constantly occupied. In 82 mission hospitals reporting (with 68,441 in-patients) the average bed occupancy was 51%" "Costs of mission hospitals are probably not more than ten per cent of hospital cost in America." "As we have seen, only 26 per cent of the current expenses come from abroad. However, 83 per cent of the funds for building and equipment and 100 per cent of the foreign salaries are from this source, so that really 55 per cent (instead of 26 per cent) of the total cost of medical work is covered by gifts from abroad". "In almost every respect present-day hospitals are better equipped to render effective medical

service. There is double the amount of screening against insects. Central heat is more general". "In practically all hospitals urine and faeces can be examined. A surprisingly large proportion, 62 per cent, have facilities for testing the blood for syphilis". "The urine examinations were 21.7 per cent of the total number of patients seen and faecal examinations 18.1 per cent. This is in striking contrast to hospitals in America where urine examination is almost routine, and faecal examination almost entirely neglected". "Eighty-eight per cent of 111 reporting hospitals stated that records are kept of in-patients".

Attitude on Evangelistic Work. "Most doctors believe that in their medical service they are fulfilling an essential portion of their mission. Of 126 doctors who answered the question, 'In your work as medical missionary, which do you regard as the most important, the proper medical care of the patient or efforts toward his evangelization? The largest proportion 69 per cent, replied that both were equally important and could not be separated. Twenty-eight per cent replied in favor of the medical care of the patient and only three per cent for evangelization".

Christian Staff. "In 120 hospitals, 84 per cent of 322 Chinese doctors and of 1792 nurses are Christian".

We can now try to draw some generalizations from answers received to our questionaire. Lack of space prevents a fuller presentation of some of the interesting facts and thoughtful opinions given.

Physical Equipment. There is no question but that there has been a general improvement in buildings, screening, lighting, water, plumbing, etc. Some of these mechanical innovations involve an added responsibility for management which will be referred to again. Equipment for scientific work seems to be keeping pace with the other physical improvements. Operating rooms, X-ray outfits, modern laboratory facilities are being added, or made

more nearly complete. There is a tendency to add some books and magazines for the use of the staff, but with the exception of those of medical schools, there are probably no hospital libraries.

Professional Work. Almost all correspondents report that the work in hospitals with which they are familiar is done more efficiently than formerly. A reading of the reports of those hospitals which print them will serve to show that the quality of work done is apparently improved. Certainly there is a great improvement in the keeping of records. This improvement is due not only to better equipment, but mainly because of the increase in quantity and quality of the Chinese members of staff, doctors, nurses and technicians. This factor enables the routine work to be done more efficiently, more accurate diagnoses to be made, and allows for greater specialization for those especially adapted or trained for it. A business manager is a great asset in a few hospitals. There is a growing opinion that only women nurses should be employed with orderlies working under them. This feature was introduced in a few hospitals ten years ago and was at that time considered a rather radical departure from old customs.

Autopsies. But there is one point where custom and superstition holds up the progress of modern medicine. Practically no hospitals outside of those in the large treaty ports and those connected with medical schools report autopsies.

The opinion of correspondents is practically unanimous that except in the case of a few conspicuous non-missionary or Government institutions, the missionary hospital in general is doing much better work than other hospitals. But there are some mission hospitals, which owing to poor location, proximity to better hospitals, lack of adequate staff or equipment, are not doing efficient work, and are a credit neither to western medicine nor Christianity.

Evangelistic Work. The large majority of medical missionaries consider that the healing of the body is an

integral part of the Gospel of Christ. They do not hold the view that medicine is to be used only as a means to the end of getting people into some church. While all mission hospitals conduct some sort of evangelistic propaganda, either in the form of ward services or personal conversation, yet one is sure that most of them would repudiate any attempt to force the Gospel on the ears of unwilling patients.

Research. Though very little research work is being done directly, yet valuable contributions to the knowledge of the diseases of China have been and are now being, made by medical missionaries.

Preventive Medicine. Many hospitals are giving routine physical examinations to students of mission schools, and in some cases to those of government schools. Vaccinations are carried on sometimes on a large scale. Some hospitals have motor cars for conducting clinics in different out-stations. Posters and booklets are often used to disseminate ideas of prevention. In Szechwan, correspondents report that by the cooperation of hospitals, mission schools and churches, they have a "well balanced public health program for students". They are also carrying on itinerating extension work in the country, in which work they cooperate with the Government authorities. However, all recognize that in the past preventive medicine has been rather neglected by most mission hospitals. The reasons for this are readily seen; the lack of time to organize and to do such work after the more pressing work of the hospital is performed; the lack of personnel and of funds; and the ignorance, if not opposition, of the people. We must remember, however, that Preventive Medicine is a very recent development in western lands and was made possible only after there was an intelligent and cooperative general medical profession, a fairly well educated people, and a legal system to give authority to responsible officials. General public health and sanitation activities belong essentially to the Government, but mission hospitals can assist by example, and through education, in

their several localities; and in times of emergency created by flood, famine or war, by plague, typhus or cholera, medical missionaries and nurses have always done their bit.

Finances. There has been a gradual proportional increase of local funds compared with mission appropriations, which tendency has been greatly accelerated recently by the heavy cuts in mission grants. The majority of hospitals now seem to be almost on a self-supporting basis, except for the salaries of the doctors and nurses supported by missions. But in most cases the increase in local funds is obtained by the raising of hospital fees, and not from contributions. This fact necessarily tends to make a hospital care for the well-to-do, rather than for the poor, thus getting away from the ideal of Christian charity. This point was strongly criticised a few years ago in the Report of the medical secretary of one of the mission boards. In some selected localities it may be possible to make the fees collected from private patients make up the deficit incurred in running the general wards, but this practice evidently does not obtain in most hospitals, either due to the poverty of the constituency, or to the fact that the hospitals are not equipped and staffed to care properly for private patients. This condition should be remedied. The extent to which local contributions could be increased depends upon various factors, geographic, economic, political and personal. Many examples could be cited on both sides of the question. But the fact that contributions from local constituencies are not as great as one might expect remains as a point to be considered in discussing the future of the work.

Personnel. Most correspondents while noting and welcoming the relative increase of young Chinese colleagues, yet declare that foreign doctors are still needed. But as a rule only specially qualified doctors should be sent; those who are trained specialists, or who are capable of acting as advisors, and leaders. The western doctor who comes out as missionary should bring with him ideas

and ideals which will act as spiritual and professional stimuli to his colleagues. He comes as a gift from the Western Church to the Chinese. The hospitals were built by foreign funds, and even if in the future the support be largely or wholly Chinese, it is but appropriate that the West should be represented in the management. The western doctor is presumably a missionary; therefore his presence in the hospital makes for the continuity of the missionary character of the work. The young Chinese doctors, while most of them are Christians, and many are actuated by high ideals, are from the necessity of the case not missionaries. It is not to be expected or desired that the majority of Chinese graduates, even from mission schools, should spend their whole lives in mission hospitals. Practically all of them spend a few years in these hospitals, to the mutual benefit of both parties. They then leave for government work or private practice, and make way for younger graduates to receive the training they have had. Many remain permanently, and some are already in charge of mission hospitals.

Devolution. This topic is apparently not so much discussed as it was a few years ago. That mission hospitals will be turned over ultimately to the Chinese to assume full administrative, and financial responsibility, is taken for granted. But as to when and how, opinions differ. Some state indefinitely that the Chinese Church will take over the hospitals. Most would say that the church as such cannot take over even the smaller hospitals and keep them as they are i.e., at least partly charity institutions. There is a possible danger also in giving to a local church an institution, which by increasing fees, lowering standards, and selling drugs could easily become a source of income and be considered primarily as such.

Boards of Control. In some places local boards of control consisting of the gentry and church leaders, have been formed. Some of these are successful, some not. If such a body be responsible for the management of an institution, it must be *ipso facto* responsible for the paying

out of funds. Therefore, this body is equally responsible for the raising of funds. When the mission ceases to make a grant the difficulties of the local boards may begin. The solution of these difficulties seems to depend largely on local conditions.

Hospital Superintendents. Besides the question of money, is that of personnel. We have said that it is better to have western doctors still come to the hospitals. But should they continue to be the superintendents? Most medical missionaries would probably readily agree that it is advisable to appoint Chinese as superintendents as soon as practicable. The question of when depends on several factors such as the size of the hospital, the relative experience of the doctors on the staff, and most important, the right man. In many hospitals this plan has been adopted with apparently great success. But we must always bear in mind the social and family customs which obtain in China and which make the maintaining of authority and discipline at times so difficult. The foreign superintendent, simply because he is a foreigner, is removed from the influence of these customs, and is therefore relieved from many of the difficult responsibilities which his Chinese colleagues would have been forced to bear.

