

The China Medical Journal.

VOL. XLII.

MARCH, 1928

No. 3

THE EPIDEMIC OF CHOLERA IN HINGHWA CITY, FUKIEN

1st to 25th September, 1927

M. K. YUE, M.B., B.S., D.P.H. (Camb.)

Hinghwa city has a magnificent city wall. A visitor, standing on the highest point of the city wall and with his back to the setting sun, will see before him, the plain with its rice fields, the innumerable irrigation canals and colonies of fruit trees till his gaze rests on the hazy line where the blue sea meets the arching sky. The plain, he will notice too, is encircled on either side by a range of mountains and near the shore by low hills. If he should turn about and face the setting sun, he will see that the low hills just outside the wall soon merge into more rising ranges of hills. If his attention is now directed to the spreading city below him, he will find that a water course traverses the city from north to south, dividing it into two parts known locally as the northern and southern portion of the city. He will notice that the northern portion is in fact a huge orchard with groups of a few houses here and there and that the southern portion has fewer trees and far more houses. Finally if he proceeds to go round the city on the wall, he will find that after a walk of an hour and a quarter (just under 4 miles) he will be at the point where he started and will also, during his walk, pass over four city gates and one water gate—the only means of access to the city. The above description serves to give an idea of the size of the city and its environment and shows that it is a very self contained unit, where the public health enthusiast, if given a free hand with adequate machinery, can produce very convincing statistics to justify his preventive measures! The city has an estimated population of 40,000.

The Epidemic. At the beginning of September, when the writer was away on holiday, a few cholera cases were reported and seen by our hospital doctors in the southern portion of the city—the business quarter. On the night of Sept., 4th there was a very heavy rainfall and two days later cases of cholera increased in a most alarming



Shanghai Sanitarium

manner—all the streets in the business quarter of the city being affected simultaneously. The writer got home hurriedly on the 8th of Sept., when the epidemic was at its height. The streets were deserted and Fear written on the faces of those seen walking about. The magistrate was at once interviewed and convinced of the seriousness of the epidemic and with his consent, the following preventive measures were adopted.

1. *A temporary cholera hospital.* A spacious monastery close by the hospital was converted into a temporary hospital. The long and airy running porches on either side of the court-yard served as ideal wards for the treatment of cholera patients. This temporary hospital had a staff of two doctors, four Chinese women nurses, two men nurses and a gate-keeper. It was kept running from the 9th till the 21st of Sept. Only 25 cases of cholera were admitted, although during the worst period of the epidemic, our doctors were called out to visit about eighty cases. Roger's line of treatment was followed. Kaolin and Tomb's Mixture were used in some cases as well. Out of 25 cases treated, 10 died. The cases were too few in number to yield any clinical experience worthy of record except that we found the suppression of urine with uræmic signs was promptly relieved by vigorous dry cupping of both loins—micturition being invariably established in a few hours after cupping.

2. *The 'pinking' of wells, anti-cholera propaganda etc.* No time was lost in inspecting the water supply of the business quarter of the city and the public latrines. Thirty two public wells were inspected and their proximity to latrines noted. The public wells are those situated close by the streets, from which anybody can draw water. During the survey, we were invited to inspect quite a number of private wells. The position of these wells was indicated in a rough plan of the streets so as to facilitate disinfection work. Orders were obtained from the magistrate to forbid the use of 4 wells and their adjoining latrines. In one case, the well was just ten feet across the street from two overflowing cesspools. The help of a band of students was enlisted to disinfect these wells with potassium permanganate—the 'pinking' of wells was chosen because it is the easiest method and not costly. The households were only allowed to draw water from 9 in the morning till 4 in the evening when the disinfection 'round' began. So by the 10th of Sept., most people were using pink water (obviously due to excess of disinfectant) and not uttering a murmur! Soon the idea got so popular that we were asked to disinfect many private wells as well. Propaganda was done in a most up-to-date fashion by the side of these wells where many people collected to witness our work. This band of young enthusiasts went about disinfecting and 'talking'

for a week up to the time when the epidemic curve had fallen considerably. A few observations in connection with this work might be of interest. All wells are supplied by surface and subsoil water and grossly polluted. The large number of leaking latrines and their close proximity to the wells is staggering. In water borne epidemics in Chinese cities and where conditions permit, the attack must first be made on these foci of infection. Again at the beginning of our work, we were prepared to meet with opposition but to our great surprise, we were received with open arms. Why so? I think a psychological explanation meets the case—Fear has driven the people to give western medical methods a trial. The moral is: There is a right psychological moment for public health measures in China. Don't miss it!

3. *Tomb's Mixture.* On the 9th and 10th of Sept., about 1500 four oz. bottles of Tomb's Mixture were sold at our dispensary! Taking the estimated population at 40,000, there was at the height of the epidemic about one oz. of the mixture to every seven people in the city. It can be said that the city was literally saturated with Tomb's mixture. According to Dr. Tomb, his mixture taken three times a day in doses of a drachm during epidemics affords almost absolute protection against the disease.

The Aftermath. What happened as the aftermath was full of humour and pathos. A group of the old gentry went about the city with their hats. Every household paid a subscription and a sum of three thousand dollars was duly collected. So it came to pass that in the first week of October, there was a great show in the city temple, the ceremony being known as "praying for peace." Each household was given two red lanterns to hang in front of the door. There was also an idol procession and the streets were diligently swept clean. The city was never cleaner! When will China realise that if health is purchasable it is purchasable not at the dark shrine of idols but in the white hall of Science? It is enough! We must take similar situations philosophically.

To recapitulate, the epidemic began in the first week of September; the peak of its curve was preceded by a very heavy rainfall; at the height of the epidemic, certain public health measures were instituted and by the end of the third week in September, the epidemic had almost passed away. There were about 150 deaths in all and the number of cases must be at least twice that. The writer does not wish, in any way, to assess the value of his preventive measures because his experience is limited. The writer wishes to record his thanks to the hospital men and women nurses who loyally helped him at the temporary hospital and to the band of students who did propaganda and disinfection work.

A HEALTH CAMPAIGN IN SOUTH CHINA

IVA M. MILLER, M.D., C.P.H.
Acting Director
Council on Health Education
Shanghai

“Strongly urge a Doctor of Public Health to come for the opening of our Health Campaign on November nineteenth.”

This message from the Canton Health Committee was followed by letters from “Y” secretaries, doctors and nurses in Canton who were eager to make their third Community Health Campaign even a greater success than the former campaign had been. This pressing appeal, coupled with the splendid reports of previous campaigns held in Canton, challenged the Council so that not only one but two members responded; the writer who has been a part of the organization for the past four years, has spent much time and effort in the promotion of School and Child Hygiene, and Dr. C. S. Kim, a Korean Public Health man, who has recently become our Field Director in the Department of Community Health, was asked to make his debut in his new work by contributing to the Canton campaign.

Acting upon the advice of the Health Committee, we arranged to reach Canton one week in advance of the opening date, in order to aid in the final Campaign plans. Accordingly, we left Shanghai on the S.S. “Macedonia”, on November 8, and arrived in Canton on the 12th, where we were cordially received by Miss Anita Jones, the Public Health nurse to whom so much of the success of these campaigns is due, and two Y.M.C.A. secretaries, Mr. Taam and Mr. Lockwood. They arranged a meeting with the Health Committee and the following program was outlined:

CANTON CITY HEALTH CAMPAIGN**I. Objectives.**

To promote interest in Child, School and Community Health.

II. Sponsors.

Canton City Y.M.C.A.

Canton City Y.W.C.A.

Hackett Medical College.

Turner Training School for Nurses and David Gregg Hospital.

Local Medical Practitioners and Nurses.



HEALTH WORKERS

Canton Health Campaign



Vaccination Booth



Eye Clinic Booth

III. *Organization.*

1. Health Committee :

Made up of representatives from each of the above organizations.

2. Sub-committees :

- A. Publicity
- B. Finance
- C. Exhibits and Demonstrations
- D. Lectures
- E. Daily Program

IV. *Contacts.*

With leaders in mission and government institutions, both medical and educational.

V. *Follow-up :*

A definite program of Health Education for several groups of people.

Due to the fact that the Infant Mortality Rate in and about Canton is remarkably high, the Committee felt that its major emphasis should be placed on positive health for the Infant and Pre-School Child, with instruction in Prevention of Accidents and Infectious Diseases. Furthermore, the Health of the School-Child and the Community at large were to receive some attention.

The Campaign Sponsors took an active interest in preparing for the event. The numerous Y. M. C. A. secretaries gave practically full time to this project, one or two Y. W. secretaries gave part time; doctors on the faculty of the Hackett Medical College and their students co-operated with the faculty and nurses of the Turner Training School for Nurses in preparation for the Health Exhibits. Volunteer assistance came from a number of local members of the medical profession and nurses in private practice or in homes of their own. These workers had all helped in previous campaigns and were well aware of the advantages of such a demonstration. In addition, the newly appointed Health Commissioner was asked to send doctors and assistants to vaccinate and direct the work in the Vaccination Booth.

The local Health Committee was composed of one or more representatives from the group of Sponsors with such co-opted members as were necessary. Upon this group devolved all the responsibility of the outcome of the Campaign and to them is due full credit for its remarkable success.

Of the Sub-committees, one of the most important was that of Publicity. This committee did nobly under the most trying circumstances. Several weeks previous to the opening, a letter was sent to each member of the Y.M.C.A. and the Y.W.C.A. announcing the Campaign and asking their sympathetic co-operation in spreading the news. Announcement notices were sent to all the local newspapers, but not one was willing to publish them free of charge for the editors insisted it was advertising. So the paper with the largest circulation was selected and a paid notice inserted for one week previous to the opening of the Campaign. During the Campaign, daily reports and special articles on health subjects were submitted to them but only a portion were given space in the paper. However, the Committee was able to do excellent work with street streamers and posters. The streamers were made of white cloth on which was painted a striking notice in black letters. The Campaign poster of a small child in a bath-tub was made by a local artist and printed in Canton. These were in evidence on all the main streets of the city.

The Finance Committee was composed of those who had been successful in raising funds previously and this year their expectations were not in vain. Every person interested in the subject of health was asked to contribute. In spite of disturbed conditions, the response was excellent. A few contributions came from friends in the U.S.A. The total sum reached \$800.00, Canton currency. With this amount, many expenses such as health literature, materials and labor for the erection of exhibit booths, transportation of local workers and other items were paid. It was not sufficient to cover transportation for the Council representatives.

The Exhibits and Demonstrations were housed in the Y.M.C.A. gymnasium. Nine booths were constructed of bamboo poles and strong matting. Each booth contained a table about six feet in length and four feet high. This table has a two-fold purpose, it not only gives a place for depositing the materials used by the demonstrator but keeps the crowd away so that the demonstration can be given and clearly seen by all.

In Booth No. 1, Dr. McBean and several medical students explained the value of Pre-Natal Care for every mother. In the next booth, a group of nurses carefully explained and demonstrated methods of hygienic preparation for the care of an obstetrical case in the home, giving details of preparation of the patient for delivery, the room and all necessary articles for the delivery and care of the mother and baby immediately after. In Booth. No. 3, Miss Lum, Superintendent of the Turner Training School and David Gregg Hospital Nursing Staff, with

her bright faced nurse pupils, demonstrated to attentive listeners the best known methods for bathing the baby and dressing him. In Booth No. 4, a Y.W. Secretary demonstrated Hygienic Clothing for the new-born and his brother, the Pre-School child.

Then came the Feeding Booth, where samples of the right and wrong kinds of milk to feed baby were demonstrated. After being shown the several kinds whose vitamin content had been destroyed in the preparation, more than one mother departed with a sample tin of Klim, Dryco or Vitamilk in her hand. Dr. Liang also demonstrated Proper Feeding for the Pre-School Child. In Booth No. 6, Dr. Liang lectured and demonstrated Methods of Infection and Prevention which can be used in any home. Fathers and mothers were especially interested.

At the Vaccination Booth, doctors and assistants from the Health Commissioner's office gave many hundreds of free vaccinations. During the process, the demonstrators lectured on the simplicity of preventive measures as compared to the complexity of curative methods.

In the Eye Clinic Booth, Dr. Chen of the Hackett Medical College faculty presided. Dr. Chen is very keen to rid the City of Canton from the plague of Trachoma. When he examined the eyes of all who desired it and found that 40 per cent of that mixed crowd of all ages were affected, he advised them to go to the nearest hospital clinic for treatment which would likely be a long, tedious process.

The Literature Booth was very popular. Here all the literature published by the Council on Health Education was on sale, also some pamphlets written by members of the faculty of Hackett Medical College and the Health Commissioner. All literature was sold at cost price.

This plan of providing demonstrators from the medical and nursing staffs of institutions required much executive ability on the part of the leaders. With fifty medical students and fifty nurse pupils in training, hospitals almost filled with patients and two faculty groups with full schedules, no less than twenty-five doctors and nurses were present each day at the exhibits from one o'clock in the afternoon to nine o'clock at night. Patients were well cared for in the hospital and only the afternoon classes were suspended for the week.

The program Committee did excellent work in arranging a program to suit everybody. On the opening evening, the Y.M.C.A. members and their friends were invited to come early for the health lectures to be given by specialists in health. Dr. Miller spoke on "What is

Health?" in English, which was translated into Cantonese dialect. Dr. Wen, Surgeon-General of the Canton Army, represented the Health Commissioner and gave a summary of the work of the Canton Department of Public Health. Dr. C. S. Kim spoke on "Health and National Prosperity." Dr. Kim speaks Mandarin but not Cantonese. In order to make himself understood by a Cantonese audience he had previously spent a few hours with a Cantonese teacher and on that evening gave a vigorous fifteen-minute lecture which was enthusiastically received by foreigners and Chinese. A daily Health Class was held for mothers at which the nurses took turns in giving instruction on the "Care of the Baby," "How to treat an Infection" and "Emergencies in the Home." Members of this class were most enthusiastic over this practical instruction in Home Nursing.

Every evening at seven o'clock, Health films on such subjects as "Malaria," "Care of the Baby," "How We Hear," "How We See," "How We Breathe," and "Tuberculosis," were shown in the Auditorium. All the activities were well attended by women as well as men, except for one day following a battle when the women feared to go on the streets. During this week, more than 28,000 persons passed through the building.

A most important feature of this Health Campaign was the health lectures given to students. Invitations came from many sources for this help. Whether in mission, government or private schools, the students seemed eager to hear the health message. At the Chung Shan University more than two thousand students listened intently to Dr. Kim as he urged them to join in a battle to fight disease and disease germs. At the Whampoa Military Academy some 2,000 prospective officers listened eagerly to a health lecture in Mandarin.

The value of making contacts in such a campaign cannot be over-estimated. Through the kindness of the Health Committee, we were able to meet the Health Commissioner for the City of Canton, the Director of Public Works, and the Commissioner of Finance, all of whom are very much interested in all work which tends toward the betterment of the health of the public. The Y.M.C.A. secretaries are splendid leaders in the establishment of good relationships between the mission and government authorities and to them can be given credit for leadership in Health Promotion in almost every city in China.

The Health Committee hopes that the Follow-Up work of this campaign may result in:

1. A continuance of the Annual City Health Campaign.



*Child Health Clinic
Hackett Medical College
Canton, November 1927*



*Child Health Campaign
Swatow, 1 January 1928*

2. The establishment of a number of Child Health Centers similar to the one at the Hackett Medical College which was started three years ago and has been a great success.

3. Renewed efforts on the part of doctors and nurses to demonstrate and teach Methods of Disease Prevention.*

4. Co-operation between the medical and teaching professions in promoting Health Education in the schools.

5. A Resolution on the part of each worker to teach, preach, and practise the rules of Personal Hygiene.

Although the City of Canton entered into a state of Communistic siege only two weeks after the close of the Campaign and many of the health workers were killed, we feel that the results of this Campaign have left an impression so far reaching that its benefits may be seen for years to come. The nurses in charge of the demonstration have been well-trained by Miss Anita Jones, the Public Health Nurse, so that they can carry on alone these demonstrations from year to year, for they have come to realize the tremendous opportunity for teaching Health lessons to those who need them so much. It is hoped that wherever these workers, whether doctors, nurses, or teachers, are located they may find opportunities to continue this practical method of interesting people in the subject of Personal and Child Health.

HONGKONG

From Canton we proceeded to Hongkong for a few days where several health lectures were given to students. From all reports, Hongkong is a most healthy city in which to live. The Y.W.C.A. has for several years conducted a Child Health Clinic to which many of the members bring their babies. Once a year a Baby Show is opened. In November this year they had "Child Health Week," which was unusually well attended.

SWATOW

Echoes of the Canton project had reached Swatow and when we arrived, we were met by an enthusiastic group of Y.M.C.A. secretaries who informed us at once of numerous meetings arranged for us to address. There were meetings for men, women, school girls and school boys. In spite of inclement weather, one day when the rain fell in torrents, every meeting was well attended. At a meeting for

*The Canton Y.M.C.A. decided to invite a Public Health nurse to become a regular member of their staff to follow up the stimulation to more healthful living inspired by the Campaign, by visiting in the homes of their members to give advice and instruction.

mothers when speaking on the "Care and Feeding of the Baby," my interpreter appeared most interested. The reason he gave me later was because he had a son six months of age who, at times, was not in the best of health. When those present were counted, it was found that there were more men than women present!

During our short stay, a committee of secretaries and business men met to discuss the possibility of holding a "Child Welfare Campaign" for one week beginning January 1, 1928. From the photo and reports that have come since, it was a success, at least the prize babies think so.

AMOY

The next stop was at Amoy, where again we came in close contact with Y.M.C.A. secretaries. Lectures were given by Dr. Kim at several churches and schools. Our main purpose for this stop was to see the work of the splendid Chinese engineer, Mr. Homer C. Ling, and to visit the modern water-works system which he has installed and is now directing for the City of Amoy. This is a notable plant for it is the first one in all China to be installed by a Chinese engineer, and financed entirely by a group of public spirited Chinese men. Amoy is reputed to be one of the most unhygienic cities in the world but already this health project of providing safe drinking water is having its effect. Streets are being widened, sacred bones long buried six coffins deep, are being placed in stone jars and deposited in a building for the purpose, thus freeing acres of land for new streets and building sites. Would that every city in China might follow Amoy's example!

Dr. Lim Boon Keng, as he personally conducted us on a tour of the building of Amoy University of which he is president,* told us that the splendid plant had been made possible by the generosity of one man. As we admired the magnificent natural scenery about the University he remarked simply, "Man made the buildings but God gave us this beautiful healthful view."

FOOCHOW

At Foochow we interviewed the Commissioner of Education, also a returned student who is particularly interested in introducing health education into the curriculum of every public school. He has a plan for a splendid project whereby every student may avail himself of bathing facilities free of charge.

The Director of Public Works, also a returned student, told us of numerous plans for the improvement of that ancient City of Foochow.

*Since this paper was written Dr. Lim Boon Keng has resigned this post,—
Editor.



AMOY CITY WATERWORKS

Reservoir and Dam



AMOY CITY WATERWORKS

Filter Beds and Laboratory

Plans are being made to deepen the harbor at Foochow so that ocean steamers may dock near the city instead of 25 miles below, at Pagoda Anchorage. Ancient and dilapidated stone bridges are to be replaced by concrete. A portion of low-land, now being filled in with mud from the river, is to be sold at a greatly increased price and the proceeds used to swell the small sum appropriated for city improvement.