Future Policy. Looking backward over its history, and viewing the present facts of medical missions, one can say that the work has been eminently successful. It has paid from the evangelistic standpoint, it has paid in the healing brought to millions, it has paid in that it introduced western medicine to the Chinese, began the translation of medical literature, and the training of students in scientific medicine. At present, with few exceptions, mission hospitals and schools in general are considered the best in the country, and the majority of these institutions are making satisfactory progress, but not all. In view of the foregoing facts, and remembering that the missionary societies of Great Britain and U.S.A. are attempting, through various organizations, to bring about a closer cooperation and consolidation of their work, it is evident

that there must be a change of policy in regard to the medical work of these societies. In general the better and more useful hospitals, taking into consideration, size, equipment, and geographical location, should be made more efficient, at least by increasing the staff, and where necessary by making financial grants. The latter may be needed if the hospitals are to care for the poor of the community, as well as the well-to-do. As to staff there should be a sufficient number of doctors, nurses, and technicians, foreign and Chinese, all actuated by Christian ideals, and professionally prepared to do efficient work along their special lines. It should also be borne in mind that the more modernized and mechanized a hospital becomes, the more necessary it becomes to have a business manager and engineer on the staff. Except in very large institutions one man can fill both positions. There are some doctors who have enough engineering and business ability to carry on this work; but where this is done, the doctor must perforce take time away from the professional duties for which he was especially trained. It is undoubtedly true that there has been a great waste of time, of effort, and of money, because most mission institutions have not had competent men to care for the physical plants. Such strategically located and well equipped hospitals should have a number of out-stations, either dispensaries, or small hospitals connected with them, such stations being in city or country, or in both; these out-stations should be manned by less highly specialized doctors, who would care for the ordinary cases sending the more important ones to the central hospital. This scheme, with modifications, has been tried and it should be practised more widely. One important modification is by friendly cooperation with the local practitioners, to win their confidence and get them to consider the large mission hospital as their friend, and their central hospital. There is certainly going to be an increasing opportunity for helpful cooperation along this line. It is up to those in charge to see that mission hospitals should be regarded as friends and not as rivals.

Concentration and Consolidation. Rather drastic action should be taken in regard to those hospitals in non-strategic locations which can show no good reason why they should be further supported by missionary societies. These hospitals should be closed; or turned over to responsible local boards, either as outright gifts, or as loans under certain conditions. They could in many cases be efficiently run by competent young graduates of medical schools as outstations. No new hospitals should be established so far as the eastern part of China is concerned. In certain areas, it would make for economy and efficiency, if two institutions were combined into one. With a very few exceptions there is no reason for trying to maintain two mission hospitals in the same locality. The difficult question is; how can this policy of cooperation, consolidation and elimination be carried out? Already the suggesiton has been made to have all the medical work put into the hands of a Medical Bureau, set up by the mission boards. It is high time that some definite action be taken. Some such bureau would tend to relieve certain institutions of the present well meant, but inefficient and cumbersome methods of administration. Quality not quantity is our aim and quality must be preserved by the sacrifice of quantity. Medical missions occupy a position of influence today. But we must consider the future; only the best possible is worthy of the cause we represent. World financial conditions and local circumstances do not justify us in hoping for increased funds. In order to maintain progress, not for ourselves but to aid the future medical profession, there must be careful pruning, and consolidation. It would be possible to carry out this plan by having a fairly large council appointed, representing the home boards and the C.M.A., to make recommendations to the boards, provided such a council were given practically mandatory power by the boards concerned. Otherwise the results achieved might be as negative as those of other bodies which have come and gone in the past, and our opportunity for great helpfulness in the future would be largely lost.

Medical Education. As another is to write the chapter on Medical Education, to appear in this China Christian Year Book, 1932-1933, the present article is not concerned with this subject. But owing to the important part medical missionaries have had in the work of translation and education, and the increasingly important part graduates of mission medical schools are playing at present, this subject deserves mention. It is a great opportunity to be able to train many of those who will naturally be the leaders and the teachers of the coming generation of medical men and women in China. There is no more important work before us; the continuity and permanency of medical missions depends largely on how well we do this. Standards of instruction and quality of personnel must be maintained to the highest point of efficiency practicable. The financial outlay will be comparatively great. Much has been done by cooperation and union, but more must be done along this line if we are to attain the greatest success. We cannot hope to maintain adequately the medical schools at present existing; more amalgamations should be effected. Missionary societies must be prepared to sacrifice other work if necessary in order to maintain a very few efficient medical schools. The establishing of large numbers of lower grade medical schools may be undertaken by the Government, but that is not our concern.

Medical Schools. Well equipped hospitals are of the greatest importance as accessories to schools in the training of doctors. Not only can graduates of the better medical schools receive valuable further training, but such hospitals can also give post-graduate training to the graduates of the poorer schools.

Responsibility. Gradually the responsibility for maintenance, administration, and personnel will be turned over to our younger Chinese colleagues. It can be expected that most of the hospitals will retain their Christian character, thus fulfilling the aim of the founders. For many decades to come the larger hospitals and the medical schools should

continue to have westerners on their staff, their salaries being contributed by foreign missionary societies; this will be to the mutual benefit, professionally, of China and the West.

Outlook. The future outlook for medical missions is full of possibilities of usefulness. Working in full cooperation with the C.M.A., and the Government, the hospitals will continue to care for the sick in their communities, and assist the medical schools in maintaining high ethical and professional standards in the rising medical profession of China.

NOTES

The Conference

The Nanking Conference despite certain unavoidable drawbacks proved to be one of the most successful conferences we have held. Over four hundred delegates attended the meetings and the proceedings were marked with considerable enthusiasm.

The afternoon Section on Medical Missions was the best that the writer has seen at many conferences, fully a hundred being present and the discussions of a most interesting nature. The session proved only too short and it was generally felt that more time must be allowed at future conferences for the consideration of medical mission problems.

The Next Conference.

It is practically certain that the next Conference will be held in Canton in November 1935. It behoves the Medical Missionary group to do its utmost to ensure that this shall be the best conference we have ever held. The occasion is a momentous one as the date is to be arranged if possible to coincide with the centenary of mission hospitals in this country. On 4th November 1835 Dr. Peter Parker opened the first hospital in Canton and so introduced scientific medicine to China. Enormous changes have taken place since then but the Canton Hospital continues its munificent work. By the time the Conference meets in Canton a new hospital will crown the efforts of the century and be a promise of many future years of service to the great City of the Rams.

The Future of Medical Missions.

It is idle indeed to dwell on the glories of the past unless they inspire us for the work ahead. Some have been questioning the future of medical missions in China but this is not the attitude of those most qualified to speak whether Chinese or foreign. Some of us had the privilege

of listening to a most stimulating address by Dr. F. C. Yen on the Sunday afternoon of the Conference, and the messages from our President were couched in a similar strain—a prophecy of still increasing usefulness on the part of our mission hospitals.

At the same time we have to acknowledge that there is a real danger of our resting on present and past successes rather than looking forward to the future. It has to be confessed that, despite some notable exceptions, we are failing to reach as we should the rural population which is truly the backbone of China. If the future is to hold more than an increasingly difficult struggle to maintain our present usefulness it must be by pushing our work into the more needy and neglected rural areas within reach of most of our hospitals.

The Steps Needed.

Let us confess at once that there is no general agreement and no clear vision of what can be done and how it can be done. But if the recognition of this can be impressed upon us we have taken the first step in the right direction.

Another step is indicated by the decision of the splendidly attended Section on Medical Missions at the recent Conference. This was to study, through surveys now available, the precise present position of our hospitals and the indications this gives for future advance. This study it has been wisely agreed should be carried out not merely by our small body at headquarters but mainly by groups of our members in different parts of the country.

A third step might be a consideration of special efforts made by a few of our hospitals to advance into new territory and along new lines. We shall make an attempt to secure articles descriptive of such special ventures for publication in future numbers of our *Occasional Leaflet* and careful study should be given to these in thinking over possible lines of advance.

Available Surveys.

As already mentioned, our first need is to realise the actual detailed facts about our hospitals. Where can these be obtained? Three recent articles are of special value. And whether we agree with conclusions formed from them or not, the facts are there and deserve most careful attentions. These are:

1. Dr. Lennox's report of the fact finding Commission; not for a moment to be confounded with the report of the Appraisal Commission in *Rethinking Missions*.

2. Dr. Shields of Tsinan has recently surveyed the same field in a short article in the *China Christian Year Book* for 1933. As copies of this article are not very widely available we are reprinting it in this *Occasional Leaflet* by kind permission of the Editor of the Year Book.

3. Dr. Snell of Soochow, as Chairman of the Association's Council on Hospitals, presented a comprehensive review of the present situation of the hospitals to the recent Conference. The review covers Private and Government as well as Mission Hospitals and will run to about a hundred printed pages. The Conference instructed that it should be printed as a Supplement to the Chinese Medical Journal and this will be done as soon as possible.

One of the very interesting features of Dr. Snell's report is that although not dealing with the subject at all, the cold facts that he brings out are more than a sufficient contradiction to some of the unwarranted statements in *Rethinking Missions*.

The Support of Mission Hospitals.

The continued economic depression makes it quite certain that for the present at least more support of

hospitals on the field and less from the home countries must be looked for. We had therefore planned to have a discussion on this subject at the Conference. With the uncertainty of escape from emergencies that is part of a doctor's life, our friend Dr. Goddard of Shaohsing was unable to be present to open the discussion and his paper also failed to reach us until just after the meeting. We are therefore publishing it in this issue with a few additional notes by Dr. Thomas. We earnestly invite further communications on this important subject.

Dr. J. R. Dickson

We greatly regret that in obituary notes in the last *Occasional Leaflet* the information which we had received about Dr. J. R. Dickson was incorrect. We referred to him as a comparatively newcomer.

Dr. Dickson came to China about 18 years ago in the service of the American Presbyterian Mission. Later he joined the China Inland Mission and became Medical Officer to the Chefoo Schools of that Mission. Thereafter he once more joined the American Presbyterian Mission and continued in their service until the time of his death.

Our Supporters

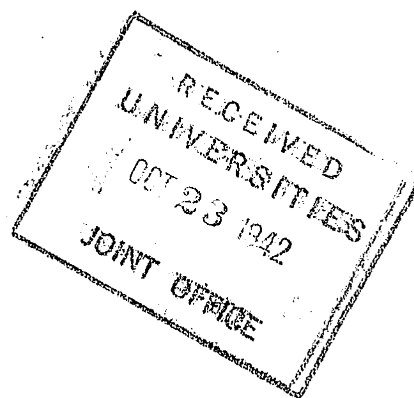
Attention is called to Note 3 on page 25. A number of additional subscribers were added during the Conference but the suggestions for increased material in the leaflet will fully absorb our funds unless we get more wide support. We are anxious to enlarge rather than diminish the circultication of the Leaflet, but this will have to depen on our receiving the minimum dues asked for.

There are still 50 members who subscribed for one year only in 1933 but who have not yet renewed their subscription and our total supporters cover only a third of our medical missionary members.

Itinerary Medicine Cases

Messrs. Burroughs Wellcome & Co., 5 Hongkong Road, Shanghai inform us that they have a number of First-Aid and Medicine Cases slightly soiled from storage very suitable for mission doctors on itinerary work. Messrs. Burroughs Wellcome & Co. write us that they are prepared to dispose of any of these cases to interested parties for a nominal sum and regard the matter as a donation to missionary work.

Should any of our members care to take this matter up they might communicate direct with the above mentioned firm.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MEDICAL MISSIONS IN CHINA

by RANDOLPH TUCKER SHIELDS, M. D.
Shantung Christian University

It is not necessary to dilate upon the value of the work of medical missionaries to the Chinese and to the church of China. At present most of the mission hospitals in occupied China have been forced to close, but many are still being run by Chinese Christian doctors, graduates of our medical schools. In Free China there are probably about one hundred mission hospitals.

While the past history and the present situation are interesting and most encouraging, yet the question which confronts us most acutely is—what of the future? War has forced the opportunity upon us which would not have occurred in peaceful times—the opportunity to adapt our medical work, as all other mission work, to the new conditions. The pioneers of modern medicine in China could only practice curative medicine, as a practical demonstration of Christianity to the people. Obviously they could not cooperate with the government as it then was, and they could not teach preventive medicine to a people who knew nothing of the value of modern medicine. Incidentally, think of how little was known in the U. S. A. forty years ago about preventive medicine.

President Wu of Ginling and the Generalissimo and Madame Chiang Kai Shek

The New China, which we hope is going to emerge before many years, is naturally going to be dominated by the men and women who have been living in Free China and developing that part of the country. There will be new conditions, new ideas—ideas which have resulted from experience in West China since 1937. There are certainly going to be plans to produce large numbers of doctors in order to meet the tremendous needs of the population of China. There is going to be increasing emphasis on ruralization in medicine, as well as in everything else. Preventive medicine is going to be stressed. Health centers will be set up, and health education will be emphasized. This was the trend even before 1937, as those of us know who have seen Jimmy Yen's work at Ting Hsien, Hopei, or the work at Chouping and Tsining in Shantung. There is going to be an increasing number of capable medical men and women who have had several years of practical experience working among their own people and with the backing of the government. They will strenuously and, we hope, effectively tackle the immense medical problems which will confront them.

Now what are we, as medical missionaries, going to do to help in this new program? One thing we certainly must not do. We must not attempt to simply take up where we left off. A careful study of the field should be made by the Mission Boards concerned, consulting with leading British and American and Chinese medical men, and due consideration must be given to the financial resources which can reasonably be hoped for. Whatever we do must be done with the full approval of, and cooperation with the government. We should plan to continue as mission supported hospitals only a selected number of the old hospitals. Most of the old hospitals should be turned over to the Chinese, under Christian management if possible. I doubt the possibility, or the wisdom of attempting to get the churches, as such, to support these hospitals. One can see that there will be many difficulties and some disappointments in this transference of authority, but it should be done. The remaining mission hospitals must be much better equipped and staffed than any of them have been in the past, so as to be prepared to fulfill two functions—(a) to serve as district or provincial centers for the public health activities of the government; (b) to be teaching hospitals where selected graduates of government medical schools can serve as internes and residents and thus be well trained for the public health services, or as specialists in the various fields of Clinical Medicine.

If these Christian Hospitals be staffed by competent Christian doctors, Chinese or foreign, they are bound to exert a great influence both professionally and spiritually over the young doctors whom they train.

Finally we should consider the Mission Medical Schools. From the apprentice training schools of the early days, have developed a few mission medical schools which have made a great contribution to China; and in recent years there have been established an increasing number of schools supported by the Provinces or the Central Government. But even the best of all these schools could not be said to have all the necessary equipment and staff which they desired. The Rockefeller Peking Union Medical College stood out as a special institution.

One can assume that the government, confronted with the problem of trying to meet the medical needs of the people, will continue and expand the policy of having two classes of schools, one frankly of lower grade than the other, with a shorter curriculum, in order to be able to turn out a large number of doctors in a short time to meet the immediate and pressing needs. And new centers for training midwives and public health workers will no doubt be opened. We fully agree with this policy, but it should be carried out as a function of government and not by private bodies such as missionary societies. There is no reason, however, why private medical schools, and union mission schools, could not assist in the general program of medical education. But if the history of the past is to be used as a criterion for the future, we can scarcely hope for adequate financial backing and a sufficient number of well trained medical missionaries to staff more than one (or possibly two) mission supported medical schools in China.

Wendell Willkie Speaking on the West China Campus at Chengtu

Whatever we establish and support should be of a high standard—otherwise we should not enter the field of medical education. I realize that this whole matter is very closely tied up with the larger question of the quality and the number of mission schools and colleges we may attempt to support in the New China.

Another matter which should be brought to the attention of the Mission Boards, is the kind of training which should be required of medical missionaries in the future. It will not be wise, as a rule, to send out young doctors who have had no more special training than the graduates of medical schools in China have had. Only those who have had several years of post-graduate training at home, and are qualified to teach in medical schools or to train young doctors in teaching hospitals should be sent to China.

I am fully aware that there is another viewpoint of this whole question. Many of my colleagues, both clerical and medical, will advocate that medical missionaries should continue to do pioneer medical work along with evangelistic, and that if we go into educational work we should set up schools of a lower grade and turn out more doctors, rather than better ones, with the hope that thus the smaller hospitals will be manned. There no doubt will be many communities where pioneer work will be needed, but if we are to have any medical schools, let them be only first class.

YENCHING OFFICIALLY REESTABLISHED

Yenching-University-in-Exile was officially opened on December eighth in the city of Chengtu, hundreds of miles from its own campus north of Peiping. Those participating in the ceremony must have had a strong feeling of nostalgia mingled with a high resolve to carry on despite the invader.

Fortunately these exiles were surrounded by friends. West China Union University, already stretched to the limit by its hospitality to previously exiled institutions, had somehow also found a place for Yenching. The prospect of snow-clad mountains seen from the West China campus was a grander sight, yet the exiles could hardly help thinking of their own lovely campus laid out in stately grandeur with harmonious Chinese architecture on what was once the site of a prince's palace, landscaped in the best traditions with lakes and rivulets and hillocks and fine old trees.

President Stuart still is in military confinement; Chinese professors recently were released from months of captivity during which they were tortured in the vain attempt to make them cooperate with the puppeteers. Other instructors perhaps are now en route, escaping from occupied territory disguised as peasants.

The Yenching exiles in Chengtu must have felt a thrill to find themselves part of an unquenchable enterprise, demonstrating anew the vitality of the Chinese people and their age-long devotion to learning. Their courage was strengthened by the knowledge that in the United States and in Great Britain there are hosts of friends ready to stand by them through thick and thin.

TOWARDS MORE EFFICIENT SERVICE

The recent appointment of Professor William P. Fenn, to be the special representative in China of the Associated Boards, is an important forward step toward greater efficiency of administration. War conditions have made it increasingly difficult for the New York office to keep fully informed of the rapidly changing conditions in China, especially when as many as four institutions have been in process of migration at the same time. Professor Fenn is commissioned to visit each of the Christian Colleges in Free China at least once a year, thus keeping them in touch with each other as well as with their friends overseas. He is to gather statistics and reports to send to the Trustees and he is to represent the Associated Boards in their contacts with the United China Relief Coordinating Committee in Chungking. Professor Fenn is well qualified for this task, and there is general satisfaction that he has accepted the appointment which is to extend to January, 1944, and that Nanking University and the Presbyterian Board of Foreign Missions have both released him to do this work.

MEDICAL MISSIONS IN CHINA

A Review

By Randolph Tucker Shields, M.D. *

(An address delivered at Montreat, North Carolina, at the Foreign Mission Conference of the Presbyterian Church, U.S., August 1943.)