Some echoes were heard of the instruction given to teachers in the Summer School in July, 1926. As the majority of the teachers were from rural schools outside of Foochow, few of them were seen.

SUMMARY

At each place visited we were impressed by the fact that Chinese leadership is in the majority. The Nationalist Government fully appreciates the value of modern trained men and women for government posts. In Middle Schools and Colleges, Medical Schools, Hospitals, Departments of Public Works, Public Health and Education, are men and women with modern scientific training, men and women of vision who realize that the future success of China depends upon that fundamental requisite, health. We found them keenly interested in all projects that have for their aim, health betterment.

Knowledge, clearness of mind, a broad vision, strength of will and sympathy of heart have been in the past and will be in the future, the inspiration of all high human endeavor. Health reform in China cannot be separated from social reform which finds its source in the highest aspirations of the people. These young Chinese leaders, many of them Christians, have these aspirations for themselves and their countrymen.

The Canton Health Committee expect to continue their annual health campaign to which they invite our help for this year. Having heard of the successful Canton campaign, we were invited to arrange for similar campaigns at Swatow, Amoy and Foochow. Since returning to Shanghai, Wuhu, Nanchang, Kiukiang and Tientsin have each petitioned for the same assistance.

With these constant requests for aid coming to the Council headquarters and the promise of such leadership in each city as we have seen, there is every reason to believe that Health will come to mean Wealth to the people of China as it has meant to other nations.

A BRIEF SURVEY OF THE PUBLIC HEALTH ACTIVITIES
IN SHANGHAI

C. S. KIM, M.D., DR. P. H.
Field Director
Council on Health Education

A Historical Sketch of Shanghai:

Of the early history of Shanghai, the searcher in the records finds but little to reward his labors. References to the place under the various names, Hu-tuh, Hua Ting-hai and finally Shanghai, occur from as far back as B.C. 300, but if the ancient archives are to be believed, life must have floated smoothly and uneventfully through centuries.

In A.D. 446 the Viceroy of Yangchow, under whose jurisdiction the place lay, was ordered by imperial rescript to cut a canal to link up the Soochow Creek with the Yangtze River. This being done, seems to have marked the beginning of Shanghai's importance as an anchorage. Its sheltered position, its proximity to the important centers of Soochow, Sungkiang and Hangchow together with the gradual silting up of the nearer approaches to the first two of the above named places, all helped little by little to make the port a favorite rendez-vous for deep water junks and a point for the trans-shipment of their cargoes.

In the last years of the 13th century or in 1292 (in which latter year, it is interesting to remember, the great Venetian traveler, Marco Polo, finally quitted China) the original town together with several adjacent villages was erected by an ordinance of the great Kublai Khan, the Mongol conqueror, then emperor of China, into a "hsien" or city of sub-prefectural status.

From about this time the growing wealth of the place seems to have attracted the unwelcome attentions of Japanese pirates, and the records speak frequently of raids. It would also appear that the Japanese were not the only offenders, since later references to "black slaves" and "white devils" indicate that Malayan and Portuguese free-booters may have occasionally preyed upon the trade of the port. The Japanese adventurers established a pirate's nest on Tsungming Island, lying in the Yangtze, directly opposite the mouth of the Whangpoo, whence they levied a heavy tribute upon all comers.

During the last century of the Ming Dynasty, before that house was overthrown by the Manchus, Shanghai became the birthplace, in 1562, of one who is considered by many to be her greatest son. Hsü Kwang-chi, a great official and a very learned scholar became the disciple of the Jesuit missionary, Ricci and embracing Christianity,

was largely instrumental in introducing "Western Learning" to the Court of China. For a long period the Jesuits enjoyed the favor of emperors and princes until internal quarrels among the various Christian religious orders assumed such serious proportions that all of them were ordered to quit the country. The great Jesuit establishment at Siccawei, near Shanghai, may be regarded as a memorial of Hsü Kwang-chi and his instructor, Ricci.

CHAPTER I—THE LOCALITY

Shanghai, the commercial capital of China and sixth in the rank of the world's great seaports, is situated in Lat. $31^{\circ} 15' N.$ and Long. $121^{\circ} 29' E.$ midwise of the China coast in the Province of Kiangsu. It lies on the left bank of the Whangpoo River some sixteen miles above its junction with the Yangtze River, China's most extensive waterway, and from earliest times the principal trade route to the interior of the country.

The Shanghai area comprises three separately administered districts, namely: (1) The International Settlement which has an area of 5584 acres or $8\frac{2}{3}$ square miles administered by 9 councillors representing the Ratepayers, and comprising men of British, American and Japanese nationalities; (2) the French Concession which has an area of 2525 acres or $3\frac{9}{10}$ square miles; the total area under foreign control is 8109 acres; (3) the old Chinese city and the districts of Nantao, Chapei, Kiangwan and Pootung *under exclusive Chinese administration* are lying to the South, North and West of the foreign concessions respectively, except the latter, Pootung which is on the opposite side of the Whangpoo River. The whole city of Shanghai, excluding the Settlements, is known as Greater Shanghai. It has two railway lines, one connecting with Nanking and the other with Hangchow. Ocean steamers travel from Shanghai into every corner of the world. Smaller steamers ply their way up and down the China coast or up the Yangtze River, while numerous foreign lines from the U.S.A., Canada and European countries make regular stops at Shanghai. The harbor of the Whangpoo River is one of the busiest in the world.

The city is located in the midst of a low-lying delta, so fertile that it has been known from time immemorial as the "Garden of China." This delta is the gift of the heavily silted waters of the Yangtze River which is still adding at the rate of about 2 square miles annually to the regained area.

All vegetation grows luxuriously in the humid atmosphere of Shanghai. Fine vegetables are grown in the gardens which surround the city.

In the foreign settlements, many public utilities are to be found, such as recreation parks, macadamized streets, gas and electric light plants, and the majority of streets are well lighted at night.

CHAPTER II—THE CLIMATE

The temperature ranges from 40°.18 in January to 83°.56 in August, giving an average in 1926 of 56°.85. The humidity range is from 71°.2 in April to 85°.4 in September, an average of 78°.4 for the year 1926. The rainfall averages 44.88 inches per annum, the greatest amount falling in one month was 11.13 inches. Snow and ice are rare. Winds are rare except in the typhoon season. Sunshine is common in the autumn until the winter rains begin, then only an occasional day is sunny until spring arrives.

CHAPTER III—THE PEOPLE

The combined population of Greater Shanghai is estimated to exceed one and three quarter million. Within the limits of the International Settlement the foreign population in 1926 was 29,947 and Chinese 810,279. In Frenchtown the foreign population was 7,811 and the Chinese 289,261.

Many industrial plants have been established since the opening of the electric light and power plant in 1893. Due to this and geographical location, there are scores of cotton mills, flour mills, steam silk filatures, tobacco and cigarette factories, printing and dock engineering works, match factories, egg-drying factories and cloth and silk weaving factories. These factories employ hundreds of thousands of workers, many of them women and small children. There are no uniform industrial regulations because of divided authority in the Shanghai area.* Due to this fact, the working hours in most factories are extremely long. An effort has been made by the Ministry of Agriculture and Commerce of the Peking Government to improve conditions in industrial plants by a set of regulations which are good but they are paper regulations only, there is no machinery to carry them out.

China was a member of the First International Labor Conference, held under the auspices of the League of Nations, in Washington, during October, 1919. This Conference passed resolutions, known as Draft Conventions, having reference to matters of industrial regulation. Each of the countries participating in the Conference or coming later

* It should however be noted that persistent attempts have been made by the mill owners to improve working conditions in the foreign mills of the International Settlement of Shanghai. *Editor.*

into membership of the League of Nations, undertook to bring the subjects of the conventions of this and subsequent conferences to the attention of the legislative body within the country, competent to take action with regard to them, and, as soon as possible, to ratify them. An eight-hour day for Western countries, a ten-hour day for Japan and India, and a day of reduced hours for China, was the subject of one convention. Limitation of the work of women at night, and in periods before and after childbirth, of another. Limitation of the work of children in factories, and the setting of a lower age limit of fourteen years, was the subject of a third. China, as being a member of the League of Nations, and as having been present at the first Conference at which her unique conditions were the subject of sympathetic understanding, has assumed an international obligation toward these questions. It is obvious, however, that the carrying out of these is contingent upon the possession by China of a stable government, able both to formulate policies and to create the machinery for their handling.

An effort has been made by the Joint Committee of Women's Clubs in Shanghai to secure some action in regard to the regulation of Child Labor. At the request of this committee, Dame Adelaide Anderson, an expert factory inspector, worked with a Commission appointed by the Shanghai Municipal Council to study the whole question of Child Labor in the factories of Shanghai. In their report they make a number of recommendations in line with the Chinese Government Provisional Regulations but realize that no real reform of present industrial conditions can be achieved unless it receives the moral and active support not only of the foreign residents but also the vastly greater body of the Chinese public.

CHAPTER IV—GENERAL SANITATION

All port medical and sanitary work in Shanghai is carried out under the control of the Commissioner of Customs. Regulations are agreed upon and sanctioned by the Commissioner of Customs in agreement with the Treaty Power consuls at the port.

There is one Port Health Officer, Dr. B. H. Stanley Aylward, who lives at Woosung, 12 miles below Shanghai on the left bank of the Whangpoo at its junction with the Yangtze. The quarantine anchorage is in the Yangtze nearby. On the right bank of the Whangpoo, opposite Woosung, is situated the quarantine station. Silting up of the river has made approach to the station somewhat difficult. The station has accommodation for some 200 persons; in case of need, additional accommodation could be provided in tents or huts, for which there is ample space. The station is divided into two parts, one for

Chinese and one for foreigners, and consists of a number of small buildings. There are two steam disinfecting machines and sufficient bathing accommodation. The Chinese portion of the station is administered by the Chinese Red Cross Society and is in the care of a resident Chinese medical officer. The Port Health Officer exercises supervision over the whole situation.

There is one American Health Officer, Dr. V. B. Murray, Surgeon of the U. S. Public Health Service, stationed at Shanghai, who is known as a Port Health Officer, but whose work is health supervision over American steamers.

The quarantine regulations of Shanghai take cognizance of the following diseases: plague, cholera, typhus fever, yellow fever, small-pox, and scarlet fever. Ports are declared infected when the average daily number of cases of any of the above diseases amounts to three in any one week. Ports are declared infected by the Commissioner of Customs in agreement with the Treaty Power consuls.

An infected vessel is one which has on board, or has had within a period of 10 days prior to her arrival, a case of any of the above diseases. A suspected vessel is one which has been at an infected port within a period not exceeding 10 days of her arrival in Woon-sung, or a vessel on board which a death has occurred during the voyage from her last port of call. Infected and suspected vessels anchor at the quarantine anchorage and are boarded by the Port Health Officer.

Bills of health are issued by the Public Health Department of the Shanghai Municipal Council although this department is in no way directly concerned with port health procedure. The ordinary British Consular bill of health form is the one employed and to it is attached the most recent weekly statement regarding the incidence of communicable disease in the Municipal area.

The water supply of the International Settlement is furnished by the Shanghai Waterworks Co., an organization independent of the Municipality. The water is obtained from the Whangpoo River, Sulphate of Aluminum is added and it passes through sand filters, some rapid and some slow, and is finally sterilized by liquid chlorine.

Sewage is disposed of at the three disposal plants outside the Settlement. One is located at Yangtszepoo, one beyond the Rifle Range and the other on Lincoln Avenue. Even these three large plants are unable to take care of all the city sewage. Before the disposal plants were installed cesspools were popularly used and also the bucket system which is still in vogue in many streets.

Human excreta is used for fertilizing the fields and gardens. In this section of the country, large open jars of water contain the diluted night soil which is applied to the gardens by means of large dippers. Animal manure is utilized in the same way.

Refuse is collected by scavengers and used in filling low places in the landscape and when low land is not available it is carried to the Yangtze River delta for disposal.

Many foreign dead bodies are disposed of by cremation but Chinese custom demands that their dead shall be buried in a coffin either below the ground or under a mound above the ground, and consequently the method of cremation is little practised by Chinese.

Buildings such as dwelling houses and schools are generally located outside the business districts. Factories are in the district adjacent to the Whangpoo River and Soochow Creek.

In the Settlements, the inspectors are constantly diligent in destroying the rat nuisance which is effectively carried out. Flies and mosquitoes come in for their share as an annual campaign is carried on against them. There is no compulsory power as there is no public health legislation. The work is largely carried out by mutual cooperation and by stringent licensing conditions for food shops, dairies, laundries, tailor's shops, etc.

Shanghai should be congratulated on the large number of dairies which are rated as "Grade A" by the Department of Health of the International Settlement. Some of these are located in the Settlement, while many are in the Chinese city.

The railway lines start from the Chinese city and are under the city regulations but the health authorities have little jurisdiction over them. The railway companies have some sanitary regulations but it is difficult to put them into operation due to the fact that the trains are always overcrowded either by ordinary travelers or soldiers.

The International Settlement boasts of one steam laundry under foreign supervision; all others are of the usual hand type. All are licensed and inspected regularly by the health inspectors.

CHAPTER V—VITAL STATISTICS

Dr. Norman Whyte says in regard to the International Settlement:

"The population of the Municipal area is a fluctuating one; males are in excess of females in the proportion of 3 to 2. There is constant communication between the population of the foreign settlements and

of the surrounding Chinese territory, in which there is just a beginning of modern public health administration. Very densely populated areas in the foreign settlement run into very densely populated and deplorably insanitary areas on the Chinese side of the boundary-line. Thus, when one speaks of disease and death statistics and sanitary conditions generally in the Municipal area of Shanghai and in the French Settlement, one is, in fact, talking of conditions in a portion of a considerably larger town, a town having an aggregate population of some two millions."

"If these facts be borne in mind, it will be appreciated that any attempt of the Public Health Department of the Shanghai Municipal Council to prevent the spread of disease to or from the area under their jurisdiction is fraught with immense difficulty and that the threat of epidemic disease from China is ever present."

"Neither the notification of communicable diseases nor the notification of deaths is legally compulsory in Shanghai, and there is no birth registration enforced among the Chinese population. Qualified medical practitioners of Shanghai, however, are paid a fee for the notification of communicable diseases, and the services of the Public Health Laboratory for the diagnosis of these diseases are at the disposal of such practitioners in return for such notifications. In this way a small proportion of the cases of communicable disease that occur within the Municipal area are notified to the Public Health Department."

"With regard to registration of deaths among the Chinese, each house in the International Settlement is visited each day by a refuse coolie, who reports all deaths to the sanitary inspector in charge of the sub-district concerned. The latter official then institutes inquiries as to the duration of sickness, symptoms, etc. and thus arrives at an approximate diagnosis of the cause of death. The number of deaths certified by qualified medical practitioners form but a small proportion of the whole. It is considered that only a small percentage of the deaths that occur in Shanghai escape record, certainly not more than 15 per cent., probably considerably less. Though this be so, the death-rates based on recorded mortality are far from affording an accurate index of public health conditions among the Chinese population of the Settlement. When Chinese suffer from chronic or incurable complaints, it is by no means uncommon for them to leave the Settlement for their native villages, there to await death. It is probable, then, that the deaths recorded in Shanghai are chiefly those attributable to acute diseases, accidents and the like."

“Below are given in tabular form the death-rates for each year since 1910 of the foreign resident population and of the Chinese resident population respectively :

Year	Death-rate of Foreign Resident Population	Death-rate of Chinese Resident Population
1910	20.2	17.5
1911	15.9	13.8
1912	18.9	19.3
1913	18.6	15.8
1914	18.0	16.2
1915	15.4	13.2
1916	14.0	13.0
1917	20.7	14.9
1918	16.5	12.8
1919	20.6	14.3
1920	15.2	11.2
1921	18.2	11.0
1922	19.3	11.7
1923	17.2	10.3
1924	17.1	11.2
1925	16.4	11.2
1926	20.1	15.3
1927	14.9	12.3

“From the above table it will be seen that there has been an appreciable decline in the reported Chinese death-rate, which was as low as 11.2, 11.0 and 11.7 in the three years 1920-22, rates very much lower than those of the foreign population for these three years. Bearing in mind the conditions in which the Chinese population live in the more crowded parts of the town, these death-rates are incredibly low, a fact which is explicable by considerations referred to above. Corroboration of this contention is afforded by a study of the morbidity and mortality returns of the Shanghai Gaol. The annual gaol mortality rate is generally in the neighborhood of 60 per 1,000. (Since reduced to an average of 14 per 1,000). Nearly three-quarters of the deaths in gaol are attributable to tuberculosis. Prolonged observations have shown that 65 per cent. of long-sentence prisoners admitted into the gaol have signs of tuberculosis on admission. This figure is sufficient to indicate the terrible prevalence of this disease among the Chinese resident community, though, of course, the prison population is recruited chiefly from the very lowest strata of the social scale.”

"Whereas three-quarters of the gaol deaths are caused by tuberculosis, this disease is responsible for only some 10 per cent of the recorded mortality among the free Chinese population. The assumption that sufferers from this disease, in acute form, leave the Settlement to die elsewhere thus finds abundant support."

During 1922, the reported Chinese deaths in the Settlement numbered 9517, as compared with 8610 in 1921. The causes to which some of these deaths were ascribed are set out in the following table:

CHINESE DEATHS IN 1922

Month	Small-pox	Cholera	Diphtheria	Scarlet Fever	Cerebro-spinal Fever	Tuberculosis	Influenza	Beri-Beri	Measles
Jan.	150	0	10	21	0	58	25	4	32
Feb.	56	0	9	25	0	77	14	0	30
Mar.	16	0	6	22	0	70	20	0	42
Apr.	6	0	13	19	3	73	17	1	52
May.	2	0	10	28	1	80	11	2	30
Jun.	0	0	0	16	3	72	5	0	19
Jul.	0	35	0	7	0	97	0	1	5
Aug.	0	44	0	0	1	86	2	6	0
Sep.	0	20	1	5	0	66	0	3	0
Oct.	0	1	2	3	0	63	0	4	0
Nov.	0	0	0	2	0	55	0	2	1
Dec.	0	0	2	1	0	73	4	0	1
	230	100	53	149	8	870	98	23	212

The notification of communicable diseases is too imperfect to warrant discussion of the number of cases reported from year to year. With regard to deaths, however, the figures in the above table indicating the deaths caused by acute communicable diseases are an approximately accurate index of disease prevalence. From what has been said already, it will be understood that this remark certainly does not apply to tuberculosis and beri-beri."

"Taking all the circumstances into consideration, it seems unlikely that an acute epidemic causing appreciably increased mortality could prevail undetected in the International Settlement of Shanghai."