Introduction

I have taken the request to write this paper as meaning that the Committee wants me not to entertain an audience but to give facts and figures which will enable intelligent students of missions to estimate the real value of a century of medical missions to the Christian cause in China. Having written a number of papers on this general subject during the past 35 years, I have naturally drawn on these papers for many of the facts given here. It is high time that the churches of America have the full record of medical missionary work in China, and I propose to make a small contribution to it. It is a record of which the medical profession can be proud, for which Christians must be thankful, and for which the Chinese people will be forever grateful.

Early History

I shall attempt to give an outline of the past history of medical missions as a background, the present situation as proof of its value, and the future as a challenge. After Morrison went to Canton in 1807, Drs. Pearson and Livingstone of the East India Company helped him by opening a dispensary for the Chinese. But it was not till 1834 that Peter Parker of the American Board was sent as the first medical missionary. He founded the first hospital, known today as the Canton Hospital. In the next few years other British and American doctors went out, several hospitals were opened in the coastal cities, and a beginning was made in training medical assistants. One of the most famous of these pioneers was John G. Kerr - I wish I had time to mention others. Up to 1886, 150 medical missionaries had gone to China. In that year the China Medical Missionary Association was founded and a Journal begun. That Association continued to grow in influence until 1932 when it united with the younger National Medical Association to form the Chinese Medical Association. At the meeting in 1886 Dr. Kerr read a paper in which he urged the training of Chinese doctors (1) to care for their own people, (2) to assist in missionary hospitals, and (3) to be the teachers in the future medical schools of China. By 1890, 46 more doctors had come bringing the total up to 196. In looking over the names of the men who came out between 1880 and 1890 one can see that practically all of the future leaders of medical education were in that group. Think of the trials which these early pioneers faced, the difficulties of communications with the homelands, the meager supplies and equipment, the absolute lack of assistants, the ignorance and indifference, if not opposition, of a conservative people, steeped in the doctrines of Confucianism, which taught them to look to the golden age of the past and not to the future. We cannot give too much praise to these men who by their lives and their work made

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possible the larger and more efficient work done by their successors. The Boxer trouble in 1900 temporarily broke up most medical and other mission work. We can well make this period the end of the first chapter of medical missions.

We can profitably here interject a comment on the history of the science of medicine. Anesthesia was discovered during this period, the middle of the 19th century, and the epoch making discoveries of Pasteur, Koch, Lister, and others were made in the latter part of it. Western medicine was not prepared to give its best to China till the end of the century.

Development After 1900

After 1900 more men and women arrived, prejudice was breaking down, the country was opening to foreigners, more and better hospitals were being built and a new era was beginning, even before 1911, when Sun Yat Sen's revolution overthrew the Manchus. Before 1900 a number of training schools for doctors had been started, and during the next 15 years several new schools were begun, all by the union of different missions. It was a period of progress and of concentration and elimination. This continued till by 1920 there were six Protestant mission medical schools, one part mission, and one Roman Catholic. Hongkong University and the Rockefeller school in Peping were established and the Government of China was beginning on its medical educational program. During this 15 year period the Publication Committee of the China Medical Missionary Association was reorganized and the translation of medical books was pushed. I shall never forget the third meeting of the Association which took place in January, 1905, one week after I had arrived in China. At that meeting there were not more than twenty British and American doctors and one Chinese. In 1915 our Publication Committee united with the two Chinese Medical Societies (one composed of Anglo-American returned students, the other of Japanese returned students) and the Kiangsu Educational Association to form the Joint Terminology Committee which between the years 1915 and 1929 made the beginning of official medical and other scientific terms for China. As a number of young Chinese graduates had returned from England and America by 1915, they formed that year the National Medical Association. As already mentioned, this association united with the China Medical Missionary Association in 1932. At that time there was a joint meeting held, each separate society by unanimous vote decided to disband, and at the same time the members of both societies resolved to form the Chinese Medical Association. I do not know of a finer example of real international cooperation. This association is organized in general along the same lines as the American Medical Association and is going to be a power for good in China.

Those who know anything of medicine in the U. S. A. will remember that it was between 1905 and 1915 that the revolution in medical education in this country took place, which reduced our 160 odd medical schools (many of them not worthy of the name) to the present 77.

Here I want to make some quotations from a paper I read before the Committee of Reference and Counsel of the Mission Boards of North America in New York in January, 1914. First I quoted a resolution adopted by the China Medical Missionary Association in Peking, February, 1913:

> Medical Missions are not to be regarded as a temporary expedient for opening the way for, and extending the influence of, the Gospel, but as an integral, coordinate and permanent part of the missionary work of the Christian Church.

I then said that we might divide the function of medical missions into the following three phases:

1. As a means of breaking down prejudice, winning confidence, securing a friendly atmosphere for the preaching of the Gospel. This aspect of the work was greatly emphasized, it was of great value, but it was necessarily temporary.

2. The evangelistic aspect, without which no medical work can be termed missionary. Medical missions should be regarded as an integral part of the Gospel message, a practical demonstration of God's love, and this can be done much more effectively in a hospital ward than in the crowded waiting room of a dispensary. Hence the need for better manned hospitals.

3. Another function of medical missions is that of its value as a permanent asset of the native church, carrying on its influence to future generations. Again I quoted from the C.M.M.A., February, 1913:

> A most important feature of the work of Medical missions in China at the present juncture is the work of training Christian young men and women that they may take their places as thoroughly qualified Medical Missionaries to perpetuate the work we have begun, and occupy positions of influence in the service of their country.

China's needs are to be met not by importing foreigners, but by training natives. The permanent value of the work will depend upon the spiritual character, and the scientific training of the men to whom the foreign medical missionaries will in the natural course of events turn over their work. I took up the matter of the need for cooperation in the establishment of better hospitals and especially the necessity for union in medical schools. I pointed out the opportunity for this which we had in China, an opportunity to make an impression for Christianity upon the future medical profession of that great nation. We must have a few first-class medical schools that will at least equal any that may be established in the future. (There was a meeting of the Rockefeller Foundation, which I attended, held that very month in New York.) Nothing short of the best that we can do will be worthy of the Christianity that we profess. Our aim should be to cooperate as far as possible with the Chinese and, as suitable Christian men are found, give them positions upon our boards of management and our faculties, so that in time medical schools as well as hospitals shall be turned over to competent Christian Chinese. The experience of the past fully justifies the belief that the large majority of the graduates of Christian medical schools will be Christian.

Though this paper was written 29 years ago, the essential facts are as true now as they were then.

At the risk of boring some with statistics, I am going to give some figures which should be made available to students of missions. I fear that the only complete and accurate records are in Shanghai at present. I do not know how many medical missionaries have been sent out from America, the British Empire, and the Scandinavian countries, but I am now trying to get this information. Very few were sent by Germany. Up to 1890 there were 196. Since 1890 the Northern Presbyterians have sent out 132 doctors, the Southern Presbyterians 44, the Northern Methodists probably 171, and the American Board of Commissioners for Foreign Missions 34. During the last 25 years I think there has always been an annual average of 300 medical missionaries in the field. I think we can estimate that there have been during these 100 years a total of approximately 1000 medical men and women sent out mainly from Great Britain, Canada, and the U.S.A. The number of hospitals for many years has been over 200. In 1935 there were about 325 foreign doctors and 270 foreign nurses in 230 mission hospitals, which at that time had 530 Chinese doctors, 1,000 Chinese graduate nurses, and 4,000 pupil nurses working in them. (When I went to China in 1905, I doubt if there was one real

Chinese nurse.) Dr. Sze, Secretary of the Chinese Medical Association, in his book published in the United States in 1943 says there are 60 government hospitals, 235 Protestant missionary hospitals, and 15 others, making a total of 310. These figures are as accurate as can be got for the last few years. Dr. Lennox, one of the "Fact Finders" in 1931 who gave a good write-up of medical mission work, states that the mission hospitals treated about 178,000 in-patients and gave 3,000,000 out-patient treatments a year. He also says in his official report that of 120 hospitals answering his questionnaire, 84% of the 322 Chinese doctors and 1792 nurses were Christian. In 1936 the Chinese Medical Association membership was 2,400. Dr. Sze states that there are now approximately 12,000 doctors and 38,000 hospital beds in China and that the following medical standards have been suggested by authorities in U.S.A.: 1 doctor per 1,500 population, and 5 beds per 1,000 population. On this basis China should have 266,000 doctors and 2,000,000 beds. The U.S.A. has 180,000 doctors and 6,345 registered hospitals with about 1,300,000 beds.

This brings us to the most important question for the supporting home churches. Have medical missions as an integral part of the foreign mission program been worth the cost in men, women, and money when we consider the results from the professional, the humanitarian, and the spiritual standpoints? I shall take Cheeloo University Medical School as an example of medical schools as I have accurate statistics concerning it from 1915 to 1937. When I went there from the University of Nanking in 1917 there were four American, three British, and one Chinese assistant on the medical staff, and we had a student body of over 100, from the old Peking Union Medical College, Nanking University, and the nucleus which was there in Tsinan already. In 1918 the Hankow Medical School joined us with two teachers and a few students, and in 1923 the Women's Medical College of Peking united with us bringing five teachers and our first women students. Year by year there were additions to the faculty and the standards of instruction were gradually raised. By 1937 we had a teaching staff of 34 - 16 British and American, and 18 Chinese. And of the Chinese five were heads of departments. (This of course does not include the residents and assistant residents who were associated with the hospital.) Our student body remained for years around 100; but the pre-medical preparation, and the instruction was far beyond that of the early years. We also had a small School of Pharmacy and a regular course in Medical Technology. Our teaching hospital of 160 beds was caring for over 2,000 in-patients, and the clinic had increased to 80,000 treatments a year. In the hospital we had four or five British and American nurses, an equal number of Chinese graduate nurses, and 70 to 80 student nurses. There was in the hospital a well organized Social Service Department. And there was also the Evangelistic Department with three regularly employed workers, and several wives of faculty members as volunteers. Services were held every day in each ward, and a service for employees was held daily in a little chapel. The most effective part of this program was the personal conversations and the distribution of books and tracts. Wherever practicable patients were given letters when they went out to present to pastors in their home villages. We shall never know the number of conversions which were the outcome directly and indirectly of this work.

Now what of the students who were trained in this atmosphere? Almost all of our students were already Christians when they entered the medical school. The reason for this was that our high entrance requirements necessarily meant that we had a very select group of students who came almost invariably from mission schools and many of them were the children of Christians. I must give you some facts and figures which present the strongest evidence of the value of the contribution which our school made to mission work. In the 20 years up to 1935 there were 313 graduates of whom 9 had died. Of the 304 living graduates of the medical school in that year, 22 were serving in Cheeloo and 86 in 66 other mission hospitals representing 24 missionary societies in 16 provinces of China. Of the 9 Southern Presbyterian hospitals 8 were using 14 Cheeloo graduates. And remember that the majority of each year's graduates served for one or more years in mission hospitals before going elsewhere. The dean's office for many years was a sort of recruiting agency for the hospitals of North and East China.

After Pearl Harbor it was impossible to get full information, but so far as I could learn, mainly from the 40 medical missionaries on the Gripsholm, many of the mission hospitals in occupied China were still carrying on under Christian Chinese doctors after the foreigners were forced to leave. In many cases the Japanese took over the hospitals and would not allow our Chinese colleagues to run them. These facts in regard to our graduates speak for themselves. Up to the summer of 1937 we had had for various lengths of time 16 doctors from the U.S.A., 16 from the British Isles, and 2 from Canada on the staff; and they had helped to train 365 Chinese doctors. I cannot give accurate figures for the other mission medical schools though I have the exact number of the graduates from most of them. The total is approximately 1,500 - not a large number, but one which continues to have a wide influence in the country and has made a big contribution to the work of Christian missions. I have already mentioned the number of patients treated on the average each year by the 235 Protestant mission hospitals. Incidentally, I know of only three real hospitals operated by the Roman Catholic Church. I have seen printed statements of numbers of Catholic hospitals in China, but I have no first or second-hand information as to the location or existence of these hospitals.

What the Chinese Have Done

An annual death rate of fifteen per 1,000 population is considered very high for any country. In China it is estimated that 25 per 1,000 people die each year. Of the 12,000 doctors listed by Dr. Sze, about 7,000 are properly qualified, and of these 92% are under 50 years of age, and 57% are under 40. This shows how young the medical profession of China is. Most hospitals and doctors are in larger towns and cities, though 84% of the population live in rural areas, and they do not have the cars and roads that we have in America. The Chinese authorities have decided that under the present conditions the only way to tackle the immense problem of medical care is to inaugurate state medicine. The National Health Administration's plan which they had begun to develop before 1937 is to have a central health center in each province with district and county units surrounding it. They are asking for cooperation by mission hospitals in this work. Probably one half of the people in China still believe in the old practitioner of herb medicine and do not want Western modern medicine. But this is simply a matter of education of the people; and when we think of what has been done during the last few decades along this line, we can realize that it will not be long before the people will all welcome Western medicine. The maternal death rate in China is probably 15 per 1,000 births; the infant mortality is at least 200 per 1,000 births. In the U.S.A. the maternal mortality is probably 5 or 6 per 1,000, while the infant mortality is about 40 or 50 per 1,000 births. Probably one third of the population of China has trachoma, 8% has pulmonary tuberculosis, and the lepers number probably 1,000,000. An unknown number has malaria and kala-azar. In addition to this the medical authorities must always be on the lookout for outbreaks of cholera, typhus fever, and plague. The poverty of the people and recurrent famines make all this work vastly more difficult. I will not attempt any further details of this story, but you can see that the problem is tremendous. There is a Health League in China which is trying to educate the people along the lines of preventive medicine. In the early 20's the Chinese began on a new program for medical education. Dr. Sze states that by 1937 there were 10 national, 9 provincial, and 9 private medical schools, including those of medical missionary societies. He recognizes that one of the big problems for the medical profession is the fact that there are so many poor schools which are turning out doctors who are not properly qualified. The Chinese Medical Association had in 1937 about 3,500 members and the leaders of this association are doing all they can to keep up the standards of the profession.

The Future

We come now to the important matter as to what is to be our policy for the future. For several obvious reasons the early missionary could not teach preventive medicine to people who knew nothing of sanitation or the value of modern medicine. And this phase of medicine is essentially a function of government. We have mentioned what the government of China had begun to do before the Japanese invasion and the general plan it is now preparing to put into effect in the future. They desire the cooperation of mission hospitals, and medical missionaries had begun to cooperate along these lines. All hospitals can aid, and we should expect most of our hospitals to be recognized units in the health program - if not as provincial centers, at least as district or county centers. Health education must go hand in hand with preventive medicine in order to make the latter acceptable and efficient. State medicine, curative and preventive, is going to be carried to the rural population and no agencies are better situated for carrying out this program than our mission hospitals. But in order to do this our hospitals must be adequately staffed by properly trained personnel. Hospital extension work, mobile clinics, health education programs can be carried on. But unless such hospitals can be efficient, they should be closed and their resources merged with other units. In order to fit into the program we shall have to give up some of our administrative independence, but not give up any of our Christian motives. Let me quote in part from a resolution adopted by 41 medical missionaries on board the Gripsholm in August, 1942:

> We wish to record our conviction of the continuing importance of medical missions including Christian medical education. In general it is still too early to state what lines the work of the future will follow. We should recommend, however, that when the time comes Mission Boards and Agencies make careful surveys of the situation and, in consultation with Nationals, the Native Church, and Missionary Colleagues determine the character of the future Medical Missionary enterprise and what work should be carried on.

I would add to this that the wasteful overlapping and reduplication of efforts between the various missions, of which we saw many instances in the past, must be stopped. The Boards should see to it that hereafter there shall be full cooperation or union. This should apply to evangelistic and educational work as well as medical. I feel sure that our friends in the Chinese Medical Association and in the Chinese government will welcome our cooperation in carrying out the big job that is before them. There is no doubt about the fact that the 135 years of Protestant mission work has built up a splendid foundation of good will in China, and that the events of the past 6 years will serve to strengthen that good will. This gives us an open door to a great opportunity and I am very hopeful in regard to the future. But while optimistic I am also realistic. To continue this feeling of good will and thus take advantage of that open door certain conditions must be fulfilled. One is that the U.S.A. must be of real and undoubted assistance to China in driving out the Japanese and in post-war reconstruction. We must repeal any discriminatory laws and the mission Boards must be very careful in selecting the men and women that they send out. After the war naturally, and very properly, there is going to be a marked development of a spirit of independence and nationalism. Any missionaries returning to China, or being sent out for the first time, must expect this and be prepared to meet it in a spirit of friendly cooperativeness. They must have not only the missionary motive but the personality and adaptability which will be needed, and they should have experience or special training which will enable them to adapt themselves to conditions they will meet, and assume responsibilities they will have to bear.

Another most important function which mission hospitals can perform is to become teaching hospitals. Only a comparatively small number can be equipped and manned to do this. These hospitals should be fairly large and be the equals of any other hospitals in the country. The members of the staff should have such professional training that they can attract the graduates of government medical schools to come to them for training as internes and residents. A great influence for good both professionally and spiritually can thus be exerted on the growing medical profession. As I see it, the opportunities for medical help to China are going to be not less, but vastly more in the next generation than they ever were in the past. The need was just as great in the past, but even if we had had the resources, it would have been impossible to meet this need. The ignorance of the people, the lack of desire for modern medicine, social and economic factors, the indifference of the government, and the absence of an active medical and teaching profession made it impossible to take the benefits of modern medicine to more than a limited number. But in the new China the rapid dissemination of modern education and ideas, the active interest of government officials, wide awake medical and teaching professions open up an almost unlimited field for the medical betterment of millions.

Schools

What of the future of our medical schools? This matter is very closely related to that of higher educational institutions in general. I could say a great deal on the subject but I will not. Some of us in the educational ranks have been considered rather iconoclastic. But remember that we started the fight for higher standards in the days when every so-called high school hoped to become a university, and when a large proportion of hospitals were planning to become medical schools. That day has passed, but I still think that the slogan "not more but better" should be applied to mission colleges. After the war the government will go forward rapidly and I hope efficiently in the development of educational institutions. No doubt the Rockefeller Foundation will see that the P.U.M.C. retains its high position. There is no reason why private colleges should not exist in China as in the U.S.A., provided of course that they come up to the legal requirements in respect to equipment, personnel, and financial resources. This is not the place to discuss details, but I feel very strongly that missionaries have attempted too much along this line in the past. I think that we can hope to maintain not more than two or three mission medical colleges in the new China, and they should be undertaken only if they have a reasonable hope for adequate financial backing. Some of my mission colleagues, and some of you, will say at once that this shows a lack of faith. If you had lived with this ideal for 35 years as I have and had experienced the difficulties which I have experienced, you would better understand my attitude.