CHINESE DEATHS IN 1926

Month	Small-pox	Cholera	Typhoid Fever	Diphtheria	Scarlet Fever	Cerebro-Spinal Fever	Tuberculosis	Influenza	Dysentery	Measles	Total Deaths
Jan.	58	0	28	5	61	0	93	10	7	25	1021
Feb.	47	0	19	19	105	0	81	9	10	43	1028
Mar.	41	0	18	8	117	0	86	10	8	93	1059
Apr.	12	0	26	10	93	0	93	5	6	94	1052
May	8	0	22	33	87	2	96	6	7	71	1016
Jun.	1	0	32	14	51	3	91	3	13	32	921
Jul.	2	83	36	2	24	0	110	0	15	10	1106
Aug.	0	205	59	1	10	0	142	0	28	3	1521
Sep.	0	58	49	2	7	0	84	0	63	1	1123
Oct.	0	20	48	1	3	1	99	1	64	0	982
Nov.	0	0	28	8	10	0	90	3	29	0	815
Dec.	0	0	32	2	8	0	62	1	10	3	682
	169	366	397	105	576	6	1127	48	260	375	12326

In regard to some of the epidemic diseases, Shanghai also suffered from the influenza epidemic in 1918. A few sporadic cases of cerebro-spinal fever have been reported. Scarlet fever is a common disease among the Chinese with a high mortality rate. Typhoid and Paratyphoid are common among foreigners and mortality is high. Typhus and Relapsing Fever are not endemic though a few cases have been reported. The mortality from these cases is low. Dysentery, both the bacillary type and the amebic, is common. Cholera and small-pox are prevalent and the mortality from these diseases is high. Plague infection is rare. Few bubonic cases have been reported and none of the pneumonic form. This is probably due to the constant plague preventive measures taken by the Municipal Department of Public Health extending over a period of 25 years. Such great vigilance has been shown in the examination and extermination of rats that for one period of seven years, no evidence of human plague infection was found.

CHAPTER VI—HEALTH ADMINISTRATION

1. INTERNATIONAL SETTLEMENT

DEPARTMENT OF PUBLIC HEALTH

The Public Health Department of the International Settlement is administered by a Chief Health officer or Commissioner of Public Health. Dr. C. Noel Davis, a Public Health man of many years experience in China, is the present Commissioner.

In this Department are sixteen physicians, nine of them Chinese and the remainder British. There are seventy-one graduate nurses and probationers employed in the five hospitals. The hospitals are: Country, Victoria Nursing Home, Isolation, Chinese Isolation, and the Mokanshan Sanitarium.

A. *Division:*

(1) *Administration :*

Under the Administration Division is the business organization and the care of cemeteries. The work of the other Divisions is as follows :

(2) *Laboratories :*

(a) *Pathological :* Diagnosis of specimens for practitioners and hospitals, analyses of water, milk, ice-cream, preparation of small-pox and other vaccines, Pasteur treatment, examination of rats for plague.

(b) *Chemical :* Chemical analyses (1) foods, milk, liquors, drugs. (2) Water Works and well waters. (3) Specimens from practitioners and hospitals. (4) Toxicological and forensic. (5) Miscellaneous from public. Preparation of sprays and liquids for the Sanitation Division. Reports and Advice on Chemical Problems in Public Health Work.

(c) *Pharmaceutical :* Purchase of drugs, dressings, medical and surgical sundries, preparation, compounding, dispensing, issue and control of supplies to Municipal Hospitals and Clinics, other departments and outdoor staff, scrutiny of prescriptions supplied to Municipal employees.

(3) *Hospitals :*

The Hospital Division comprises the medical and nursing services which are administered by an Assistant Commissioner of Public Health. The various units are as follows :

A. *Medical Services*

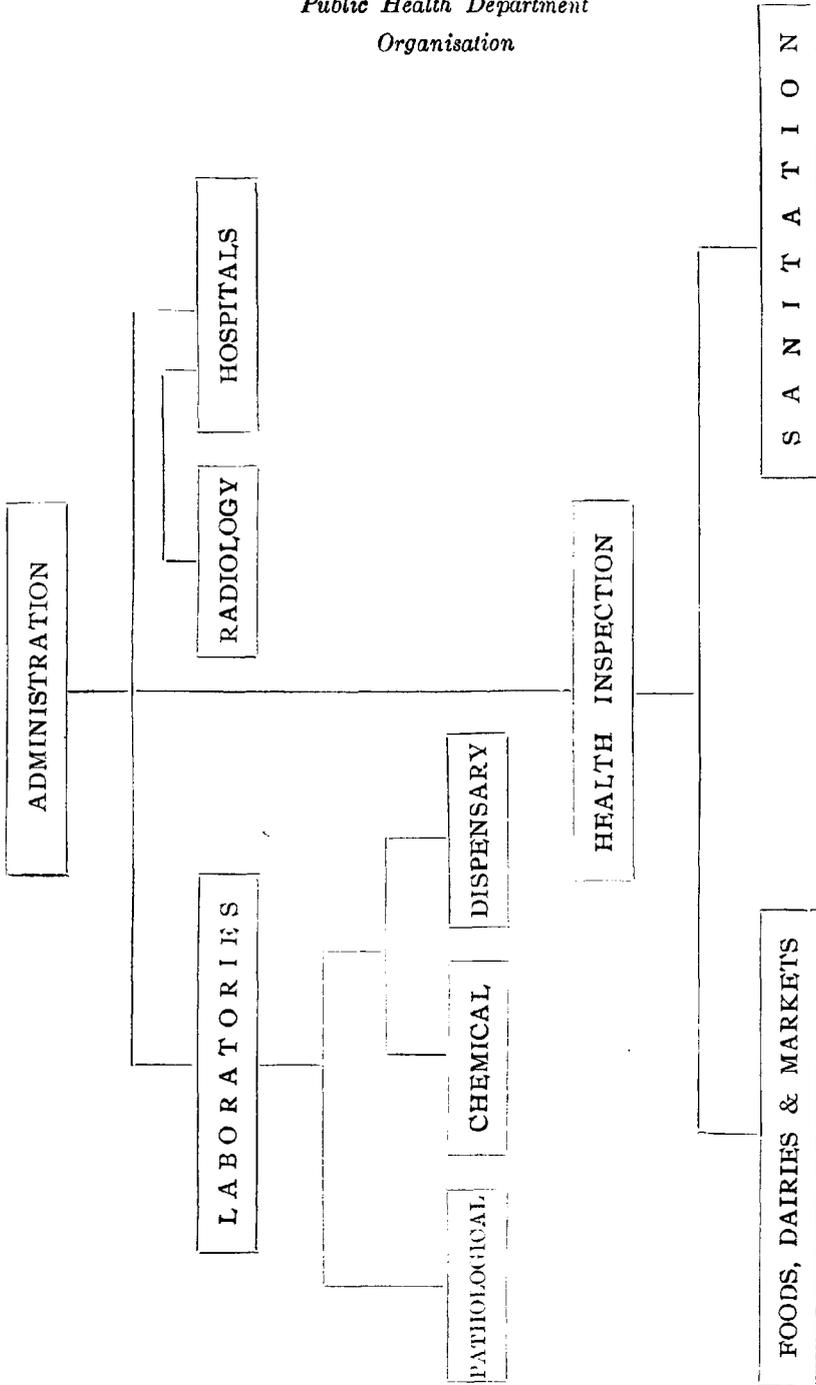
1. *Isolation Hospitals*

- (a) Foreign
- (b) Chinese

2. *Police Hospitals*

- (a) Indian Police Force
- (b) Chinese Police Force
- (c) Fire Brigade

Shanghai Municipal Council
Public Health Department
Organisation



3. *Free Clinics*
 - (a) Venereal Disease
 - (b) Tuberculosis
 4. *Gaol Medical Service*
 - (a) Ward Road
 - (b) Amoy Road
- B. *Nursing Services*
1. All Municipal Hospitals
 2. Private Nursing Service
- C. *Miscellaneous*
1. Medico-Legal
 2. Police Department
 3. Mixed Court (Shanghai Provisional)
 4. Examination of Candidates for Municipal Employment
- (4) *Food, Dairies and Markets Division :*

This Division takes care of the food and water supply, supervising the preparation and sale of food and giving particular attention to the local dairies. Every dairy in the Settlement is licensed as well as the food shops.

There are 13 Municipal markets in the Settlement, the one located in Hongkew district being the largest, and perhaps as much or more business is done there as at all the others put together.

(5) *Sanitation Division :*

This Division controls Health Inspection in the four districts, namely: the Central, Northern, Eastern and Western. In each of these districts there are a number of Branch Health Offices, provided according to the density of population.

The general type of work inspected in this Division is as follows :

- (1) Removal of house refuse.
- (2) Removal of ordure (removal of ordure in the Western district has been transferred to the Public Works Department since December 1927).
- (3) Mosquito Reduction.
- (4) Fly Reduction.
- (5) Laundry Inspection.
- (6) Inspection of Tailor Shops.
- (7) Lodging Houses — Routine inspection and monthly disinfection in the lower type lodging house.
- (8) Rodent Eradication.
- (9) Publicity—Lectures to school children, lantern slides and cinema films used.

2. FRENCH CONCESSION

DEPARTMENT OF PUBLIC HEALTH

A. Divisions :

(1) Administration :

This department is under the direction of a Health Officer, Dr. Velliot, who is known as the Director of Public Health. His associate, who gives part time only, is known as the *Sanitary Medical Officer*.

(2) Activities :

(a) *Laboratory Examinations* are done at two places, namely :

- A. Bacteriological, at St. Marie's Hospital.
- B. Chemical, if simple, at the Health Office.

If complicated, they are sent to the Shanghai Municipal Council Laboratory.

- (b) *Water Supply* : The waterworks plant is under the Municipal Council. The supply comes from the Whang-poo, it is treated with Sulphate of Aluminium and passed through slow sand filters. Chlorine is not being used now but it is contemplated that very soon rapid sand filters and a chlorine apparatus will be in use.
- (c) *Sewage Disposal* : Water carriage sewage disposal is not in use in this Concession. Septic tanks are numerous but the bucket system and the sale of night soil still prevails.
- (d) *Vital Statistics* : Are inadequately kept. Cases of communicable diseases are reported by the practitioners. These are sent to the Shanghai Municipal Council Isolation Hospital due to a mutual agreement between the authorities of the two Municipalities.
- (e) *Health Inspection* : Such places as restaurants, foodshops, markets and laundries are regularly inspected.
- (f) *Refuse and Garbage Disposal* : This is collected daily and sold to contractors who realize quite a profit from the sale for filling land.

The Health Officer expressed himself as glad and willing to co-operate with the Public Health Department of the Municipality of Greater Shanghai.

3. THE MUNICIPALITY OF GREATER SHANGHAI
DEPARTMENT OF PUBLIC HEALTH

The Municipality of the Special Area is constituted of Nantao, the old Chinese City, Chapei, Pootung, Kiangwan, and Woosung, with a combined population of one million people.

The Department is under the direction of the Health Commissioner, Dr. Hou Ki Hu, and is composed of three Divisions:

(1) *Division of Sanitation and Street Cleaning:*

The present activities of this Department are the removal of refuse or night soil. For the latter, a substantial sum is paid by contractors for the privilege of removal to use for soil fertilization purposes. Fly and Mosquito control are under the direction of a trained field worker whose aim is to eliminate the breeding places. The water supply is chlorinated and results checked by laboratory examination. Sanitary police are being trained to make sanitary inspections and to investigate causes of deaths and to report births and deaths.

(2) *Division of Vital Statistics, Regulations of the Practice of Medicine and Meat Inspection:*

The initial steps taken to secure vital statistics data are limited to deaths only. Undertakers, charity institutions and establishments where coffins are sold or given free, are supplied with special forms to be duly filled out whenever a request for a coffin is made. In addition the scavengers are obliged to report to their supervisors when a dead infant is found in a refuse box and they in turn report the death to the Department.

Regulations for the practice of medicine have been inaugurated regardless of strong opposition from the native trained Chinese physicians. After several months of strenuous work, arrangements have been completed whereby Chinese and Western trained physicians may be registered with the Health Department. Already 400 Western trained and 1300 native trained are registered. The foreign doctors who expect to practise in the Municipality of Greater Shanghai are requested to register at this Department as the regulations for Western trained physicians are applicable to foreign doctors, too.

Meat inspection is limited to hams and meat products for export. Two American trained veterinarians are employed by the Department of meat inspection and certification.

(3) *Communicable Disease Control and Laboratory:*

The hospitalization of Communicable Diseases is not attempted because of the lack of accommodation in local hospitals. An intensive

campaign against small-pox has been carried out by the establishment of a number of free clinics for vaccination. All the students in the public schools in this Special Area are requested to be vaccinated. Inoculations against cholera are also given free at the vaccination clinics. In order to educate the community in the prevention of cholera and small-pox, six hundred thousand preventive handbills have been distributed to the families in this Area.

The Laboratory of the Department, under Dr. S.F. Chiang, is fairly well equipped for diagnostic work. Bacteriological examination of water, milk and wines is carried on regularly. Laboratory service for registered physicians, including Wasserman test is done free of charge.

4. VOLUNTARY HEALTH AGENCIES

A. COUNCIL ON HEALTH EDUCATION

History:

This organization was started sixteen years ago by the pioneer Public Health enthusiast, Dr. W.W. Peter. Together, Dr. Peter and Dr. S.M. Woo conducted Health Campaigns in the large cities in ten of the provinces in China. Interest in health was aroused by means of health posters, books and pamphlets on popular health subjects, lectures and health films and slides.

The Council Staff is made up of the Director and heads of the five departments. Dr. Iva M. Miller is the present Acting Director. The departments are as follows:

1. Administration.
2. Community Hygiene (under which this Survey was made).
3. Child Hygiene.
4. School Hygiene.
5. Chinese Literature.

For the past five years, the School Hygiene Department has endeavored to do intensive work through the provincial educational associations. Courses in Health Education have been given to teachers in Summer Schools and Institutes. Courses in Public Health Administration, Communicable Diseases, School and Child Hygiene, have been given to classes in two medical schools in Shanghai. This Department has been active in promoting the Five-Fold Program for the betterment of student health. This program is as follows:

1. A periodic health examination for every teacher and every student.
2. Improved school sanitation to be checked up by a sanitary survey of each school.

3. A place for Physical Education or Supervised Play in every school curriculum.
4. Systematic or daily Health Teaching in every grade.
5. Training of Health Workers in Normal Schools, Medical Schools, and other institutions.

A program of Dental Prophylaxis was carried on for three years in Primary and Middle Schools.

For several months a weekly article on School Health was contributed to the Bulletin, issued by the National Association for the Advancement of Education. Book 1, of a series of manuals for the guidance of teachers in health teaching, has been published.

In the Department of Community Hygiene during 1927 one request for help in a Health Campaign, has been met. The Health Committee in Canton made up of Y.M. and Y.W. secretaries, doctors, nurses, and teachers, sent an urgent request for aid. The Council responded by sending two members of its staff. Health Exhibits were held in the Canton Y.M.C.A. building. Contacts were made with all the Middle Schools, Colleges, Hospitals, and Medical Schools and with the various heads of the departments in the Municipal Government. The Health Commissioner gladly co-operated in every possible way to make the Campaign a success. More than 28,000 persons attended the exhibits and lectures in the Y.M.C.A.

The Child Hygiene Department has been active in co-operating with the numerous Health Centers in Shanghai. For the past year it has supported a Public Health nurse at the Health Demonstration Center of the Margaret Williamson Hospital and at present is donating the services of its dental hygienist one day a week to the Nan T'ao Health Center.

Through its Department of Chinese Literature the Council is co-operating with the Department of Health of the Municipality of Greater Shanghai by giving the services of the head of the Department. "Health," formerly its bi-lingual magazine issued quarterly, has now become a monthly magazine in Chinese with an English supplement quarterly. Its weekly Health News Service is now regularly used by more than one hundred newspapers. This service to the public is issued jointly by the two organizations.

B. MARGARET WILLIAMSON HOSPITAL HEALTH DEMONSTRATION CENTER

The Public Health Demonstration Center of the Margaret Williamson Hospital began its career in September 1927, with a Public Health nurse, Miss Hazel Taylor, a Chinese graduate nurse, Miss Chang Su O, and a number of pupil nurses. The Hospital Staff furnishes a doctor

for the Well Baby Clinic one morning each week. The nurses follow up all the obstetrical cases which leave the hospital and urge the mother to bring her baby to the clinic at least once a month. In this way the career of many a child can be followed until he is old enough to enter school.

The nurses also follow up clinic cases which require treatment at home; they bring patients to the out-patient department who might otherwise not come. They take time when in the home to teach the mother how to care for her baby and to keep him well and, best of all, they take with them and plant in each home the spirit of friendship. Such admirable service applied to the homes in Shanghai will do more to bring peace to China than arms and ammunition can ever do. Would that the number of Public Health nurses be multiplied by one hundred or one thousand!

C. NAN T'AO HEALTH CENTER-BABY CLINIC

At Nan T'ao Institutional Clinic, near the small East Gate of the Chinese City, a weekly Clinic is held at which four nurses are present to bathe, weigh and measure the babies. Miss Tsai, a Public Health nurse trained at the Health Demonstration Center in Peking is in charge of the Baby Clinic and Home Visiting. She is assisted by Mrs. Wu.

D. Y'S MEN'S CLUB BABY CLINIC-CHAPEI

In August 1927, a group of enterprising Chinese business men and physicians, members of the Y's Men's Club, started a Baby Clinic in a crowded district in Chapei. Six physicians each give a half day each week to examination of babies and advice to mothers. Two nurses help in the clinic and bathe the babies, also visit in the homes to give advice and help to the mother of the family. From the splendid results already obtained, this clinic is meeting a real need. Every mother is eager to learn how to keep her baby well.

CHAPTER VII—SUMMARY

In general, the Departments of Public Health in Shanghai are each making a noble effort to improve the health of its own Community. The International Settlement is the pioneer in Public Health, the French Concession next in line, and the Municipality of Greater Shanghai a mere infant which began its work less than two years ago. Friendly relations are maintained between the departments. The Municipal Laboratory in the Settlement did splendid work during a recent cholera epidemic in the periodic bacteriological examination of water from the Soochow Creek, the source of supply for the district of Chapei. Advice was given to sterilize the water by chlorination, which was done, and the epidemic soon ended.

Unfortunately, as yet, no satisfactory method of recording Chinese births has been found by any one of the three Health Departments.

Death statistics are recorded only of those persons large enough to occupy a coffin. Still-born babies and infants are often buried wrapped in cloth or matting.

Isolation of cases of Communicable Disease in general is still a problem for the future. Lack of hospitalization is one serious drawback to isolation but not so serious as the uprooting of a custom centuries old, for Chinese custom, as formerly in other countries, is to invite all the friends in to visit the patient. Only strict military discipline will succeed in making isolation of these cases a success.

Each department maintains Vaccination Clinics and give free vaccination to all who desire it. This measure, combined with lectures, street posters and knowledge disseminated by the press, has done much to decrease small-pox morbidity. The Council on Health Education has made a valuable contribution to this cause through its small-pox posters, literature, slides and films, public lectures and general health education for primary teachers.

Special clinics for Tuberculosis and Venereal disease are prominent features in the Settlement health program.

As yet there are no general clinics for the treatment of Trachoma, except those maintained by the various hospitals in the out-patient department. A number of schools which have their own physicians are making a special effort to eliminate Trachoma from the school by means of regular treatment and education in preventive measures.

The Chinese Department of Public Health is taking the lead in the registration of physicians, midwives and nurses. Old style and Western trained physicians are registered upon presenting a diploma or passing an examination. Some midwives and nurses have attempted to coerce the Health Commissioner into giving them a physician's licence, but failed. The Settlement registers only Western trained physicians as does the Frenchtown Department.