Of the six mission medical schools not one had the necessary financial resources to enable it to grow and develop as it should have done. In the early days when there were only mission schools, this lack was not so apparent. But with the opening of government medical schools the time was rapidly approaching when the mission schools would not have been able to keep up to the necessary standards. I can speak very positively in regard to our own school. Living standards were going up each year and we could not afford to pay such salaries as were given to teachers in government schools. It was only through a sense of loyalty that we retained our staff up to the time of the Japanese invasion. Our income in the old days was comparatively adequate, but for various reasons, as we needed more money, we actually received less. We could not have carried on much longer, and we could not find any help. I am referring in this only to schools not hospitals. The latter can if necessary become practically self-supporting, though I do not advocate this policy, as it tends to decrease the number of poor patients. Of course teaching hospitals are necessarily more costly to run, and we should expect to have to give them financial grants.

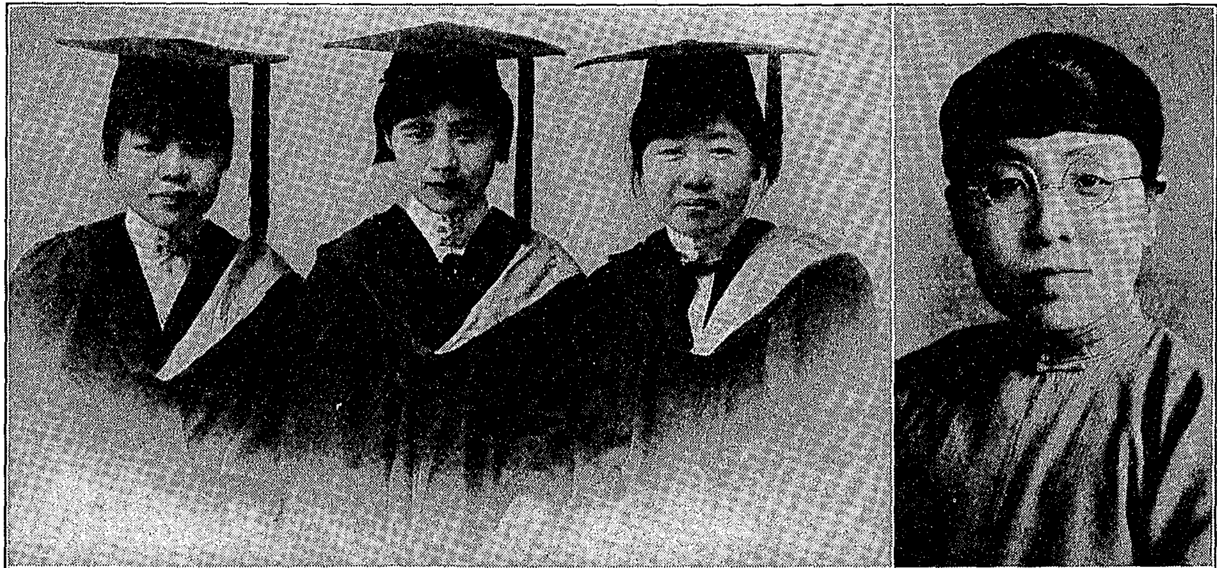
If the experience of the past is to be an index to the future, it seems to me that the wise policy will be to combine two or more of the existing institutions and thus pool their resources both of personnel and finances. Of course one cannot predict what may be the attitude of friends of China and of missions in the post-war period. But when one thinks of the amount of money only that the world is wasting during these years, and the burden of debt which every individual will bear after the war, I cannot be very hopeful of large gifts in the near future. I hope I may be wrong, and maybe we shall see a revival of good will and of religion that will result in large donations to religious and humanitarian institutions. Just now I know that there is an increase of gifts to missions in our own Southern Presbyterian Church and others.

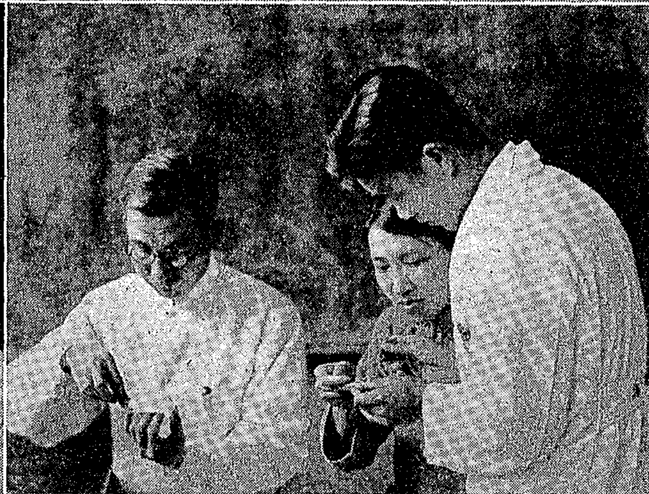
There are a number of organizations now working for the betterment of people overseas, especially for China, among which are United China Relief, The American Bureau for Medical Aid to China, The Christian Medical Council for Overseas Work, The Associated Boards for Christian Colleges in China and its Committee on Medical Education, American Friends Service Committee, American Committee for Chinese War Orphans, American Committee in Aid of Chinese Industrial Cooperatives, besides the various mission boards.

I hope that the facts I have given will help you to better understand recent conditions in China and therefore help you to better formulate a policy for the future. A great door and effectual is open to us and there are many adversaries. The next generation of missionaries have before them a great opportunity. May God grant that they may have the wisdom and the tact and the spirit to measure up to its responsibilities.

Medical Education in China

By Randolph T. Shields, M.D.





TOP ROW: *Three members of the Class of 1934, Cheeloo School of Medicine—Drs. Lin, Chu and Li. Dr. Marion Yang, Leader in establishing School for Midwives.*
CENTER: *Dr. Wu Hsioh Chung, English Methodist Mission Hospital. Graduate and Pupil Nurses at Cheeloo, 1935.*
BOTTOM ROW: *Dr. Fen Lan Chow, Assistant in Parasitology, Peiping Union Medical College. Mr. Yu, Head Technician with two Students. Dr. Ting Li Cheng, Superintendent of Baptist Hospital, Ningpo.*

Medical Education in China

By Randolph T. Shields, M. D.*

BEFORE taking up the question of medical education, it is well to review some of the outstanding facts of Medical Missions in China. Peter Parker, the first medical missionary, went to Canton in 1834. Up to 1890 there had been sent, by British and American Missionary Societies, 196 medical missionaries. In spite of the handicaps of ignorance and superstition, lack of assistants, lack of communications, they accomplished a tremendous amount of professional work, and opened doors for the preaching of the gospel. These men and women laid the foundations for the development of modern medicine and medical education in China.

In 1890 Dr. John G. Kerr wrote a paper in which he outlined the need for medical education: (1) to provide qualified physicians for the mass of the people; (2) to train assistants for mission hospitals; (3) to train teachers. He said: "The education of physicians and surgeons for the people of this great empire is a subject of the utmost importance, and one which may well engage the attention of the medical profession of the world."

Thirty years ago there were very few well-trained Chinese doctors, and still fewer, if any, trained Chinese nurses. In 1935 there were 2,400 members of the Chinese Medical Association and the Nurses Association had 2,456 members. Almost all of the 162 nursing training schools are in mission hospitals. In 1935, 260 mission hospitals reported 325 British and American doctors, 271 foreign nurses, 530 Chinese doctors, 1,000 Chinese graduate nurses, and nearly 4,000 pupil nurses in training. These 260 hospitals are, most of them, well-equipped and staffed, and last year they treated 3,900,000 patients in the out-patient departments, and over 200,000 as in-patients.

Great progress has been made in the development of modern medicine in China in the last two decades. In 1915 the National Medical Association was formed and, in 1932, by unanimous referendum vote, the old Medical Missionary Association and the new National Association amalgamated to form the Chinese Medical Association, whose membership is not limited to any nationality. The Chinese Medical Association has a strong Medical Missionary Section. In 1915 was also formed the Joint Terminology Committee which began to work on the standardization of Chinese nomenclature. This body was officially recognized by the Government and its findings were approved by the Ministry of Education.

Along with the general growth of modern medicine, certain hospitals developed so-called schools where apprentices could be trained, and some very capable doctors were turned out by this system. This was the only method that could have been used in the early days. But the medical profession was not long satisfied with this system, and, by a process of coöperation, concentration, and elimination, a large number of inefficient training schools were merged into the present six mission medical schools. At the same time the British Hong Kong University developed a medical department, and the Rockefeller Foundation took over the old Peking Union Medical College, and transformed it into the first-class medical school and hospital which it is today. Chinese government medical schools were naturally slower in developing, and though they now outnumber the mission medical schools, they are not, with two or three exceptions, up to the standard of the best mission schools.

I will take Cheeloo School of Medicine as a good example of the mission schools. The reorganized school was formed in 1916-23, and may be considered as the successor of the medical school of Nanking University, Hankow, Tsinan, and the Women's Medical of Peking. There are nine missionary societies coöperating in it, four British, two Canadian, and three American. Incidentally, the Southern Presbyterians have had a share in the development of medical education in China, and now have two representatives on the faculty of the Cheeloo School. The nine Missionary Societies furnish twenty-two doctors and nurses on the staff of the school and hospital and approximately $10,000 U. S. currency, annually. The Rockefeller Foundation, over a period of twenty years, donated more than $500,000 U. S. currency to the school, but, since July, 1935, owing to a change of policy of the Foundation, they have discontinued their regular grant, although they have made a grant of $6,000 Chinese currency as an emergency for each of the last two years. Grants are also received from the China Foundation (Boxer Indemnity) and the Ministry of Education.

The Cheeloo School conducts a hospital of 110 beds which has recently been enlarged by the erection of a part of what is to be the new hospital building, giving 160 beds all told, and a new out-patient department (the money for the erection of this building was given for this special purpose by the Rockefeller Foundation and the Northern Presbyterian and Methodist women). Last year the hospital cared for 78,000 treatments in the out-patient department, and this year, with the enlarged facilities, will care for many more. There is a leper hospital of fifty

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beds, erected and supported by the International Mission to Lepers, but for which the Cheeloo School of Medicine is medically responsible. There are thirty-five full-time men and women on the staff of the school and hospital and about one hundred students, approximately one-fifth of whom are women, divided into five classes. There is a nursing training school of about fifty pupils, a small class in pharmacy is started on a two-year course every alternate year, and a few technicians are trained in the laboratories.

Besides the internal work of the school and hospital, we are coöperating with the Government in rural rehabilitation work, and in school public health, and during the past winter the staff and students undertook to give medical oversight to 19,000 refugees placed in camps in Tsinan. The pathological laboratory of the school assists about sixty mission hospitals annually in the examination and diagnosis of pathological specimens sent in from these outlying hospitals.

In twenty years there have been 333 graduates, most of whom have served for shorter or longer periods in mission hospitals, and then have gone out into private practice or government employment. The 1935 report gives sixty-six mission hospitals in which 108 Cheeloo graduates are working, and similar reports can be given by the other mission medical schools. The Southern Presbyterians had fourteen Cheeloo graduates in eight of their ten hospitals. As noted above, the Chinese, independent of missionaries, have made great progress in modern medicine in recent years. Hospitals and medical schools have sprung up all over the country. Most of these are not yet up to a high standard. This is due principally to a lack of personnel to staff the institutions. The young medical profession has not yet had time to develop enough experienced men and women as specialists in the various branches of medicine, and especially as teachers of medicine, to meet the demand. The question is not so much a financial one as a lack of qualified personnel. Medical schools are training doctors to work in mission hospitals, in many of which no foreign doctor is associated with them; and also to take positions in the rapidly growing public health projects, state medicine, and medical schools which are being developed by the Central and Provincial Governments.

British and American doctors have decreased from a peak of 499 in 1925, to 325 in 1935, approximately 35%. We must expect a gradual decrease in foreign personnel for mission hospitals and schools, as we can also expect a continual increase in the quality of private and Government hospitals. The majority of the graduates of mission schools are Christian, and we can hope they are imbued with the spirit and ideals of medical missionaries. What is to be the future of the 260 mission hospitals? What is to be the permanent value to China and Christianity of the one hundred years work of medical missionaries? The answer is to be found in the character of the professional and spiritual training of the men and women who are gradually taking the place in the mission hospitals of the diminishing number of foreign medical missionaries.

Obviously, the logical places from which we can best expect to obtain capable successors to medical missionaries are the schools in which medical missionaries continue to exert an influence. It is just as obvious that if these schools are allowed to deteriorate professionally and spiritually they will gradually lose their influence as an asset to the Church and to the medical profession. In the United States, with the history and prestige and high character of the medical profession, many leaders of the profession are greatly concerned about the number of quacks, or worse, who disgrace their calling. If this be true of America, how much more true of the very young medical profession in China. The mission medical schools were founded by missionary societies of Britain, America, and Canada. There has been an increasing amount of Chinese funds for the support of these schools. In recent years it has been shown that these foreign societies are unable to keep up their contributions in personnel and money—much less increase grants to allow for a reasonable growth. (And this in spite of the fact that most mission hospitals have become self-supporting, which is not always a desirable achievement, but has become a virtue of necessity.)

We have before us an unparalleled opportunity for service to a nation which officially and unofficially sincerely welcomes us and is ready to coöperate. To a great extent we have made good so far in training quite a large number of men and women who are serving their fellowmen as Christian physicians. Are we going to lose this opportunity? Are we going to quit on a job we have started? Are the Christian philanthropists of America going to allow schools to be closed? Or turned to Government or other local bodies? Or will they continue to give support so that some of them may remain as international institutions, partly, at least, gifts of goodwill to the people of China?

This paper is written with a knowledge of the ominous situation in East Asia, but also with a knowledge of the fact that other missionary medical schools have not been directly injured in conquered territory. And if the national schools are all destroyed, the need for international schools will be all the greater.

Medicine in China*

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IT MAY BE OF INTEREST to mention early Chinese Medicine beginning with the legendary Emperor Sheng Ming in the 29th Century B. C. and the Emperor Huang Ti 200 years later. The latter is supposed to have written of the diagnostic value of the pulse and is said to have described acupuncture. Medicine at that time was mixed up with religion, doctor and priest being the same individual as was the case with other primitive peoples. In the Chou Dynasty, 12th century B. C., medicine was still dominated by philosophic speculations. In the middle of this dynasty (500-300 B. C.) Lao Tze, Confucius and Mencius, the greatest Chinese philosophers, lived. During this period the "science" of medicine was mixed up with the principles of "yin" and "yang." All the universe is made up by the union of "yin" and "yang." All life consists of "yin" and "yang" principles. Some organs of the body are "yin" and others "yang," and therefore diseases are classified as "yin" and "yang" diseases. In addition to "yin" and "yang," the "five elements"—metal, wood, water, fire, earth—all entered into the composition of all substances. The body was a harmonious mixture of the five elements. It is interesting to note that the Nei Ching, or canon of medicine, states that "the heart regulates all the blood of the body" and "that the blood flows continuously in a circle and never stops." In these ancient times there was evidently an attempt to divide doctors into physicians and surgeons and there is a suggestion of preventive medicine in the sentence "the sage does not treat those ill, but those well." In the Han Dynasty, 206 B. C.-220 A. D., there were physicians whose names are revered today. They used drugs, acupuncture, and hydrotherapy.

Hua T'o, often called the God of Surgeons, was credited with a great many operations and the use of anesthesia, probably species of datura, aconite or other herbs. Acupuncture has been practiced from ancient times and is now used extensively by the old-style doctors. It is said to have been used also in Japan and to have been introduced into Europe in the 17th century. Was it brought to Europe from China? Inoculation for smallpox with human virus has been practiced by the Chinese since 1,000 A. D. In 656 A. D. the Emperor appointed a committee of 22 to revise the ancient "Pen Tsao Ching," or materia medica, and they produced a work of 53 volumes. The study of materia medica then must have been as difficult and unsatisfactory as it was when I was a student.

Medicine was one of the many phases of Chinese culture which greatly influenced the other nations of Asia. Translations of books were made in Japan and one of these of 982 A. D. is said to be the oldest book in Japan. The coming of Buddhism into China in 67 A. D. brought many medical as well as new religious ideas to be mixed in with the Taoist practices of incantations, magic, etc. Medical schools were set up in the T'ang Dynasty (619-907 A. D.) Though there may have been ethical standards at first, they were apparently lost sight of. Old women and incompetent men took up medicine as a business and there were no government regulations to control them. There has been a decline in medicine since the Ming Dynasty (1368-1662 A. D.) In recent times anyone might prescribe drugs, which are accessible in the old style shops dealing in various preparations of animal, vegetable or mineral origins.

But we are interested more in recent medicine. A Jesuit, Father Ricci, introduced medicine along with science and religion and Kang Hsi the Emperor (1655-1723 A. D.) was cured of malaria by quinine. But modern medicine really began in 1805 when Dr. Pearson of the East India Company came to Canton. Dr. Livingstone of the East India Com-

*Presented to Tri-State Medical Association of the Carolinas and Virginia, meeting at Charlotte, Feb. 28th-29th, 1944.

pany helped Morrison, the first Protestant missionary, by opening a small dispensary. In 1834 Dr. Peter Parker, a Yale graduate, went out as the first medical misionary and following him there were 195 medical missionaries up to 1890. The work these men did in the face of ignorance, conservatism and indifference, if not active opposition, is something of which our profession can be proud. They built hospitals, treated an increasing number of patients, trained assistants and made books. They laid the foundations upon which it was possible to make the great advances which have been made by their successors. When I went to China in 1905 there were a number of so-called medical schools in the larger hospitals, and they did a very fine job and turned out many efficient physicians and surgeons. But 40 years ago there were probably not a dozen properly qualified Chinese doctors who had studied abroad, and so far as I know there was not a single Chinese nurse, although there were more or less efficient orderlies, men and old women.