The opportunity for co-operation of health agencies in Shanghai is a rare one. The cosmopolitan nature of its inhabitants and customs is likely to make adjustment a little difficult, but on what better basis can nationalities unite than on the uniform desire for better health for their people? With the attitude of the present organizations and the Voluntary Agencies which is most cordial and friendly, if they could present a united front as the Department of Public Health of Greater Shanghai and prepare to fall in line with the Nationalist Government which has a remarkably fine ideal for a health program, this

international co-operation for health betterment for all nationals would, no doubt, be a step toward international peace, which is the desire of every heart.

BIBLIOGRAPHY

1. Public Health Report, by Norman Whyte.
2. China Year Book 1926.
3. Gow's Guide Book to Shanghai.
4. Bulletin No. 1 of the Joint Committee of Shanghai Women's Organizations.
5. Dennett's Americans in Eastern Asia.

THE FUTURE FOR PARASITOLOGY IN CHINA*

ERNEST CARROLL FAUST, Ph.D.

To state that parasitology has a future in China is but to relate a self-evident truth. On the other hand, there is not only ample justification but definite need to outline the probable trend of this subject in China in the immediate future, and to indicate the phases of the subject which deserve particular emphasis. Parasitology in China is now fifty years old. Up to the present time its development has been almost exclusively in relation to tropical medicine, and as such had its birth in the work of Sir Patrick Manson in Amoy (1872-1884). The constant contact which medical men from the West, practising in China, have had with human parasitic infections of an unusual type and in an unusually large amount, has been responsible for the elucidation of the biology, epidemiology and pathogenicity of many of the animal parasites peculiar to this country. Data of a nosogeographic nature have also been gradually accumulated, so that the relative incidence of infection of these parasites is becoming more fully understood. Thus kala azar is known to be confined to certain stretches of territory north of the Yangtze Valley; clonorchiasis has been found to be an infection almost exclusively incurred by man in Kwangtung Province; and paragonimiasis in Chinese patients has been shown to be acquired in the adjacent areas of Japan, Korea and Formosa rather than in China proper. Much has also been accomplished in discovering the climatological and other

*Contribution no. 95 from the Parasitology Laboratory, Department of Pathology, Peking Union Medical College.

Read at the Meeting of the China Branch of the American Society of Parasitologists. January, 1928.

physical factors of a given part of the country or the peculiar customs of the population in such an area which have been responsible for the pandemicity or the strict localization of such diseases.

Almost without exception it has been the Western physician or medical parasitologist who has carried on the investigations that have led to the solution of these problems. Only within the past five years, have the names of Chinese collaborators become increasingly more conspicuous in these undertakings. The development of *interest* in the subject of parasitology must have preceded actual *participation* in research activities, and in no small percentage of cases harkens back to special courses of instruction which Chinese students have attended abroad or at home. The future of medical parasitology in China will rest largely with such interested individuals or with such groups as the Chinese members of the China Branch of the American Society of Parasitologists. As yet the number of those with training in this subject acquired in China, sufficient for undertaking independent investigation, is entirely too small to carry on without the counsel and direction of Western-trained experts. But within a decade I hope to see the China Branch of the American Society of Parasitologists with sufficient active Chinese membership to justify the recognition of this organization as an autonomous Chinese society, perhaps with foreign corresponding or honorary members, but otherwise of purely Chinese personnel.

It has been my privilege to work in China in the field of parasitology during the period of its greatest development in this country. I have personally visited most of the centers of heavy endemicity of the important parasitic infections and have been an eye-witness to the progress of several of the investigations. Recently (1925, 1926) I have summarized the progress that has been made in medical parasitology in China. A very brief *resume* of such work will not be out of place here, in order that a background may be furnished for the important work which remains to be carried on. Lest I become tedious I shall confine myself to the eight most important human parasitic infections of animal origin in China, which are: (1) malaria, (2) amebiasis, (3) kala azar, (4) schistosomiasis japonica, (5) clonorchiasis, (6) fasciolopsiasis, (7) hookworm disease, and (8) filariasis. Each of these infections will be considered in turn from these two aspects, namely, the work already accomplished and that which awaits the future parasitologists in this country.

1. *Malaria.* Malaria is more or less pandemic throughout China except in the northwest. There exist various degrees of incidence and relationship of the three species of malarial plasmodia in different parts of the country. In general, it may be said that malaria in China is

directly proportional to the amount of rainfall, being heaviest in the south and lightest in the north and ceasing altogether where there is an average of less than 16 inches of precipitation per year. Present data furnish only the most sketchy idea of the actual incidence of the three types of malarial infection in any particular district, their mode of propagation, the mosquitoes involved, the habits of such mosquitoes, the seasonal incidence of the infection and of the mosquitoes, and these several aspects considered with respect to seasonal rainfall and temperature. In addition to obtaining such information in amplified form for every important seat of malaria in China, topographic surveys of water-supplies in which mosquitoes may breed need to be made, in order to determine the feasibility of controlling the infection by eliminating breeding places of Anopheline mosquitoes. After this has been accomplished the entire problem of control in both its public and private aspects remains to be developed. Malaria in China will furnish an opportunity for dozens of technically trained men with both biological and medical backgrounds, to work devotedly for many years, before the country is as malaria-free as the Panama Canal Zone, the controlled areas of the Straits Settlements and Java or Sumatra.

2. *Amebiasis*. This infection has been found to be common throughout China, even including the dry regions of the northwest. In general, it may be said that the majority of cases in the warmer regions of South China consists of acute infections, and that in North China the great preponderance of cases consists of carriers. In Peking 20 per cent of the population has been found positive on the basis of cysts recovered in the stools. But during the hot humid summer months in North China, when the climate approximates that of the south, acute amebic colitis is not infrequent. Careful surveys of a cross-section of the population, like that undertaken by Kessel and Svensson in Peking (1924), require to be carried out in all representative regions of China, in order to determine (1) what factors are actually responsible for the relative incidence of acute and carrier cases of the infection, (2) whether the presence of the dysentery ameba in the human bowel, as based on the finding of only cysts in the feces, really develops into clinical amebic dysentery in as high a percentage of cases as newly acquired acute infections, and (3) whether the pig and the cat, which have been shown to be reservoir or experimental carriers of the dysentery ameba, are a menace to the human population. In no other country is there as splendid an opportunity afforded as there is in China to put these questions to a practical test.

3. *Kala azar*. Workers in China have contributed a significant share to the present knowledge of the Leishman-Donovan organism, its pathogenicity in man and in laboratory hosts, the most accurate

clinical and laboratory methods of diagnosis of the infection, and therapeutic procedure. The geographical distribution of the disease has also been mapped out with considerable accuracy, so that the infection is known to exist only in the belt north of the Yangtze River, extending as far north as Manchuria and west from Peking to Chinese Turkestan. The reason for this distribution is not at all understood. Intensive studies by the Kala Azar Field Commission in China have failed to show any natural reservoir host of the disease. The method by which the infection is transmitted from man to man, whether by direct contact, by vectors, or after incubation in an alternate host, remains unsolved. The greater incidence of kala azar in children and adolescents also requires study.

4. *Schistosomiasis japonica*. Perhaps in no other equally important disease in China is there as much concrete evidence concerning the life cycle of the etiological agent, and the epidemiology and general distribution of the infection as there is in Oriental schistosomiasis. Nevertheless, the study of the problem is just in its preliminary stage. For it is essential that a disease which is so widespread throughout the most fertile regions of China and, at the same time, which causes so great morbidity and mortality, should be studied intensively in every important endemic center, to determine (1) the actual spots in which the molluscan intermediate host does or may live, (2) the methods by which the eggs of the causative organism in human excreta reach the immediate vicinity of the appropriate molluscan host, (3) the possibility of reservoir hosts carrying the infection as is the case in Japan, and (4) the most feasible methods by which the disease may be controlled in each particular area. From the clinical side a satisfactory therapeutic procedure for treating cases of schistosomiasis japonica in the out-patient clinic is greatly needed.

5. *Clonorchiasis*. Recent studies have shown that Clonorchis infection is widespread throughout all parts of China except the northwest but that human infection is acquired almost without exception in two prefectures of Kwangtung Province; that such infection depends on the custom of consuming raw or partially raw fresh-water fishes containing the encysted larval flukes; and that abstinence from eating raw or insufficiently cooked fresh-water fishes guarantees freedom from infection. It has also been found that in the endemic centers of human infection there is a vicious relationship between infected human night-soil, the appropriate molluscan hosts and fresh-water fishes, but that sterilization of the nightsoil would remove the danger by killing the unhatched larvae. Practical methods which are inexpensive need to be developed to meet the peculiar conditions in each separate primary center of infection. Although the methyl

para-rosanilins have been shown to be clonorchicidal in doses readily tolerated by the human host, the uncertainty of complete cure being effected, on account of the difficulty of these drugs reaching the worms in lethal amounts in the heavily hypertrophied biliary passages, has been equally well demonstrated. It seems highly improbable, therefore, that any great dependence can be put on therapeutics in clonorchiasis, in lieu of which greater efforts to prevent human infection must be undertaken.

6. *Fasciolopsiasis*. The studies of Barlow in the heavily endemic area of Chekiang Province have resulted in the elucidation of the fundamental stages in the life cycle of *Fasciolopsis buski* and in the publication of important epidemiological information concerning this organism and the disease which it produces. A few data gathered by myself indicate that the infection does not extend north of the Yangtze drainage basin, but that it has a widespread distribution both in man and in pigs in Central and South China. In Kwangtung Province there are centers of very heavy infestation, as heavy, perhaps, as the Shaohing area. It remains to be determined whether such areas exist in other parts of the potentially infective territory. Likewise study must be undertaken to discover if the infection is always contracted by raw consumption of the water nut (*Ellocharris tuberosa*) or the water lily (*Trapa natrans*), on the peel of which the larval flukes encyst; or whether other vegetation may not at times or in certain localities be the responsible agents. The exact relationship between porcine and human cases also requires study. The possibility of the dog being a reservoir host must also be considered.

7. *Hookworm disease*. China is perhaps less seriously affected by hookworm disease than any other large country in the world situated in the same latitude. Nevertheless there are foci of heavy infection, particularly in the mulberry districts, where the typical symptoms of "mulberry yellows," (i. e. anemia) are common. Perhaps the less severe type of hookworm infection, where the blood is only partially discompensated, is of greater importance in China than is the more severe type, because its distribution is greater, while at the same time its significance is masked by diseases with more acute symptoms. On the biological and epidemiological sides the great mass of data accumulated by the China Hookworm Commission serves as a landmark of accomplishment. The way for practical sterilization of nightsoil against the hookworm in the mulberry districts has also been opened up by proof that ammonium sulfate, a commercial fertilizer utilized by the mulberry farmer, is lethal within 24 hours to hookworm eggs in nightsoil mixtures. It remains for similar practical solutions to be developed in other parts of agricultural China where hookworm disease is prevalent.

8. *Filariasis*. Within ten years after the discovery of microfilariae in the human body and before the adult worms had yet been found Manson was studying human and canine filariasis in China. His tireless observations on the clinical side will always be appreciated, but his most important contributions on the subject lay in the field of the biology and life cycle of the human filaria. The discovery that the mosquito (*Culex fatigans*) serves as an obligatory intermediate host, in the thoracic muscles of which a significant metamorphosis takes place, has not only served to elucidate the method by which this infection is contracted by man, but has paved the way for all insect transmission experiments, including malaria. Furthermore, Manson first demonstrated the nocturnal periodicity of the microfilariae of this worm in the peripheral circulation. Since Manson's day the disease has been found to extend in China from Southern Kwangtung to Southern Shantung and from Shanghai at least as far inland as Ichang. In the more northern belt *Culex pipiens* has probably been shown to be the transmitter of the infection. Of the many unsolved problems connected with this organism the migration-route in the human host, the meaning of the periodicity, and the actual relationship between the adult worms and elephantiasis are perhaps the most important. The only known means afforded for the working out of these problems is from clinical material and especially from autopsies of infected individuals. Due to the studies of a foreign investigator within her gates, China has already contributed much to the knowledge about filariasis. Will she rise to the occasion and allow her own men to solve the most significant problems connected with this infection?

OPPORTUNITIES FOR INVESTIGATIONS IN COMPARATIVE
PARASITOLOGY

Thus far I have confined my remarks to a consideration of the development and future of human parasitology in China. In turning to other lines of parasitology there is little to say except that the field is as yet practically untouched. The domestic animals and their animal parasites offer a particularly attractive series of problems, the solutions of which may be found to have definite economic as well as public health returns to the Chinese people. I know of no animal in the whole world so cosmopolitan a host for parasites as the common pariah dog in China. Filthy in habits, lousy and flea-infested, omnivorous, there is little wonder that it is a walking museum of perennial interest to the parasitologist. The dog in China harbors at least five human fluke infections, two human tapeworms, and two species of nematodes reported from man. It is frequently infested with ascarids and hookworms before it is born. The cat is only less interesting and

important as a subject for investigation. In North China pigs, cattle, sheep, goats, camels, horses, donkeys and mules are all slaughtered for human consumption. How much inspection is made to see that the meat is uninfested? Furthermore the abattoirs of these animals furnish an unequalled opportunity for the study of protozoa of the intestinal tract and circulatory system, and the helminthic inhabitants of the various organs of North China domestic mammals. In winter the markets of Peking also offer a varied selection of wild game, most of it still containing the viscera with the enclosed parasitic fauna. Migratory birds harboring parasites acquired in the arctic regions in the summer and in the tropics in winter are readily secured in Peking during the spring and autumn months. I know from random samplings of these animals that they harbor most interesting parasites. The humble dooryard chicken and the Peking duck contribute to the parasitologist's study table. Frogs, snakes and fishes all have their contribution.

THE TYPE OF PARASITOLOGIST WHICH CHINA NEEDS

The parasitologist in China, who views his subject only through the lenses of a specialist in human parasitology, lacks the perspective which makes his subject real and vital. It is my hope that China will develop parasitologists with a broad vision, whose viewpoint will not be cramped by feeling that their work must necessarily have a relationship to human medicine or must always have a practical bearing, but who will rather be capable of devoting themselves to comparative or human parasitology, theoretical or practical problems, as the situation requires. Whether such men are trained first as biologists or along medical lines, matters little; if they have the proper ideals and adequate training they will attain their goal. Furthermore, the study of parasitic infections in hosts other than man has in many instances been primarily responsible for the elucidation of the life cycles of human infections. Witness the work of Ross on bird malaria, which made possible the demonstration of the several stages of human malaria in the mosquito and the experimental transmission of the disease to man; the work of Leuckart and of Thomas on the liver fluke of the sheep, which served as a guide for the study of all human fluke infections; and the work of Leuckart on the frog nematode, *Rhabdias bufonis*, which contributed to the elucidation of the life cycle of the human hookworm.

I believe I have demonstrated that the parasitologist in China has a full-sized task to accomplish. Clinicians, public health officials, veterinarians and teachers of biology may all have an interest in the subject (and such an interest is greatly appreciated) but few of them have the inclination or the time to devote to the subject in order to qualify as authorities in the field of parasitology. Moreover, the

all-round parasitologist, by reason of his training, is of greater value to the clinician, the pathologist or the public health man, than is a person with only a light veneer of human parasitology. Is it too much to expect that within the course of time every good medical school in China will have a full-time parasitologist; that there will be one such man in every large municipal diagnostic laboratory; that veterinary schools, when they are established, will provide places for such men; and last, but most important of all, that research foundations in China will plan among other things for chairs of parasitology, where thorough graduate training may be given in both the theoretical and practical aspects of the subject?

HOOKWORM DISEASE IN KOREA*

WITH SPECIAL REFERENCE TO ITS TREATMENT

S. HAVILAND MARTIN, M. D., C. M.

There are many subjects which a man might study in his spare time, but there is none as important as that which deals with the health of the common people. It is because Hookworm Disease is second only to Tuberculosis in its importance to the health of the Korean people that I have attempted to make a study of it for the sake of physicians who have not the time to work it out for themselves.

First, we must realize that this is a serious disease and that, while many do not die from its effects, thousands are incapacitated.

During the year 1927 five cases died from this disease in Severance. During this time there were 312 cases admitted for Hookworm treatment alone. In Korea we have the infestation caused by two types of Hookworm: one the *Necator americanus* and the other the *Ankylostoma duodenale*.

The *Ankylostoma* and the *Necator americanus* are very much alike, the male being about 8 mm. long and the female 12 mm., the color a dirty white. The *Ankylostoma*, male and female, is straight or slightly curved. The *Necator americanus* has a definite bend at the neck. The female of each has a pointed caudal extremity. The male has a well-marked bursa and two long fine specules, straight in the *Ankylostoma* and hooked in the *Necator americanus*. This is seen with a low power; a high power or X200 will show *Ankylostoma* armed with definite teeth. But *Necator americanus*' mouth is smooth and is distinguished by its buccal plate.

*Read at the Annual Meeting of the Korea Medical Missionary Association, January, 1928.

The males can be separated quite easily from the females without the use of the microscope but the species can only be differentiated by counting the rays of the bursae and noting their formation. The bursa of the male *Ankylostoma* has a trifid ray which can be easily seen and is quite different from any ray seen in the *Necator americanus*. The egg of the *Necator americanus* is larger and more pointed than that of the *Ankylostoma* variety, but it is difficult to differentiate them by the eggs. I tried this method and it was hopeless.

The problem we had set out to solve was (1) the exact Hookworm infestation in Korea and especially around Seoul; (2) to know the proportion of *Necator* infestation to that of the *Ankylostoma* infestation; (3) knowing the effect of Carbon tetrachloride and *Chenopodium* on these two worms, to get a safe mixture of the drugs which would be effective without killing the patient and at the same time remove the ascaris and other parasites in one or two treatments; (4) to study the cause of the profound anaemia and the effect of the "poison" of infestation on the kidneys and other organs at autopsy; (5) to try to find reasonable means of reducing the infestation throughout the country.

The Stoll method was used with a fair amount of accuracy as our laboratory at present has no doctor in charge. The Willis salt flotation method is used in ordinary cases and the worms counted after treatment.

After doing a series of egg counts by the Stoll method and also counting and differentiating the different types of worms passed by 50 inpatients, we find that the proportion of *Ankylostoma* to *Necator americanus* is approximately 2:1. There were 540 *Ankylostoma* and 300 *Necator americanus* worms. Since the female of the *Ankylostoma* lays five times as many eggs as the female of the *Necator* type, we find our problem increased, and should plan especially to proportion our drug so that we may especially get rid of the *Ankylostoma* type as well as the *Necator*. All our cases were mixed infestation. Roughly, we can say that the *Ankylostoma* type is seen more in Asia than in the United States, where it is often the pure *Necator americanus*.

Knowing that the *Necator* type is easily treated by *Ol. Chenopodium* and the *Ankylostoma* so far best treated by (3) Carbon tetrachloride—we started a series of egg counts before and after treatment by various mixtures, and using the egg counts as a check and also the number of worms passed, we found that a mixture containing 12 parts of Carbon tetrachloride to 1 of *Chenopodium* was most efficient. Then we tried giving the mixture in salts, and in other cases with salts before and afterwards, and at the same time getting a mixture that would remove

ascaris as well. After experimenting with 50 cases we have decided, so far, on a mixture containing 10 parts of Carbon tetrachloride and 1 of Chenopodium, which is known as Severance Hookworm Mixture.

The following is now used in practically all departments of Severance:—

No supper

9:00 P. M. Magnesium Sulphate—20 grams.

7:00 A.M. Hookworm Mixt.—3.00 cc.

8:00 A.M. Magnesium Sulphate—30 grams.

Patient to rest in bed

Food allowed only after 2 bowel movements.

This mixture has been used outside of the Hospital by our Out Patient cases for five months now with no report of untoward results. It can be given as 0.2 grams for each year up to 15 years of age. Over 3.00 grams is not safe. Heart and kidney cases or patients in weak condition should not receive this treatment. It should not be repeated inside of a week. Thymol 7.5 grams in four doses, one every hour, followed by salts is safer. Ascaridole, the active principle of *Ol. Chenopodium*, is on its way here; also a better drug than Carbon tetrachloride namely Tetrachloriethyline. This will remove *Trichuris* as well.

As this is a preliminary report which I hope to finish later, I am only reporting on 312 cases admitted for Hookworm treatment alone in 1927.

312 Cases

Male

Female

174 (55.7%)

138 (44.2%)

84.6% came from Kyungkedo (in which is situated the capital, Seoul)

3.8 % came from Hwanghaido

2.24% came from Choongnamdo and Hamnamdo

The others came from 6 nearby provinces.

Less infestation was seen as one went north.

The Haemoglobin count was from 20 to 90%—50% in the greatest number.

The R. B. C. from 1,290,000 to 5,000,000. Greatest number was 3,000,000.

Many of our cases were found by stomach content analysis to have no free HCl, so that part of the treatment should include an acid mixture, and also Iron and Arsenic to counteract the Anaemia.

The number of worms passed on treatment varied from 29 to 1.

Since the use of the new mixture, the results are much better and most of the 50 cases carefully studied came from these.

105 of these cases had ascaris as well. One girl, aged 15, with slight Hookworm infestation, was given the *Hookworm Mixture* and passed 25 ascaris and 2 Hookworms. Two stool examinations later showed no eggs of either, showing that the *Ol. Chenopodium* was doing its work.

The cases of women in this series showed the largest infestation in house-wives. Amongst men, those in the charity wards (many of whom had no homes) were the next largest, and next came merchants. Students showed almost as large an infestation as the merchant class. About 50% of the Korean population of Seoul have Hookworm infestation; 60% of our medical cases in the Out Patient Department have Hookworm.

I feel that in Korea most of the infestation is not through the feet, as almost half of our cases come from the city and are never barefoot. I have had heavily infested cases from the best and cleanest homes in this city, where the lady sat up like a dowager with ten servants in attendance. A great deal is food-borne and particularly due to "kimchi" and other vegetables.

I should like to report the only case of slight poisoning I have seen after the taking of carbon tetrachloride. This was not one of our cases. The patient, a young woman, ten days after her baby was born, was given 2.00 cc. of this drug—followed in one hour by 30 grams of salts. That night I was called and found her collapsed, pulse rapid, headache marked, vomiting. I gave her hot coffee and brandy,—after an enema and more salts next morning, she was soon all right but weak.

Seven doctors in Johns Hopkins', studying the histology of carbon tetrachloride poisoning, report that it causes central necrosis of the liver, even in small doses. The maximum lesion is forty-eight hours after dosage. Healing of the lesion is not complete until four weeks have elapsed. Considering this, I have made sections of the liver and kidney of one of our worst cases for examination. I would suggest that carbon tetrachloride should not be used in severe liver or kidney conditions or early after the use of chloroform, which leaves also some kidney necrosis.

Regarding the getting rid of this infestation amongst our friends here in Korea, I am advocating the use of rubber shoes* in the gardens and asking the farmers to leave their feces for six months in a pot or

*Thousands of Korean people are wearing low rubber shoes within the last few years.

pit near their gardens before using it, as it is claimed in the American Journal of Hygiene that all larvae are killed out in that time. Women and girl students should be taught to be more careful in the preparation of food.

They say charity begins at home, so we are in the process of ridding the Salvation Army Orphan Home of the disease amongst 60 boys and 15 girls, where there was 80% infestation; and we are also planning to do all the students and employees in the Severance Union Medical College. The nurses in the Hospital have already been treated. Each doctor should constitute himself a sanitation committee to rid the Mission Schools, at least, of Hookworm and thus help to do a little towards removing this disease from our midst.

The pathological report on sections made from one of our severe cases, a woman aged 38, shows:

1. Brown pigmentation with degeneration of the heart muscle.
2. The kidney showed chronic parenchymatous nephritis (Kidney function test was 20% and Blood Urea 90 mgs. per 100 cc. on admission)
3. The liver showed slight central necrosis.

We are planning to do more autopsy work on these marked cases to endeavour to find out the actual effect of Hookworm poisoning and the cause of anaemia.

REFERENCES

- (1) *Stoll, N.R.* 1923.
"An Effective Way of Counting Hookworm Eggs in Feces"
Amer. Jour. Hygiene 3, 59-70
- (2) *Soper, F. L.* 1927.
"The Relative Egg-Laying Function of the *Necator americanus* and the *Ancylostoma duodenale*"
Amer. Jour. Hygiene Vol. VII No. V 542-260
- (3) *Smillie, W. G., et al.*
"The Treatment of Hookworm Disease with Carbon Tetra Chloride and Ascaridol (Ol. Chenopodium)"
Am. Jour. Trop. Med. Vol. V No. 1 Jan. 1925.
- (4) *Shapiro and Stoll.* May 1927.
"Preliminary Note on the Anthelmintic Value of Tetrachloroethylene, Based on Egg Counts."
Am. Jour. Trop. Med. Vol. VII No. 3.
- (5) *Gardener, Geo. H. et al.* February, 1925.
"Studies on the Pathological Histology of Experimental Carbon Tetrachloride Poisoning"
Johns Hopkins Bulletin. Vol. XXXVI. No. 2

SHANGHAI SANITARIUM AND HOSPITAL

H. W. MILLER, M.D.

We trust that the readers of the Journal who have visited sanitariums and sanitoriums in America and Europe will be glad to know that a sanitarium for the Orient, known as the Shanghai Sanitarium and Hospital, has now been located at 150 Rubicon Road in the western district of Shanghai. The institution is reached by excellent macadamized or well-cindered roads all the way from the city to the Sanitarium entrance. Taxi service can be secured from all parts of the city. It is located on seven acres of land, having a wide country outlook, and is surrounded by spacious gardens and lawns.

The main building of the Sanitarium consists of a three-story structure, fronting the south so as to gain the benefit of the sunshine in winter and the monsoons in summer. The building has steam heat, electric lights, hot and cold water in each room, private baths in most of them, while each of the twenty-four rooms is furnished in a homelike manner with the best type of Simmons' hospital beds. The hallways are light and airy, with spacious lobbies opening out on to large, roomy verandas from each floor.

A limited number of comfortable wards have been provided for the accommodation of second class patients. They have the same food, service, treatments, medical care, and general attention as the first class patients. The Sanitarium has endeavored to provide those features which make it an acceptable place for those to come to who are in need of rest, medical care, and a general build-up.

Particularly has the institution prepared itself for dealing with the diseases peculiar to the Orient, having laboratory and X-ray service to meet the requirements for carrying on efficient diagnostic work along these lines. It maintains a staff of doctors, technicians, and Western-trained nurses who are in constant attention upon the sick. There is also connected with the institution a very large consulting staff made up of specialists and practitioners from Shanghai and vicinity, and it operates on the basis of welcoming any physician of good standing to bring his patients to have the benefit of the Sanitarium regime, they taking full charge or working in conjunction with the institutional staff, as they may choose.

The Shanghai Sanitarium has endeavored to provide equipment along physiotherapy lines, including hydrotherapeutic appliances, electrical, light therapy, massage, and medical equipment of the most complete and modern type. Spacious departments are devoted to the carrying forward of this field of therapy so essential in dealing with all

X-ray Room



Light Therapy



The Sanitarium Parlor



One of the Corridors

chronic ailments. The dietetic department is in charge of a trained dietician of many years experience in a large American sanitarium.

The Sanitarium also has hospital conveniences, having a modern operating suite in which gas anesthesia appliances are available. It maintains a modern laboratory division with delivery room, wards, nursery, and private rooms for confinement cases.

A homelike atmosphere pervades the institution. A menu is provided for each meal, patients are therefore given the choice of foods, except in cases where a special diet is required. If it is desired, the food may be served in the dining room. A large, comfortable parlor is provided where those who are physically able may come to spend some time each evening listening to music, health instruction given in the form of lectures, stereoptican lectures, or some other type of entertainment provided.

Doctors and their families are given special discounts, as well as members of missionary societies. The regular rates are below those ordinarily charged in the homeland for equivalent service. The institution affords accommodation for all at very moderate rates.

A descriptive catalogue has been issued which gives a detailed statement of the objective of the Shanghai Sanitarium and Hospital, as well as illustrations. Any who may be interested can obtain further information by addressing the Shanghai Sanitarium, Box 1281, Shanghai, China. Any one desiring to come to the Sanitarium will be met at the boats or trains by comfortable cars which the institution supplies for transferring patients.

**SOME PROBLEMS FACING
THE MEDICAL PROFESSION IN CHINA***

JAMES L. MAXWELL, M. D.
SECRETARY, CHINA MEDICAL ASSOCIATION

At the outset I should like to say what an honour I feel it to have the privilege of addressing this distinguished audience tonight. I represent the China Medical Association which is now in its 42nd year of service here in China, and I bring from it to the National Medical Association the very sincere and hearty greetings of the body which I represent. I have had the joy of seeing the birth, the growth and the coming to maturity of the National Association and I regard it as the best of good omens that that Association is in the hands of such distinguished and capable leaders. It speaks well for the future standards of Medicine in China even in these difficult times.

*Lecture delivered at the Biennial Conference of the National Medical Association, January, 1928.

The title that I have adopted for this address is "Some Problems facing the Medical Profession in China" and the first problem of all has been the welding together of the Profession in one homogeneous group with the love of humanity and the honour of the Profession as its basis. The love of humanity and the honour of our Profession is an object that has no racial barriers and which unites the Medical Profession in one common whole the world over, yet the problems that are connected with it differ in the different lands and these can only be solved by each separate national group.

Your Association, as I have said, has grown from infancy to something like maturity in a way that seems remarkable indeed to those of us who have had the privilege of seeing the growth take place under their own eyes, and each stage of growth has brought with it its own new problems. I have read with great interest the address of your distinguished President especially in its references to the future consolidation of the Medical Profession in China in one great Chinese Association. I am also looking forward very much to the discussion on this subject which is to take place at a later meeting. Right away I should like to express the hope that these efforts will be crowned with the utmost success. So many are the purely medical problems that have to be met out here that there is no room for division even where such divisions, as in the present case, are merely outward divisions of organisation and bespeak no essential differences in object. Even so, a multiplication of organisation means unnecessary expenditure of energy that might be devoted to the common cause, and prevents the Profession as a whole speaking with one united voice and in tones which no government can afford to neglect.

Governments in China are like governments in other lands, they are far too occupied with what they consider the more important subject of politics to listen to representations on medical subjects unless they are forced to do so, regardless of the fact that the health of a nation is probably the greatest factor in its happiness. But, given a completely united Medical Profession in China and no government could afford not to listen to it on the essential matters of national health, medical registration and medical education.

I notice in the reference to this matter of the amalgamation of medical associations that the position of the international group, the China Medical Association of which I am Secretary is referred to. This is not the place to deal with this in detail nor have I any official authorisation to do so; but this I can say without any hesitation, that the greatest desire of our Association is to help the Medical Profession in China in any and every way that it can, and that when in the

judgement of the Chinese Associations, or still better of one united large Chinese Association, the time has come when the common cause will be best served by our joining up with that National Association it will find the China Medical Association ready to give most sympathetic consideration to all its suggestions. In the meantime I may say that the Councils and Committees brought into being by the China Medical Association are entirely at the disposal of the National Association for united help towards the common end and some preliminary relationship may I trust be brought into being along these lines.

Now while the basal problem which confronts the Medical Profession in China is that of presenting a united front this cannot of course be considered an end in itself. It is indeed only the formation of a sufficiently strong and firm base from which the many other problems that medicine in China afford can be actively tackled.

The first and most important of these problems is that of Public Health. Of this I propose to say almost nothing as you have here in Peking those who are authorities on the subject and most deeply interested in all of its many issues and before whom I would hardly dare to open my mouth. There is however one matter on which with your forbearance I should like to say a few words. There are I suppose at least fifteen million babies born in China every year and practically nothing is done to ensure the safe arrival of the little ones nor for the care of the mothers at this critical period. A neighbouring country like Japan is comparatively well provided with young women who have had the minimal training necessary to help intelligently the women of the poorer classes in their time of need. Even in a small country like England it has been found necessary for the State to provide women with a short training in the cleanly and skilled handling of their needy sisters, women who have not been required to have any lengthy professional training.

I believe that the problem of providing such a class of women for China is one of the most important that the medical profession could tackle and one that ought to be handled as soon as it is in any way possible. I regret very greatly that instead of helping in the solution of this China-wide problem, the Nurses Association, which should have been in the van of the movement, have taken the extremely retrograde step of attempting to confine the training in midwifery to those who have already had a full training (three or four years) in nursing. It should, I think, be evident to all that if the bulk of the women of China are to wait until they can secure at their confinements the attendance of those who have had a training at least as long if not longer than the doctor himself, this century will pass without anything adequate being

accomplished. Further the fees required by nurses with such a lengthy training will, as a rule make their employment by those who need them most, quite impossible.

Turning again from Public Health to subjects with which I am more intimately familiar, I should like to place before you the problem of medical education. The future supply of well-trained doctors is one of the country's greatest needs and this the medical profession must tackle seriously before long. The Association to which I belong has attempted it in the cases of the schools in which they are especially interested and to my mind they have been eminently successful in not merely raising the standard but what is more important instilling into the schools the desire to raise their own standard far higher than it had previously been. But the conditions in China generally are of the same type as those that existed in the United States a number of years ago when along with some first class schools there were a number quite unworthy of that name. The whole situation has been altered in the States mainly by the action of the American Medical Association in its careful classification of Medical Schools into A.B. and C. grades, and its refusal of any recognition to those of the last class.

It is probably not merely the refusal of recognition so much as the psychological effect of placing a school in Class C. that has practically entirely eliminated this class. Now a strong medical association in China could do a great deal along somewhat similar lines to eliminate the entirely bad and encourage and strengthen the progressive medical schools. Its success in doing this would also place the Medical Association itself in an unassailable position.

Yet another problem that very urgently requires dealing with is the matter of hospitals. I regret to say that there are many so-called hospitals in this country which are not only unworthy of the name but are dragging that good name in the mire. I speak with my knowledge of Shanghai and though Shanghai may occasionally deserve its reputation for being a bad place I am afraid that it does not stand alone in this. Many of the so-called hospitals are entirely unworthy of the name; not a few, I fear, are simply abortion shops.

A year or two ago my Association attempted to introduce a scheme for registering the hospitals in which it was interested, on a basis of minimum requirements. Owing to the recently disturbed condition of the country no progress has been made with this scheme although there have been a number of applications for inspection and registration. Now I must say personally that I should be happy to see our scheme die a natural death if its place could be taken by a scheme evolved by the medical profession of China in which we might be allowed to give

what help we could for an inspection of all hospitals in China, Chinese and foreign alike, and giving the recognition of the Association to only such hospitals as are worthy to bear the name. The requirements for hospitals in country districts might have to be low but none the less I am certain that great good would result from some such policy.

I have dealt with only a few of the outstanding problems and it would be easy to multiply these but there is one other problem to which I want to turn as I have been personally interested in it now for a couple of decades—I refer to the problem of Research into the frequency and causation of diseases in China. This to me and I think to my Association is one of particular interest because of the fact that it is an international and not a purely national problem. Gladly as we who love China would like to help her in all her medical problems, there are some of them that are so much national problems that with all the good will in the world our help cannot always amount to much and may be liable to misunderstanding. This should not be the case in the matter of Research for there is no matter in relation to medicine that has in the past been, and will I trust in the future be, established on so international a basis. One has but to let one's mind run over the names of those most eminent in Medical Research in both ancient and modern times to realize that such Research has had neither racial nor geographical limitations and we earnestly trust that this will ever be one of the greatest glories of the scientist. The needs of suffering humanity know no geographical boundaries nor is the spread of disease in any way limited by any racial affinities.

Suffering makes the whole world kin, and the relief of it is the common object of every people.

Here then we ought to be able to help to the fullest of our powers and in a way which the circumstances of national problems may make impossible along the other more narrow lines that we have touched on so far.

It is therefore my most earnest hope as a member of a sister but international association that your meetings here in Peking will not close without steps being taken to formulate some united programme in which we, with you, may throw our whole strength into the fight against disease and the elucidation of the many problems that such a fight entails. For the remainder of the time allowed to me I shall try to bring before you a few thoughts on some of the strictly medical questions at issue on which we urgently require more enlightenment and knowledge. These questions have especially interested me since the time, more than twenty years ago, when Dr. Jeffreys asked me to join with him in writing a book on the Diseases of China. While it is

true that much splendid work has been done since then, not a little of it emanating from this city of Peking, yet the fact remains that so far the problems of disease in China are largely awaiting solution and where much work has been accomplished and solutions found to difficult questions these have but raised still further questions to be answered.

I have myself recently been interested in gathering some statistics on the subject of malignant growths out here and comparing these with cancer statistics in other lands. There is no world-wide problem that is so urgently demanding attention at this moment as is that of cancer. In the parts of the world where it is possible to keep careful vital statistics there is no question that the increase of cancer is appallingly rapid and it is probably not wrong to infer that the disease is increasing in incidence in countries, such as China, where reliable statistics are not yet available. Whereas in certain cities in Scotland and America the chances of a citizen dying from cancer were a few years ago say 1 in 14 or 15 the chances now are 1 in 7 or 8 or even higher. Nor is there any solution of the problem yet in sight.

In the absence of vital statistics here in China it is impossible to compare the frequency of the disease with western lands but it is possible to compare the relative commonness with which different areas of the body are affected and this little attempt that I have made has brought out the most extraordinary differences in such comparative tables. In certain sites cancer is relatively common alike in China and America—examples of these are the uterus and breast. In one situation they are extraordinarily common in China and extremely rare in America. In yet another site—stomach and liver—cancer is appallingly common in America and relatively uncommon as compared with other sites in China. Here now is a question of which the significance deserves careful investigation. This is the first attempt, I believe, to collect figures of cancer in the mass out here, and undoubtedly such an attempt cannot be made without more or less serious error. It is probable that my figures when checked by even larger and more carefully gathered ones will need considerable reconsideration but running as they do to over eleven hundred it is probable that the major facts brought out are true in a general way if not sufficiently accurate in detail. I believe that the checking of such statements and if true, the elucidation of the reasons for the extreme differences in the commonness of cancer in certain areas, might be a real contribution to the whole world-wide problem.