The Peiping Union Medical College was started by several missionary societies in 1906. As you may know, it was taken over by the Rockefeller Foundation in 1916 and became the outstanding medical school of the East (until Pearl Harbor). Other schools were started or improved in the next few years, and medical education along with the development of better hospitals and clinical work went forward rapidly. In these early years practically all modern medicine was in the hands of medical missionaries. There were a few foreign practitioners in some of the ports, and as I have said a very few Chinese.

By the early 1920's six Protestant mission medical schools were in existence. The full-time faculties of these schools were small, but so also were the student bodies. The undergraduate instruction would compare favorably with that given in schools in this country. Our School of Medicine of Cheeloo University, Tsinan, Shantung, in 1937 had a staff of 34, 18 of whom were Chinese, five being heads of departments, and nearly 400 M.D.'s had been graduated in a period of 20 years. There was the Rockefeller Foundation School in Peiping; the British Government had a school in Hongkong, and the Japanese one in Mukden. By this time there were many Chinese doctors trained locally and abroad and the government was setting up schools faster than they could man and equip them. By 1937 two or three had grown to be very good schools. To go back a few years—in 1886 the Chinese Medical Missionary Association was formed and by 1915 there were enough young Chinese doctors to start the National Medical Association. By mutual agreement these bodies remained separate until 1932 when they both went out of existence, and then united to become the Chinese Medical Association. A fine example of real international coöperation. A few figures will help to bring out some important facts. In 1935 there were 230 missionary hospitals which employed 325 foreign doctors and 500 Chinese doctors, 270 foreign nurses, approximately 1,000 Chinese graduate nurses and 4,000 student nurses. Dr. Sze, Secretary of the Chinese Medical Association, now in Washington, says in his book published in 1943 that there are 310 hospitals in China, of which 235 are Protestant mission hospitals and 60 Government hospitals. Dr. Lennox, now of Harvard, made a survey in 1931 for "Fact Finders" and reported that there were 178,000 in-patients treated annually by mission hospitals and that there were 3,000,000 treatments given in the out-patient departments. Dr. Sze thinks there are now approximately 12,000 doctors (half of whom are well trained), and 38,000 hospital beds in the whole of China.

There is no need to emphasize the medical needs in China. Great progress was being made by the Chinese Government, with the coöperation of medical missionaries, in public health, health education, and the training of midwives. It was an encouraging picture and though of course there was room for improvement, real and rapid progress was being made. And then the Japanese attacked Peiping on July 7th, 1937, and the work was broken up in the East. Most doctors and educators have gone west and set up as well as they could their old institutions, separately or united *pro tem.* with others.

I will now say something about the diseases of China, many of which are also found in the United States. All three forms of malaria are very prevalent in the southern and central parts of the country, but there is very little of it in the north. I lived in the Yangste Valley for twelve years so saw something of the worst malarial area. The plasmodium falciparum was very common and the mortality from the malaria it transmitted was high. That was before the days of atabrin or plasmochin, but we used intravenous quinine on cerebral cases which is still considered the best treatment.

Tuberculosis is very prevalent throughout the country. General vital statistics do not exist, but I have figures for two cities, Peiping in the north and Hongkong in the south, where the mortality was estimated to be well over 300 per 100,000. Carefully recorded statistics from various mission hospitals ten years ago gave the incidence of tuberculosis in all hospital patients as approximately 5 per cent. Respiratory and non-respiratory were about equally divided. It is interesting to note that there is no evidence that any of the tuberculosis in China is of the bovine type. The ordinary textbook statement that children are infected by drink-

ing tuberculous milk is absolutely not true in China. Until very recent years practically no children drank any milk except their mother's.

The incidence of heart and arterial diseases is probably not as high as it is in this country, but I have not been able to get the facts on this. Rheumatic fever I think is not so prevalent but one sees arthritis in the clinics. The ordinary contagious diseases of childhood are about as they are in this country, but smallpox is much more common. Gradually vaccination is lowering its incidence. Syphilis and gonorrhea are fairly common, but I cannot give you any comparative statistics. Of course there are more untreated cases of syphilis than one would see here.

Rabies is more common than it is in the United States because there is practically no legal control of dogs. I have personally known a number of people who died of this disease. Tetanus is common and large numbers of infants die of it in their first two weeks of life. This is due to the methods used by the midwives in cutting the cord. I had one post-partum case, infected by a midwife, die of tetanus.

It has been estimated that there are a million lepers in China. There are special endemic areas in various parts of the country, but it is a disease that anyone practicing in China must be prepared to meet in his clinic. We had connected with our hospital one of the few leprosaria. The treatment of this disease is very unsatisfactory. Some claim a number of cures with chaulmoogra oil esters, but few doctors will discharge patients as more than "apparently cured." Some authorities consider the environmental conditions, food, exercise, etc., as more important factors in the treatment than the chemical.

Dysentery, both bacillary and amebic, are found in all parts of the country. There are other diseases which are practically non-existent in the United States. Cholera is endemic in many areas and breaks out in epidemics every now and then. I have never seen anything more dramatic than the resuscitation of apparently moribund cases by large quantities of intravenous saline. Cholera vaccine is now considered to be helpful and is used very generally. Kala azar is found in several areas in North China, and in these areas the percentage of infected cases is very large, making it one of the most serious diseases to be combatted. Though a great deal of work has been done on this disease, up to the present I think there is no positive evidence as to the method of transmission. The Phlebotomus, or sand fly, has been the suspect. The geographical distribution of this disease is difficult to explain. Untreated and constantly reinfected cases probably all die. Years ago the treatment was by intravenous sodium antimony tartrate, which was very effective but painful, and not without danger. In recent years the use of neo-stibosan and other antimony drugs has greatly improved the treatment and cut down the time of it from a few months to weeks. There are almost no complications and cases that are not too far gone can be cured. Schistosoma japonicum, the blood fluke, is very common in the Yangste Valley, but is practically never found north of the Yangste River, as Kala azar is never found south of the river. This disease presents one of the big public health problems of central China, similar to the problem that Egypt has with Schistosoma haematobium. The difficulty of course is with the snail which is the intermediate host of the fluke. Various drugs have been tried and I notice that fuadin has been advocated.

Typhus fever is endemic and is liable to break into epidemic proportions whenever there are famine conditions. So far as I know the type in China is the Asiatic variety which is carried by lice and has a heavy mortality rate. Relapsing fever is not so serious from the standpoint of mortality. It is also louse-borne. In South China bubonic plague is fairly common. In the north there is occasionally the pneumonic form brought from Manchuria, and primary pneumonic is fatal in every case. The organism is the same, Pasteurella pestis, and starts from rat fleas. In the north it seems to have a predilection for the lungs, and if the lungs are affected no rat flea is needed to disseminate the disease.

Probably all of the helminths found in North America are also found in China. Ascaris is common everywhere and unusual conditions sometimes arise from these infestations. Hookworm is common in the south and the Yangste Valley where the temperature and moisture are suitable for development, but it is very rare in the dry north. Clonorchis sinensis, a liver fluke, is common in cats and sometimes in dogs in the south-central portions of the country, but human infestations are rare, as the Chinese as a rule cook their fish, which is the second intermediate host of the fluke. Fasciolopsis buski, an intestinal fluke, is very common in a limited area in central China. The second intermediate host is the water nut. Infestation is often very heavy but the mortality is not high. Filariasis from Wuchereria bancrofti is very common in the south-central portion of the country but unknown in the far north. Diseases due to vitamin deficiencies are fairly widespread. Shansi Province in the northwest is notorious for osteomalacia. I have no statistics on malignant tumors, but my impression is that they are certainly as common as they are in the United States. China has not had yellow fever. The diagnosis of some of these diseases, especially malignant malaria and kala azar, may become of practical importance in U. S. A.

Trachoma
R. F. V.

This paper is not supposed to be concerned with the war, but a word might be said in regard to it. You all know the general facts, and that after nearly seven years the Japanese hold only the ports and other important cities and the railway lines. Chinese regular troops or guerrillas are operating even now near the coast. The two puppet governments in the north and the south have very little authority and I am sure that large numbers of those who make up these governments are at heart patriotic, and are only acting as puppets due to force and the necessity for self-preservation. The Japanese method of conquest is based on terrorism and destruction of industries, especially of education. I am sure that all of the atrocity stories of which you have heard are essentially true, but you must know that the treatment of different cities varied tremendously. Where the Japanese did not have to fight to capture a city the place was occupied with very little disturbance of the usual life of the people. Where they had to fight they usually turned the captured city over to their soldiers to do as they pleased. I could give you many instances of brutal treatment, and I could also give you a very few instances where the Japanese have showed a kindly spirit. But one thing I would like to emphasize—we cannot predict what the reaction of the Japanese is going to be in any particular circumstance that may arise. Their actions are motivated by "face," and by the defense mechanism of an inferiority complex. Are they going to continue to fight to the last man? And what is going to be their attitude towards the prisoners whom they hold when their own situation becomes more desperate? Many of us are deeply concerned over this last question, and I sincerely hope that no hot-headed acts are going to be perpetrated in our country which will react in endangering the safety of allied prisoners. I am sure our government realizes the importance of fair treatment of Japs in this country.

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