There is one very interesting fact that may be suggested though the figures are not sufficiently certain to do more than raise the question. Cancer of the liver, as far as I have been able to ascertain, is comparatively uncommon in China as a whole yet in the last few weeks

it has been brought to my knowledge that in certain limited areas it is far from being as uncommon as I had supposed. Further there is reason to suggest that the areas where cancer of the liver is common correspond with the areas where the liver fluke (*Clonorchis sinensis*) is commonly met. If this should prove to be the case the natural inference would be that here we have definite cause and effect; and the working out of the pathological changes which lead in this case from simple irritation to cancer should be comparatively simple. I merely throw this out as a suggestion, the facts of which have first to be verified but which if true may lead to further important evidence on the subject of this dread disease.

In any case research on the subject of cancer in China and on the reason for the difference in incidence between the disease here and in the west should not be without considerable value.

This is but one of many subjects which are crying for investigation. The subject of undiagnosed fevers in China is one that deserves serious consideration. The matter has been greatly confused by the senseless habit of attaching place names to certain fevers of which we know nothing. In many minds to give a name to anything is more than half way to classify it whereas the converse is often the truth.

The distribution of diseases in China is one of intense interest and one of which we are painfully ignorant. Dr. Faust and others have done a great work on the distribution of some of the parasitic worms which are so common in this country but he would himself be the first to allow that such work is only but begun and that an immense amount has still to be done to complete the investigation of this important problem. With regard to many other important problems of the same nature nothing whatever has been accomplished.

Why has Scarlet Fever after being constantly introduced into a populous centre such as Hongkong failed entirely to spread there? Indeed it is practically unknown in the tropical parts of China while it constitutes a most serious menace to health in central and north China.

Why is true Rheumatic Fever almost absent over a large part of China and yet probably not rare in certain centres?

Why is Typhus Fever almost unknown in the south and Lobar Pneumonia scarcely met with in the extreme north?

Why are there certain small areas where bladder stone is met in great abundance, while it is hardly seen in other places; and the same question might be raised about goitre?

These and many other similar questions regarding the distribution of disease in China urgently call for answer.

Above and beyond these there are certain diseases already well known which have so far defied both explanation, and to a certain extent, treatment. In closing I should like to call your attention to one of these. It has always been of especial interest to me as I met with large numbers of cases in my own hospital practice and exhausted the known methods of treatment with very poor success except in a small minority of the patients.

All over south China, also though less common in the centre and more rarely met with still in the north, is a disease characterised by enlargement of the spleen followed by at first an enlargement and later a contracted condition of the liver and attended at this stage by ascites—a watery effusion into the abdominal cavity. The patients are mostly young to middle aged men, and the tendency is in all cases to a fatal termination. Many undoubtedly die not directly of the condition but of inter-current diseases which their condition makes them unable to withstand. Altogether therefore from direct and indirect causes the mortality is very high. A condition somewhat similar to this is found in certain other affections in China and abroad, but diligent search has failed to find any evident cause in the particular cases of which I am speaking. Certainly removal of the enlarged spleen has proved in a few cases a complete cure of the disease, but the condition of most of my patients was such as to make the operation highly dangerous and only a limited number survived the operation. No other treatment in my own hands proved in any way successful, nor as far as I know has the condition received the serious attention that it deserves.

Here is a type of case in which properly organised research would be of the utmost value and would doubtless in the end provide for the saving of many lives at the age when such lives are of the greatest value to the State.

The subject of research alike into physical standards and directly medical problems is a subject on which very much more might be said, but I think enough of the story has been told to show how immensely important this branch of work is.

But here I would like to interpose with the remark that Medical Research in China would have a still further value in being able to check up and correct certain errors into which investigators of the West have fallen.

A simple example of this may be given in regard to the problem of Tuberculosis. Some leading investigators of the West have main-

tained and possibly correctly that there are two types of Tubercle bacilli, the bovine and the human. They state that infection with the bovine type is derived from infected milk. They further declare and here is where the point comes, that certain types of tuberculosis and its occurrence in certain areas is constantly due to the bovine type and to bovine infection alone, whereas the human type from human infection occurs in different areas and gives rise to a different type of disease.

Now every physician of wide experience in China knows that every form of tuberculosis is rampant in this country, and that no anatomical site where tuberculosis is found in the West is immune from it in the East. On the other hand the Chinese do not indulge to any extent in milk and such as they use is canned milk which by its method of preparation cannot be accused of carrying tuberculous infection.

Investigators in this country ought therefore to be able to give the quietus to this common fallacy.

I have tried in this address to bring before you some of the problems that confront the medical Profession in China. It is a subject which in a short paper like this can hardly be given anything like justice but I think that sufficient has been said to show how varied and important these problems are.

The first essential to their solution is a united profession and this I hope and believe will before very long be an accomplished fact. And again let me say as representing the international group of physicians in China that we wish you God-speed in your efforts, and that in the solution of any of the problems we shall be ready to give any assistance that we can, in any way in which you feel that we can help you. Most especially I say this in regard to the last mentioned subject of Medical Research which steps beyond the bounds of others that are more strictly national problems.

Clinical Notes**SOME CASES OF GASTRIC CARCINOMA**

P. CHEAL, M.R.C.S., L.R.C.P.

During eight years' work in Formosa I have only seen three cases of Gastric carcinoma that were at all operable. The first was four years ago, and I am sorry to say notes are somewhat scanty, and the other two were within a week of one another recently. Perhaps some account of treatment and results may be of interest.

(1) A woman of 46, extremely anemic and thin. Symptoms were pain in epigastrium, jaundice, and instant vomiting of almost everything she took to eat or drink. Duration of illness was vague. Operation was undertaken at earnest request of the patient, and very little hope of real benefit was held out to her.

At operation the pyloric end of the stomach was found to be completely occluded by a hard mass of growth, which was firmly adherent to a mass of omentum. Posterior gastro-enterostomy was rapidly done and nothing else.

There was an uninterrupted recovery from the operation, the patient becoming ravenously hungry by the fifth day. She was given milk and raw eggs at two hourly intervals (three eggs in the day) until after the stitches were taken out on the 9th. day, when a gradual return to her normal diet of rice was undertaken. There was no vomiting following operation, her jaundice speedily cleared up, and she left Hospital at the end of three weeks very greatly improved and rapidly gaining weight.

(2) A woman of 45, very emaciated. Gave a history of vomiting after food during last two months. Vomiting came on three to four hours after food, and consisted of undigested food and acid fluid. There was some pain referred to mid-line of epigastrium, but this was not severe. She was very constipated. She had had amenorrhoea for 5 months with leucorrhoea. Thyroid gland has been enlarged 3 to 4 years.

Abdomen rigid and indrawn, not markedly tender, and no mass palpable.

Operation. Mid-line incision. A mass found close to pyloric end of stomach and more prominent at the lesser curvature than the greater. Glands in the second curvature were infected but easily removable.

The whole mass was quite motile and there was no sign of extension to surrounding structures. Stomach was distended slightly but not markedly inflamed. Clamps were placed about $\frac{1}{2}$ inch on either side of the growth and that portion of stomach removed. This involved loss of rather less than half of the whole organ. The cut ends of duodenum and stomach were sewn up and invaginated with Lembert sutures; fine linen thread was used throughout. A posterior gastro-enterostomy was then performed and abdomen sewn up in layers, the wound being sealed off with cotton wool soaked in Tincture Benzoin Co.

I may say that, beyond starvation, on the morning of operation, no special preparation was made; chloroform was used throughout by means of a Vernon-Harcourt inhaler; and an injection of Morphia gr. $\frac{1}{6}$ with Atropine was given before return to consciousness.

There was no vomiting following the operation. For the first 24 hours thirst was quenched with as much water as she wanted, and after that we began with two-hourly feeds of one ounce of milk with water. The patient sat up on the second day and complained of hunger on the fourth when a raw egg was added to the feed 3 times a day. Stitches were removed from a well-healed wound on the eighth day, and feeds of soft rice begun on the tenth day. She left hospital on the 20th. day perfectly well with no pain in abdomen, rapidly increasing weight and most sturdy appetite.

(3) A woman of 46, sickly-looking, and thin but not at all emaciated. Anaemia fairly marked. Gave a history of abdominal pain and flatulence for 19 months. During last eleven months frequent vomit, consisting of undigested food and bile. Attacks of vomiting every two or three days, but there was no proof that food has been retained for that time. Appetite was poor but she took some food regularly. Tendency to constipation. The pain was not very localised but roughly in epigastrium, and had no definite relation to food. Any very exact history was very difficult to elicit. The abdomen was rigid and indrawn. X-ray shewed shadow of largely distended stomach—not a bismuth meal shadow. She had a large thyroid gland.

Operation. Chloroform anaesthesia. Median incision as for No. 2 case. Pyloric end of stomach showed puckering due to several old healed ulcers, and a hard mass of growth which invaded the duodenum but was not adherent to surrounding structure. The growth seemed to be too large to remove and the condition of the patient did not warrant much manipulation. A rapid posterior gastro-enterostomy was performed, giving great care to fully occlude the many largely distended vessels in stomach wall. An

injection of Morphia $\frac{1}{6}$ th. grain with Atropine was given before leaving the theatre. After three hours she began to vomit every few minutes, mainly dark blood, and pulse became very rapid and weak. Copious saline injections into pectoral muscles improved the pulse but the vomiting of blood went on for 36 hours, in spite of having ice to suck and administration of Calcium by injection. At the end of second day vomiting ceased and general condition improved; rectal feeds were given every four hours consisting of milk and eggs, and she was allowed to swallow as much water as she liked. On third day she was able to retain a little milk and water every two hours, by the mouth, and by the fifth day was clamouring for food. Treatment then proceeded as in case of No. 2. Stitches were removed from the healed wound on the 9th. day and she left Hospital on the 23rd. day taking good meals of soft rice, and with no sign of indigestion.

As in this case I could not remove any of the growth for section it may be objected that there is no proof that it was cancer, but the appearance and manner of extension of the mass left no doubt in one's own mind.

Of course a cure cannot be claimed in any of the three cases but at least very great improvement was gained. I have since heard that the better way in gastrectomy is to unite the stump of the stomach to a long opening in the jejunum, instead of suturing and then make a fresh incision for gastro-enterostomy. I should adopt this method in future.

Unhappily we seldom see cases early enough, and extensive spreading to surrounding structures prevents removal.

CONFERENCE ON RHEUMATIC DISEASES

A Conference on Rheumatic Diseases is to be held at Bath, England, on Thursday and Friday, May 10th and 11th, 1928. Sir George Newman, Chief Medical Officer of the British Ministry of Health, has kindly consented to act as President of the Conference.

There will be three Sessions: (1) Social Aspects, presided over by Lord Dawson of Penn, Physician to H. M. King George, (2) Causation, presided over by Sir Humphry Rolleston, (Regius Professor of Physic, University of Cambridge), and (3) Treatment presided over by Sir E. Farquhar Buzzard, (Regius Professor of Medicine, University of Oxford). The local Hon. Medical Secretary is Dr. Vincent Coates, 10, Circus, Bath, England.

Hospital Technology Section

**A PRACTICAL TECHNIC IN THE PREPARATION OF SMEARS
FOR THE EXAMINATION OF TUBERCLE BACILLI**

L. T. BLACK, M.D.

The old technic used in the examination of smears for the tubercle bacilli and in making comparisons of different smears according to the Gaffky scale is not only of no value for clinical purposes, but very often has a detrimental psychologic effect on the patient. A patient feels that, if the reading of his Gaffky scale is 7 per field today and was only 4 per field four weeks previously, he is clinically worse.

What are the mistakes made according to the old method? We hunt for lentil-like particles in the sputum and smear it thickly on the slide. Sometimes we find tubercle bacilli in those particles and sometimes we do not, and it very frequently happens that our laboratory diagnosis is "too many to count" in a case which, from a clinical and x-ray standpoint, must be considered as greatly improved. On the other hand, we find fewer bacilli in the smear of a patient who, from the clinical standpoint, is definitely worse. In other words, we fool not only the patient but also ourselves.

During the past two years we have been using a technic suggested by Dr. Felix Baum, our Medical Director. Dr. Baum had used this method for many years in Europe and had had very satisfactory results. The technic is very simple:

The sputum is placed in a bottle or container and whipped for one minute with a wooden applicator around the end of which a piece of cotton has been wrapped. The tubercle bacilli present in the sputum will become adherent to the cotton. The cotton-wrapped end of the applicator is then drawn once very lightly and quickly across the slide, leaving a thin smear in which the tubercle bacilli are distributed homogeneously.

This method has been used in hundreds of cases and we have concluded that in many of the cases where we could not find tubercle bacilli according to the old method of smearing, the sputum was positive with this technic. The Gaffky scale applied to this technic is obviously of greater value in the determination of the degree of the tuberculous process.

I. H. T. INQUIRY SERVICE

To the I.H.T.—Will you please supply me with details of the preparation of home-made Antiphlogistine? There was a prescription for it in the "C.M.J." some time ago, but I cannot find it now. *J.M.*

Answer:—The details will be found in the Feb. and April "Journals" for 1923.

The formula there given was,—

Peanut Oil	1 fl. lb.
Thymol powdered	40 grains
Peppermint Oil	1 oz.
Eucalyptus Oil	4 oz.

Native Soapstone, or talc (T'u fen 土粉) q.s.

Sterilize the T'u fen by baking and pulverising it. Dissolve the Thymol in the Peppermint oil, add the Eucalyptus oil, and stir them all into the peanut oil gradually. Then mix in the talc powder in mortar a to make a moderately firm mass. The U. S. P. formula, as supplied by the Editor, is as follows:—

Glycerine	37½ parts by weight
Ac. Boric	4½ " " "
Thymol	1/20 " " "
Methyl Salicyl.	1/5 " " "
Ol. Menth. Pip.	1/20 " " "
Kaolin	57¾ " " "

To be intimately incorporated by the aid of heat to a homogeneous mass. The Editor remarked that Talc is a native magnesium Silicate: Kaolin a native Aluminium Silicate.

In comparing the formulae Prof. Bernard Read commented that since Kaolin, or China Clay 土磁石, 高嶺土, 白石脂, 磁土.) is just as universally available as the Soapstone or Talc (土粉), and is of denser consistency, it is preferable. On the other hand he approves the suggested substitution of oil for glycerine, as being cheaper; but for the same reason he prefers Methyl Salicylate (oil of Wintergreen) to Thymol—besides which it is more effective.

E. G. B.

PROCEEDINGS OF THE CHINA BRANCH
of the
AMERICAN SOCIETY OF PARASITOLOGISTS

(Mid-winter Session, January 30, 1928, in Room 223, J. Bldg.,
Peking Union Medical College, Peking.)

The mid-winter meeting was held in conjunction with the biennial conference of the National Medical Association. The outgoing Chairman, Dr. E. C. Faust, addressed the Society on the subject: "The future for Parasitology in China."

(This address is printed as a separate article in this issue; see page 180). The following reports and demonstrations were also presented at the meeting.

ISOSPORA HOMINIS, THE THIRD RECENT CASE, FROM AN
AMERICAN WOMAN IN PEKING, Lo Ke-chang (Peking)

A third case of *Isospora hominis* has recently been diagnosed in the Peking Union Medical College. The first case diagnosed for North China was reported from a Chinese patient at a previous meeting of this Society (September, 1927). A second Chinese case was diagnosed a few weeks later. The third case was an American woman who had been in China only about six months. In both of the Chinese patients there was a concomitant diarrhea, which cleared up without specific treatment. The recent case, which is still under observation, complained of no symptoms which could be attributed to the parasite. In the first case the stools became negative during the period of observation. The second case was still positive for the parasite on leaving the hospital three weeks after admission. The present case has remained positive for an observational period of more than a month.

FREE-LIVING NEMATODES IN NORTH CHINA SOILS,
H. D. Brown, Ph.D. (Chengtu, Szechuan.)

A study was conducted during the fall and winter of 1927 with a view to finding out the frequency of nematodes in the soils around Peking and, if possible, what factors make for large numbers in the soil. Particular attention was paid to soils near "night-soil" drying areas, latrines, barnyard manures and agricultural crop-soils fertilized by manure or "night-soil."

Over 80 samples were collected during October and November, when the nematode-content of soils would normally be low. Soils at this season were very dry and no fertilization had been done for several months. Samples were collected from a variety of soils covering an area from 50 miles east of Peking to 15 miles west. The agricultural plots at Yenching University gave a large number of interesting samples. The soils were analysed for nematode numbers, organic matter, pH value, moisture and percentage saturation. A modified Baermann apparatus was used for isolating the nematodes and the material was preserved for further study and identification. Drawings were made and measurements significant in specific identification were taken on over 200 nematodes.

From the data accumulated it was found that the group of soils related to "night-soil" and manures, was high in nematode counts, ranging up to 2,700 per 100 grams of soil. The predominant form was a Rhabditid type, which occurred in almost all soils containing manure or other fecal material. Other types living on decaying organic matter were present, but there was little evidence of forms which infect man or animals. The method of drying "night-soils" in thin layers exposed to direct sunlight probably accounts for the absence of this latter type. The samples from the immediate vicinity of wells in various localities were not high in nematode counts, except where the wellside had an accumulation of debris or vegetation. Two street wells with leaves and straw nearby, had several hundred nematodes, but the average for the group was below 60 per 100 grams of soil. Though the forms were chiefly saprophytes, infective nematode larvae might easily be spread by carriers coming to the constantly water-soaked wellside. Saturated soils were very low in nematode content irrespective of organic matter, pH or nearby vegetation. They averaged but 15 and the highest number was 54 per 100 grams of soil. The forms present were chiefly those feeding on the roots of aquatic plants, such as *Tylenchus*. Sod or grass soils averaged about 100 nematodes per 100 grams of soil though some had upwards of 300. If an acre of soil to a depth of 3 inches were uniformly populated, this would mean 1,475,000,000 nematodes per acre. Cephalobid forms were predominant in this group and about half were the protrusible-speared forms which suck plant juices. Uncropped soils averaged about 200 nematodes per 100 gram sample with a range up to 500. A wide variety of forms was found, the majority being saprozoic, protozoan feeders or carnivorous forms. The cropped agricultural soils had the highest nematode content and the number seemed to be related to the type of manure used as well as to the plants which were grown. One sample had over 10,000 in 100 grams and another over 6,000. These

were vegetable crops in recently fertilized sunken beds. The plant parasite types predominated and the freshly manured soils had many of the saprozoites.

The soil samples were almost all alkaline in reaction to indicator dyes and averaged about pH 7.7. The organic matter, including some hygroscopic water (Ignition method), varied from 1 to 4 per cent in soils but up to 25 per cent in manure composts. When other factors were optimum an organic content up to 4 per cent was correlated with high nematode populations. The soils were typically loess in texture, packing hard when wet and drying to a fine powder.

EXPERIMENTS WITH THE USE OF CARMINE STAINS FOR
THE DETECTION AND DIFFERENTIATION OF INTES-
TINAL PROTOZOA, J. A. Curran, M.D. (Fenchowfu, Shansi).

A critical analysis was made of previously described methods of staining intestinal amebae, with especial reference to the carmine affinity of endamoebae in fecal smears. From experiments carried out it appears that cysts and trophozoites may be stained in a differential manner in addition to staining their glycogen content. Of all methods tried, deep staining with a combination of Harris hematoxylin and Best's carmine gave the best results. To secure differential carmine-staining of the amebae against a light background it was necessary to wash the preparation a short time in water. In this way the organisms may be found under the low power objective of the microscope. In finding certain types of *Endamoeba histolytica* and *Iodamoeba butschlii* the method appears to offer definite advantages. A more thorough trial is necessary to prove its worth as a diagnostic routine.

FLUKES OF THE GENUS PROSTHOGONIMUS FROM THE
HEN'S EGG AND THE UTERUS OF THE DUCK, Chenfu
Wu, Ph.D. (Peking) and Bessie Noyes, Ph.D. (Soochow).

The fluke, *Prosthogonimus japonicus* Braun, 1901, has been observed several times in the albumin of the hen's eggs in the Yangtze Valley but has never been specifically diagnosed from that area. The first specimen studied was collected from the hen's egg in Soochow. Another infection of four worms was found in the uterus of the Peking duck. The worms agree in internal structure and egg size (24 by 1.2 μ) with the type material from the hen's egg from Yedo, Japan but are somewhat larger, measuring 6 by 2.5 mm. for the Soochow specimen and 7-8 by 2.5-3 mm. for the Peking material.

OVERWHELMING INFECTION OF *ECHINOCOCCUS GRANULOSUS* IN A PEKING DOG, E. C. Faust, Ph.D. (Peking).

Dr. Faust demonstrated stained specimens of *Echinococcus granulosus* and portions of the ileum of a dog studded with specimens of this parasite. The dog had been in the Peking laboratory for three months, was known to be positive for a taeniid cestode because of the presence of eggs in the feces, but on account of the rarity of hydatid cyst in the locality was not considered to be an *Echinococcus*-but rather a *Taenia*-carrier. Without apparent cause the host suddenly became greatly emaciated and was autopsied under anesthesia. On opening the digestive tract the entire length of the small intestine was found to be densely studded with thousands of adult *Echinococcus granulosus*, which had undoubtedly been responsible for the starvation of the host. Two dogs with light *Echinococcus*-infection had been previously discovered in the vicinity of Peking (1924). They had both been found to have come from the same compound in the Chinese City outside the Hata Gate. The animal recently observed was a stray dog that had been taken from the streets. It seems likely that the overwhelming infection may have been acquired from eating hog or sheep viscera heavily infested with hydatids.

THE USE OF CEDAR OIL AND OTHER OILS WITH A HIGH REFRACTIVE INDEX AS AN AID IN FINDING PARASITIC OVA IN FECES: THEIR ADVANTAGES AND SHORTCOMINGS, J. A. Curran, M.D. (Fenchowfu, Shansi).

In the November number of the *China Medical Journal* (1927, p. 944) mention was made by the Editor of an article by Gordon E. Hein, M.D. in the *Journal of Laboratory and Clinical Medicine* (Aug. 1927), advocating the use of cedar oil in finding parasitic ova in feces. The present writer has tested this method with the following results.

It was found that not only cedar oil is useful but that liquid paraffin or olive oil are equally serviceable. Apparently any clear oil with a high refractive index gives satisfactory results.

The results with *Ascaris lumbricoides* and *Trichocephalus trichurus* were all that the author claims them to be. Whereas ordinary saline suspensions may only show one to two *Ascaris* ova to a specimen the oil-clarification method may demonstrate from ten to twenty in a single low-power field. In carrying out such an experiment a *Trichocephalus* ovum was found that had been missed in the usual examination. The method is equally good for *Taenia saginata*, *T. solium* and *Hymenolepis*

mana. However, for the demonstration of hookworm ova the method appears to be useless. In a specimen known to contain them it was practically impossible to find them with the thick dry smear oil-preparation technic, due to the fact that both shell and contents had been rendered equally transparent.

With *Clonorchis sinensis* it was possible to find the characteristically-shaped ova in great numbers but it was impossible to make out any details of internal structure so as to differentiate them from *Metagonimus* eggs. However, since the flotation method is also useless for the concentration of *Clonorchis* eggs, this method may be of value in demonstrating that either *Clonorchis* or *Metagonimus* is present when usual methods of search fail.

One fresh specimen known to contain eggs of *Fasciolopsis buski* was examined but there had been so much shrinkage and distortion due to drying as to make the method practically valueless. Preserved specimens of *Fasciola hepatica* eggs gave similar results.

In summary, it seems that the method is a kind of "X-ray" examination. The oil not only renders the fecal field but also the contents of the ova nearly transparent. The shells of the smaller thicker-walled ova, being denser than the rest of the field, stand out very clearly. It is for this reason that the delicate-walled hookworm ova are practically invisible.

BUSINESS SESSION

At the close of the professional meeting a short business session was held, at which time the following officers were elected for the coming year:

Chairman (and member of the Council of the Parent Society), Dr. J. Preston Maxwell;
Vice-Chairman, Dr. John A. Snell;
Secretary-Treasurer, Dr. Chenfu Wu.

An attendance of 38 members and guests was recorded for the meeting.

It was voted to hold the mid-winter session for 1929 in Shanghai, in conjunction with the Biennial Conference of the China Medical Association.

A vote of thanks to the out-going Chairman, Dr. E. C. Faust, was passed, expressing the gratitude of the Society for his services in organizing and directing the activities of the organization during the past year and a half, and for his work in the interests of parasitology in China.

Editorials

OUR PUBLIC HEALTH NUMBER

We are glad to be able to present a Public Health Number of particular interest this year. Political and economic conditions have caused what might well be described as a wave of depression over the country and at times one doubts the possibility of real progress under these difficult circumstances.

While however we may be disappointed over the slowness of progress there is no real excuse for pessimism in the medical and especially in the public health world. A health conscience is being steadily aroused; such undertakings as the Amoy waterworks described by Dr. Miller are going forward, our knowledge of parasitic and other infections is being progressively increased and the possibility of handling health problems in ways they have never been handled before is becoming evident.

In the last connection we would refer our readers to the very interesting paper by Dr. Yue of Hinghwa, Fu. We refer to this in particular because it shows what can be done when the initiative comes from an influential Chinese doctor and is not inaugurated by foreign physicians however eminent.

How the people permitted what the ignorant must have looked upon as a tampering with their wells is most remarkable and the checking of the epidemic by this and other means was an excellent example of what might be accomplished all over China.

Dr. Kim's description of what has been done and what is being attempted in Shanghai is also very timely just now when health projects are in the air.

A RETROGRADE STEP

While we see steady if slow progress in health measures generally, we are sorry to have to record what amounts to a serious attempt, even if an unintentional one, to hold up progress on behalf of a theory which wider experience has shown to be untenable.

On January 12th, 1926, the Council on Medical Education of the China Medical Association adopted the following finding:

That the need for intelligent care of ordinary maternity cases is so pressing, all over China, that the Council on Medical Education believes a plan should be devised for the training of midwives under competent medical and nursing supervision.

We believe that others than graduate nurses should be eligible for such training, even though not in the same school.

This finding was unanimously endorsed by the Executive Committee at its meeting on 11th June, 1926.

It was further adopted as the finding of the full Conference of the China Medical Association at its Biennial meeting in Peking on 8th September 1926, with the addition of the following minute :

That the Committee for co-operation with the Nurses Association of China be asked to formulate a scheme in conjunction with the corresponding committee of the N. A. C. for the training of women other than graduate nurses as midwives, and to report to the Council on Medical Education.

In the disturbed political conditions that have existed since the adoption of the foregoing resolution of Conference, these Committees have been unable to meet. Yet without waiting for such meeting and at their Conference in Shanghai in January, 1928, at which we believe less than 10 per cent of the members of the Nurses Association of China were present, the following resolution was adopted :

That the N.A.C. cannot participate in any scheme which prepares to train non-nurses in the science of midwifery. Two reasons are presented :

- (a) Previous training as a nurse renders the candidate better able to assimilate knowledge, and ensures the preliminary essential understanding of asepsis and antisepsis. The N. A. C. considers that trying to give a Midwifery Training without a previous Nursing Course is building on a foundation of sand which will give way in some critical moment to the detriment of the patient.
- (b) Hospitals which have a large enough practice in *normal* cases to train pupil-midwives are very few at present, these should all be registered for the training of nurse-midwives.

We consider that it is a matter for great regret that in this hasty way, and at a meeting so sparsely attended, the Nurses should have attempted to pledge themselves against a project so universally considered necessary by our Association as proved by the unanimous findings of one of its most important Councils, its Executive Committee, and a very largely attended Conference.

We had the honour of addressing the National Medical Association recently and we have no doubt at all that the Chinese doctors feel much as we do on this important subject. It would be strange if it were otherwise, for the present conditions of child-birth in China are a menace to the health of the people at large. As we pointed out in that address some fifteen million babies are born in China every year and the Nurses will find it hard to persuade the profession that not till a girl has taken a training which is to be as long or longer than a doctor's

training, can she be in a position to help at a normal labour. This means that for the next century most of the labours must be unattended, both because of the scarcity of midwives and the fees that must be asked by women of such long professional training.

Further the opinion of the profession throughout the world in general is against the judgement of the 90 Nurses who met in Shanghai. We can speak from personal experience of the enormous value of trained midwives of Chinese race in Formosa where the Japanese medical authorities have adopted the plan of giving a short training in midwifery to suitable girls. The scheme has not been followed by the serious consequences that these resolutions threaten, and what Chinese girls in Formosa can do, Chinese girls in China can do at least as well.

Happily there are already schools of midwifery in China where non-nurses are being trained. We hope in a later issue to be able to tell something of the remarkable work that such schools are accomplishing.

In the meantime all we can hope is that the resolutions referred to will stir up so much interest that the necessity will be brought more home to the doctors both Chinese and Foreign who could help in the training of midwives, and that they will take up this branch of work to the great advantage of the people of China as a whole.

Since this Editorial was written the Executive Committee at its meeting on March 1st, 1928 has adopted the following resolution:—

That the Executive Committee reaffirms its opinion expressed in the minute of the Council on Medical Education of January 12th, 1926, approved by the Committee at its meeting of 11th. June and endorsed by the Biennial Conference of 8th. September 1923, and

That the Secretary be instructed to communicate with the Executive Committee of the National Medical Association with a view to considering the possibility of joint action of the two Associations in arranging for a certificate to be given to trained midwives not possessing a diploma in nursing.

DR. H. H. MORRIS

At its meeting on March 1st., the Executive Committee elected Dr. Morris to the vacant post of Vice-President of the Association.

Among the many Members who have freely given of their time and ability to help the China Medical Association few have been more generous in this direction than Dr. Morris and we very heartily welcome him to this post of honour.

THE SOCIETY OF PARASITOLOGISTS

The current issue of the *Journal* contains the report of the China Branch of the American Society of Parasitologists. The *Journal* has now become the official organ for publication of the reports of the Society and we warmly welcome this arrangement.

Much valuable material contained in the former reports of the China Branch has been lost to readers out here by the publication of the report only in the American *Journal of Parasitology* and the form in which reports were distributed in China made filing of them almost impossible.

In future, publication in the *China Medical Journal* will be made at regular intervals and reprints prepared of a standard size for future reference.

THE SHANGHAI SANITARIUM

Our friends of the Seventh Day Adventists are to be congratulated on the erection of a thoroughly up to date plant in Shanghai. The hospital is built on one of the most attractive and healthy sites outside the city and is well worth a visit by any medical man passing through Shanghai. Under the superintendence of Dr. H.W. Miller a successful future for this institution is assured. A brief account of the building will be found in this issue of the *Journal*.

THE ELLA SACHS PLOTZ FOUNDATION FOR THE ADVANCEMENT OF SCIENTIFIC INVESTIGATION

We have been asked to call attention to the above named Foundation and are glad to give the following details from the Fourth Annual Report.

During the fourth year of the Ella Sachs Plotz Foundation for the Advancement of Scientific Investigation fifty-five applications for grants were received by the Trustees, thirty-four of which came from eleven different countries in Europe and Asia, the remaining twenty-one coming from the United States. The total number of grants made during this year was twenty-four, one of these being to an investigator to whom aid was promised in 1926 for two years. Seventeen of the new grants were made to scientists in countries outside of the United States.

In the four years of its existence the Foundation has made fifty-five grants and investigators have been aided in the United States, Great Britain, France, Germany, Austria, Hungary, Switzerland, Italy, Sweden, Esthonia and Czechoslovakia.

In their first statement regarding the purposes for which the Fund would be used the Trustees expressed themselves as follows:

1. For the present, researches will be favored that are directed towards the solution of problems in medicine and surgery or in branches of science bearing on medicine and surgery.
2. As a rule, preference will be given to researches on a single problem or on closely allied problems; it is hoped that investigators in this and in other countries may be found, whose work on similar or related problems may be assisted so that more rapid progress may be made possible.
3. Grants may be used for the purchase of apparatus and supplies that are needed for special investigations, and for the payment of unusual expenses incident to such investigations, including technical assistance, but not for providing apparatus or materials which are ordinarily a part of laboratory equipment. Stipends for the support of investigators will be granted only under exceptional circumstances.

In accordance with the policy outlined in paragraph 2, four of the investigations which have been aided in 1927 bear on the general subject of chronic nephritis, and in each of the three preceding years there were four grants for work in this same field. Other general subjects, especially internal secretion and infection, have been favored by grants in successive years, but not to so great a degree as nephritis.

Applications for grants to be held during the year 1928-1929 should be in the hands of the Executive Committee before May 15, 1928. If all funds are not assigned in the spring, further consideration will be given to applications received before September 15.

Applications should include statements as to the character of the proposed research, the amount of money requested, and the objects for which the money is to be expended.

Applications should be sent to Dr. Joseph C. Aub, Massachusetts General Hospital, Boston 14, Massachusetts.

China Medical Association Section

CHINA MEDICAL ASSOCIATION

General Balance Sheet for year 1927

Receipts

Balance from 1926	\$1384.98
Membership Dues	4289.14
Subscriptions	1057.76
Sales	602.08
Advertisements...	4520.16
Appropriation—China Medical Board	10000.00
Bank Interest and Dividends...	764.29
TOTAL:	\$22618.41

Expenditure

Journal Printing	\$6440.43
Office Printing	493.50
Salaries and Wages	11237.00
Travelling	410.00
Postage, Telegrams &c.	774.46
Loss on out-port Cheques	10.95
Councils and Committees	56.30
Office Furnishings and Sundries	198.14
Rent and Taxes	1027.98
Commission on Advertisements	664.45
Special Reserve	600.00
TOTAL:	\$21913.21
BALANCE:	705.20
TOTAL:	\$22618.41

Audited and found correct,

20th. February 1928.

(signed) Walter Milward.

It should be noted that the slight excess of expenditure over income is due entirely to the difficulties of publication of the Journal in the past year. This has now been overcome and a favourable balance is expected at the end of the current year.

Current Medical Literature**THERAPEUTIC MODIFICATION OF THE DIET IN INFANCY**

HECTOR C. CAMERON, M.D. Cantab, F.R.C.P. Lond.

Detrimental Effect of the Advertisements of Proprietary Foods.

To the lay mind the proof of the pudding is in the eating. Digestive derangement, however caused, is taken as indicating that the particular diet adopted is responsible for the disturbance, and a change is demanded. One food after another may be tried in an unmethodical search for something which "suits." The numerous advertisements of proprietary foods are cleverly designed to play upon the anxieties of the mother. Their effect in producing this constant demand for change and in increasing our difficulties is not lightly to be set aside. Nothing is more amazing to-day than the success of advertisement in a population trained to read but not to reason. The latest device is the advertisement in the form of a Socratic dialogue—hitherto confined to the vendors of cheap furniture—under a picture of the kindly doctor with his arm resting reassuringly on the shoulder of the distressed young mother, while he extols the virtues of the food, and she dutifully undertakes to follow such good advice.

These foods are to some extent the raw materials of the physician's art. Their virtue lies in the uses to which they are put, not in their composition. Many owe their origin to successful prescriptions in the past for particular types of disturbance. Commercially, however, there is little profit to be made by putting on the market a diet for sick infants only, hedged by restrictions and indications for and against its use. It is more profitable to make the claim of universal applicability, based on selected cases which have undoubtedly thrived by their use.

*Ill Effects due to Misunderstanding of Propaganda
for Infant Welfare.*

The appreciation of the disastrous effect of these repeated and injudicious changes of diet in the dyspeptic disturbances of infancy has led some to go to the opposite extreme, and to maintain that, by a rigid adhesion to some particular formula or scheme of feeding, success can always be attained, at least in what is called a "well baby." This is the attitude which has been associated, to take one well known example, with the name of Sir Frederick Truby King. He says in effect: "Give me a healthy baby, and I will show you how to keep it healthy." If we were to ask him he would say: "With sick infants I have nothing to do. My work is preventive, not curative." He rightly regards the preparation and supervision of the diet of the

healthy infant as falling within the province of the educated mother or children's nurse, supervised and instructed, if need be, by the trained nurse or infant welfare worker. No one can fail to admire the enthusiasm which he has thrown into his work and the energy with which he has conducted his extensive propaganda among mothers and nurses. But propaganda upon matters of health is by no means free from danger to the public. There is, indeed, at the present time an attempt on the part of certain medical men to enlist the services of the lay press in bringing medical knowledge to the notice of the public. Those who oppose the suggestion and are fearful of its effects may well point to certain unhappy results which have followed on the propaganda for infant welfare. No one branch of medicine has been so subjected to this process of popularization. For popular consumption propaganda must be so simplified that the truth is almost squeezed out of it in the process. An outline, a mere diagram, is all that can be depicted, without light or shade, without degrees of emphasis, and without consideration of exceptions or variation. Hence we find that the successful propagandist is seldom himself expert. Late in life a surgeon, supreme in his art, turns dietitian, or an asylum superintendent devotes his later years to the standardization of infant feeding.

All standardization is detrimental to the progress of medicine, although it immensely simplifies elementary teaching. The effect of standardization in this instance, although certainly not its aim, has been to tend to leave the doctor out as one no longer needed. The public has become confused. It hears the Truby King or some other "system" of feeding extolled as giving admirable results. Why should these great benefits be confined to healthy infants? The mother of some ailing child demands that it, too, should share in them. And so it comes about that ailing infants are admitted to institutions which were designed only for preventive work, and that mothers and nurses come to regard the standard diet—which I should look on much as a sighting shot, to be persisted in only if successful—as conferring health on all dyspeptic infants.

If it were possible to feed all infants, healthy or sick, in the same way, it would indeed be true that the subject could have no possible interest for medical men. The nurse, trained in the preparation of the particular diet, would then rightly take charge. The routine dietetic treatment, known beforehand, is then all that is required, beyond that skilled nursing and handling which every baby needs, and which is, in truth, the irreplaceable and allimportant contribution of the trained nurse. Indeed, under a standardized system it is not necessary before giving advice to see the infant at all, or to make any examination of it. In one of the largest institutions for infant welfare it is considered

possible to manage the whole business by letter. The matron conducts a consultation department known as "Better Babies by Post." From all over the country mothers write describing the symptoms from which their babies are suffering, and question and answer are published in the lay press. The child may be overfed or underfed, it may have pyelitis, or it may be suffering from injury to its medulla oblongata at birth—no one knows, but the advice by post, a little stereotyped perhaps, but simple and legible, is always to be obtained. Such happenings bring discredit upon a subject the welfare of which all of us have very much at heart.

We need, I think, above all the elevation of pediatrics, as the most truly educative of all subjects, as well as one of the most important in practice and for the service of the State, to a more important place in the curriculum. I would welcome, too, some restriction on the trade in proprietary infant foods, and in the character of their advertisements. The difficulties of the infant welfare movement will right themselves in time. In time the public will learn not to confound sensible advice on the care and diet of a healthy infant with the therapeutics of the sick.

B. M. J. December 24, 1927.

HEALTH OF THE SCHOOL CHILD

SIR GEORGE NEWMAN

Treatment by Artificial Light

Artificial light as a method of treatment for various defects and diseases has achieved great popularity during the past few years. It is a form of treatment which appeals vividly to the imagination, but experience shows that both skill and caution are required in its administration. The following notes are founded on the reports of school doctors: Dr. Hill of Carshalton is of opinion that the treatment has no actual influence on the rate of gain of weight. Dr. Saunders, tuberculosis officer of Croydon, notes that "the very debilitated, anaemic, chronically delicate child appears to react adversely to the treatment. In cases of extreme debility the tissues do not appear to be able to respond, and the net result is a further drain upon the vitality of the child. This manifests itself in loss of weight, increasing listlessness, and nervousness." In catarrhal conditions it was found that there was no diminution of the symptoms as a result of treatment. Rickets did not show any better response to light than it did to cod-liver oil. In the treatment of surgical tuberculosis, on the other hand, light has proved of great value. Children suffering from tuberculous glands do well; the effect is most manifest in those cases with

discharging sinuses. The most successful results have been obtained in the treatment of lupus. Pronounced successes are reported in the treatment of psoriasis, impetigo, and alopecia areata. There is very little evidence of any benefits obtained in the treatment of nervous conditions. Certain children become ill and irritable. Generally children become more cheerful, but where strict investigation has been made, as at Carshalton, it has not been found that artificial light has any lasting influence on either mentality or character.

B. M. J. December 17, 1927.

DEFICIENCY DISEASES

There is a tendency to consider that deficiency diseases are almost synonymous with avitaminosis. Recent experimental work on farm animals has shown, however, that not only is this far too narrow a view to take, but that, in fact, disease may be due to deficiency of certain inorganic salts—salts of iron, iodine, manganese, calcium, phosphorus, and so on—minute quantities of which are essential for the well-being of all animal organisms. Thus certain tracts of valuable grazing land in New Zealand are useless owing to the lack of iron in the soil. Sheep pastured on these areas show signs of anaemia, develop lameness, and become emaciated owing to this single deficiency. This can be seen in all parts of the world. One of the most striking examples, however, has been found in the Union of South Africa, where two serious conditions of cattle—"lamsiekte" and "styfsiekte"—have long puzzled the local authorities. Recent investigations at Onderstepoort Veterinary Research Institute by Sir Arnold Theiler and his colleagues have shown that both may be traced directly to a lack of phosphorus. The latter disease is, in fact, due to this condition alone, and so is a true deficiency disease. Lamsiekte, however, is rather different. It is the name originally given by the South African pioneer farmers to a fatal disease of cattle characterized by symptoms of paralysis and paresis, principally of the locomotor system. The first clue to its causation was discovered by Sir A. Theiler in 1915, after observing a natural infection following the deliberate ingestion of skeletal carcass debris. Experimental feeding with the same debris produced the disease, and the idea of a toxicogenic saprophyte was at once considered. This was found to be a specific anaerobic bacillus, *Parabotulinus bovis*, closely related to the well known *Bacillus botulinus*. The next step was an inquiry into the cause of the depraved appetite (osteophagia) which impels the animal to eat carcass debris which it would otherwise shun, and this was found to be due to the phosphorus-deficient vegetation causing a phosphorus starvation in the cattle.

Both can be entirely eliminated by the addition to the food of substances—such as bone-meal—rich in phosphorus, a proceeding which not only causes quickened growth in young animals, but a considerable increase in the milk production in adults. These cases only indirectly affect human medicine, but their fundamental importance is very great, as great, probably as the discovery of vitamins a few years ago.

B. M. J. September 24, 1927.

HUMAN ASCARIS AS A HOUSEHOLD INFECTION

H. W. BROWN

Jour. of Parasitology, March, 1927

In countries where human excrement is used as a crop fertilizer and vegetables are eaten raw or partially cooked, the source of infection by ascaris is obvious, but in countries where this practice is not usual, the drinking water may be held responsible. Streams are nearly always polluted by human excrement and the source of infection is undoubtedly due to soil pollution which is common to all countries. In a certain section of the Republic of Panama where ascaris infection is widespread, neither of the above-mentioned customs prevails, the drinking water in most cases being free from any possibility of faecal contamination. A careful survey was made of all huts, premises, and general living conditions, and sweepings taken from doorways and floors. Ascaris ova were found in large quantities in the remains of stools owing to the habit of children defæcating on the floor of the hut, upon which they also squat while eating their food. It is possible that the ova may find their way into the hut from pollution about the yard. Oxyuris ova were also isolated from the floor of one hut and a child living there was found to be infested with this parasite.

Jour. of Trop. Med. and Hyg. September 15, 1927

THE TREATMENT OF BUBONIC PLAGUE BY INTRAVENOUS INJECTIONS OF ANTI-PLAGUE SERUM

A. S. DAWSON, L.M.P.,

Medical Officer, Thonze, Tharrawaddy District, Burma.

Prior to the very successful results obtained by the introduction of this valuable remedy, medical practitioners had to depend on such germicidal agents as tincture of iodine, hypertonic saline solution—as it is called, and much talked of by observers who happen to be medical men of repute. We are told that the iodine does its work by

inducing "leucocytosis," which in turn kills the *Bacillus pestis*; whilst intravenous hypertonic saline does its work by diluting the toxins of the plague germ, or possibly again by inducing leucocytosis, which in its turn kills the *Bacillus pestis*, wherever it may be. We have noticed some good results to follow both these lines of treatment, but plague caused by the *Bacillus pestis* is a septicaemia, and the high fever associated with the disease means that the blood is loaded with toxins. Hence the most direct method of combating this very fatal disease is by introducing into the blood stream such remedies as antiplague serum. After considerable experience of plague, my method of treating the disease is as follows:

As soon as one knows the case to be one of plague, there should be no hesitation in giving an intravenous injection of 30 to 40 c.c. of antiplague serum, and a further dose of 20 to 60 c.c. of the same serum into the cellular tissue of the abdomen, or into the inner aspect of the thighs or the flanks—whichever site may be most suitable. The dosage of serum given may depend on the temperature of the patient, but no hesitation should occur in spite of even a very high temperature, such as 106° F.

Immediately following on the injection, within six hours the temperature will fall to normal or to 99°F., and the results are so encouraging that even if you see the patient on the first day of disease and in an unconscious condition, you may hope to save his life. I am emphatic in saying this, as this is my experience in this town of Thonze, where I have dealt with more than 200 cases of plague during the epidemic years 1924-25-26-27. Of 50 cases which I first saw in a moribund condition I have a record of 16 cases successfully treated by this method, but others were past recovery under any line of treatment when first seen. Sometimes cases which appeared to be hopeless recovered within 24 hours.

One important point to bear in mind in administering this remedy is that, at the time of reaction when the temperature is very rapidly dropping to normal or sub-normal with profuse sweating, the patient's relatives should be warned that fatal cardiac collapse may supervene if the patient sits up, or tries to move. Absolute and complete rest in bed is indicated, and even turning on one side or the other without assistance should be debarred, as the heart is very weak in plague—a special and peculiar feature of this disease. In all cases of plague the tendency to sudden heart failure is most marked, and a stimulant heart tonic is always indicated.

THE SERUM TREATMENT OF PLAGUE

R. D. PAL, M.B.,
Toungoo, Lower Burma.

The symptomatic and stimulant treatment of plague can at best only occupy a secondary place in the attempt to deal with the greatest scourge of the East.

There is a great variation in the severity of the disease, even during the course of the same seasonal outbreak. Usually, during the first half of the epidemic most of the cases end fatally, just as the death roll is heaviest among the vanguard troops. In the latter half it declines in virulence, and there is a tendency to spontaneous cures, and it is during this benign phase that most of the cures are effected by one or other of the "latest stunts," and the percentage of recoveries then works out very high.

The only line of treatment that has met with any consistent success in my hands has been by the use of antiplague serum, obtainable from the Pasteur Institute, Paris, or the Indo-French Drug Co., Bombay. Most of the failures of serum treatment are due to the very small dosage employed, and the fear of anaphylaxis which scares many a medical man from giving it intravenously.

I have been using the serum for the last three years, and the results have been most encouraging. I give from 40 to 60 c.c. *intravenously* in a single dose, and repeat this dose morning and evening till the temperature drops to normal. The temperature comes down by several degrees after each injection, and the patient feels a sense of well-being not obtainable with any other drug.

It is a waste of precious time giving the serum subcutaneously, and the injection of a large amount of fluid under the skin is likely to add to the patient's discomfort, if not actually to set up an abscess. In an acute infection where the condition is serious, the intravenous route is not only the safest but it is also imperative, and it would be criminal (except in young children and in those prone to serum reactions) to give it subcutaneously with its slower rate of absorption.

The use of the serum is unattended by any risks whatsoever and if given fairly early, in sufficient doses, and by the intravenous route, results comparable to those with the serum treatment of diphtheria or bacillary dysentery may be obtained even in severe and septicæmic cases.

DIPHThERIA IN THE MALAY STATES

Diphtheria is rare, though somewhat on the increase, in the Malay States, according to a report of the Institute for Medical Research of the Federated Malay States.* This report is of more than local interest as it seems to shed light on the relatively rare occurrence of this disease in the tropics.

No throat-swabs examined by the Institute in 1912-15 were found positive; diphtheria bacilli were found in 11 cases per year during the years 1916-21, and in 44 cases per year in 1922-26. All practitioners confirm that the disease is at present very rare and that the low returns are not merely due to incomplete reporting.

Contact cases are very rare; in only 6 out of 88 cases investigated during the last few years did more than one case occur in the same house. A high percentage of carriers are found, on the other hand, among the contacts and other healthy persons whom it has been possible to examine. In three classrooms, for example, where diphtheria had occurred some time before, 86 boys were examined and 13 of them were found to be carriers. In nine class-rooms where there had been no diphtheria, 210 boys were examined and five carriers were discovered. Throat-swabs from 195 people who were direct contacts of diphtheria patients indicated that 25 were carriers. The report estimates that there are more than 1,000 carriers of diphtheria bacilli in Kuala Lumpur, with its population of 100,000.

These investigations seem to indicate that diphtheria is not a new disease in the Malay States, as was at first believed, but that the population is, on the contrary, highly immune. The results of Shick tests confirmed this.

Shick tests carried out in two schools for Malay boys (172 examined) gave only 9.3 per cent positive results among children from 5 to 10 years and 7.4 per cent between 10 to 15 years; total 8.7 per cent. The rate was found higher in schools for Chinese (29 per cent positive) and Indians (12 per cent positive). Among 100 adults in a home for Tamils, only 2 positive results were found. As a comparison we give figures in New York schools for 1924: 40 per cent of the children from 5 to 10 years and 25 per cent from 10 to 15 years were found positive.

Among the 88 diphtheria cases investigated in the Malay States, 39 were Chinese, 25 Tamils, 11 Eurasians, 12 Europeans and 1 Malay. In proportion to the population counted at the census of 1921, this

*"Notes on Diphtheria in the Federated Malay States," by Dr. William Fletcher, in *Bulletin* No. 2 of 1927, from the Institute of Medical Research of the Federated Malay States, Kuala Lumpur, 1927.

gives 0.8 per 10,000 for Chinese and Tamils, 34.3 for Eurasians, 21.1 for Europeans and only 0.02 for Malays. (These are not annual rates, but they furnish nevertheless some indication of the relative frequency of occurrence of diphtheria cases among the various races).

The prevailing type of diphtheria is severe. Medical officers report the results of treatment in 79 cases: among 35 of these patients which did not receive antitoxin until the sixth day or later, 15 died (43 per cent). The remainder, 44 patients, were given antitoxin before the sixth day, with the result that only 3 died (7 per cent) and 41 recovered.

It is of interest that bacilli morphologically identical with *B. diphtheria*, and having the same action on carbohydrates, are commonly found in the ulcers to which the labouring classes are susceptible, but the strains that were isolated were not toxigenic.

League of Nations Health Report, July 1927.

SOME OBSERVATIONS ON DYSENTERY IN PORT BLAIR, ANDAMAN ISLANDS

A. BAYLEY DE CASTRO, Junior Medical Officer,
and

V. N. DEUSKAR, L.C.P.S., I.M.D., Haddo, Port Blair, Andaman Islands.

The amœbic infection for 1925 at first glance appears to be unduly high and a word of explanation here is necessary. More attention to the microscopic examination of stools was resorted to, and this not only in cases with dysenteric symptoms but for all diarrhœas and even apparently normal stools as well. Further, one single examination of a stool was found to be inadequate and unsatisfactory, and was replaced by eight to ten repeated examinations. It was thus that we came to realise the frequent occurrence of symptomless cases, in whom the microscope alone revealed the vegetative form of *Entamœba histolytica*, and certainly without this aid an accurate diagnosis on clinical grounds alone would have been impossible.

This experience is illustrative of the fact that amœbic infection of the gut with ulceration can continue over prolonged periods without the manifestation of symptoms or inconvenience to the patient, and is strong evidence of the necessity for use of microscope.

As it was both interesting and important to know the exact proportion of such symptomless cases, a careful record for the year 1926 was maintained, which showed that quite one-third of the total amœbic infections, or 33 per cent, were symptomless cases.

Another interesting feature is the proportion of amoebic to bacillary dysentery. It has been stated that one-fifth to one-sixth of the total cases of dysentery in India are of amoebic origin.

From the study made in Port Blair for the past three years we found that quite 40 per cent of our cases were of amoebic origin, a proportion much higher than the estimated average for India.

In none of these amoebic cases was the total number of stools passed per diem more than 18, while the usual number was 8 to 12. This may lead one to believe that the infections must have been mild, but such a conclusion would be wholly fallacious. We must here make a special note on a certain prominent and frequent symptom observed, especially in the 1925 series of bacillary dysentery cases. This was œdema of the lower extremities.

This œdema did not necessarily develop in long standing, chronic and markedly debilitated patients; for instance when No. 38631 reported sick (13-7-25) he had this anasarca of both legs, and another patient had this œdema and later developed marked ascites. He ran a long and protracted illness before he finally recovered.

These cases were not necessarily fatal, but one and all were invariably received as acute cases.

In many cases this symptom had a tendency to relapse.

A reference to a paper entitled "A note on the use of emetine intravenously" by the junior writer which appeared in the *Indian Medical Gazette* for April 1926 may be of interest as regards the three queries made therein with regard to the therapeutic efficiency of emetine intravenously.

(a) Whether with this treatment (i.e., intravenous administrations), negative stool examination results are obtained earlier than with other modes of administration?

(b) Whether the subsequent effects of emetine are of a more lasting nature, and should the answer to this be in the affirmative, then:

(c) To what extent is the tendency to relapses cut short? Before attempting to answer these queries we wish to make it clear that our routine treatment for the 1926 series was a course of 12 grs. of emetine with a 3 days interval after the first 6 grs.—except in refractory cases where this routine was modified to suit the nature of the case as shown in the notes quoted above. After an experience of three years we now consider ourselves able enough to state that:—

1. Negative results of microscopic stool examinations are not necessarily more quickly obtained by the intravenous administration of emetine hydrochloride.

2. That, from the 1925 series which were treated with a total of 15 grs. of emetine, relapses to the extent of 15.62 per cent. resulted, which we consider to be in no way lower than when emetine was administered by other methods.

3. From this and from the fact that relapses occurred after from 46 to 247 days we are inclined to believe that the action of emetine administered by the intravenous route is not of a more lasting nature than by the intramuscular or subcutaneous routes. The fact that in 2 of the cases quoted above vegetative forms of *E. histolytica* reappeared 12 and 15 days after an intravenous course of 12 grs. further supports the opinion expressed.

A brief reference now to amœbic affections of the liver may not be out of place. In this settlement with its high amœbic incidence it is a matter of some surprise that hepatic affections of amœbic origin are extremely low.

The senior writer, who has been here more than five years, has not met with a single case of liver abscess, and of non-suppurative amœbic hepatitis the junior writer has seen one very typical case (out of hospital) in 1925. This patient had co-existing intestinal amœbiasis also and the response to emetine in this case was magical.

During 1926 we had three cases of non-suppurative hepatitis which were clinically diagnosed as of amœbic origin from the history of the patients.

The temperature charts of these cases give some idea of the temperature-controlling effect of emetine and corroborate the often-made statement that of all amœbic affections those most readily amenable to emetine are the non-suppurating inflammations of the liver.

In this low incidence of hepatic implication here the rôle played by emetine must be an important factor, but when we remember that quite 33 per cent. of intestinal infections with *E. histolytica* occur as symptomless cases, and when this is taken into account, we cannot help thinking that there must be some other factor at work besides emetine that materially helps in keeping down amœbic affections of the liver.

Ind. Med. Gaz., December, 1928.

Book Reviews

DISEASES of the NOSE, THROAT and EAR. W. S. SYME, M.D., F.R.F.P. & S.G., F.R.S.E. E. & S. Livingstone, 16 & 17 Teviot Place, Edinburgh 12/6.

Two things about this book will at once commend it to the busy reader—its concise completeness; and another fact for which the Author apologizes, viz. his frequent use of the personal pronoun. It is an eminently practical work, well written with the irreducible minimum of “padding”—exactly the work to be constantly referred to by the General Practitioner, whose opportunities for training and practice in this subject have been slight.

Possibly Resection of the Nasal Septum will not be undertaken in the East in so many cases as the Author seems to indicate, but at least one has a very good guide to the performance of the operation when it is done.

Tonsillectomy is described fully and here again the personal element in the Author's recommendations will be found most helpful to one who may be in doubt as to which of the many operations to prefer. The same applies to the detailed description of operations for mastoid empyaema.

A section of great usefulness and merit is the one on Syphilis, Lupus, and Tuberculosis of the upper respiratory tract, the differential diagnosis being dealt with most clearly and fully.

The Author's insistence on the commonest cause of deafness being nasal affection will undoubtedly cause the reader to carry out routine examination of the whole of that tract if he has not been in the habit of doing so.

Excellent plates illustrate the well-printed text, and the whole work cannot fail to be a most valuable asset to any and every doctor in the East, where the conditions dealt with in the book are so very common. P. C.

“THE NORMAL DIET” By W. D. SANSUM, M.S., M.D., The C. V. Mosley Company—St. Louis. G\$1.50

The title of this little book is a misnomer. It contains in addition to normal diets, menus for persons suffering from the various types of acidosis and also for those who are over-weight and desire to recover that sylph-like figure which the fashion of the day demands. As the book is intended for the mutual use of physician and patient, the style is popular.

On the whole, the advice given is sound. In our opinion, however, the calorie-content of the normal diets recommended is below the minimum required for an average adult of active habits. The book is written primarily for the American public and the names of many of the articles of food recommended

are Greek to the reviewer. "Chocolate Sundae" is easy, but how does one prepare or consume "Hermits" or "Pettijohns with milk and sugar"? Again, (it may be narrow national prejudice) but "Oatmeal with milk and sugar" is anathema to a "Scotch Reviewer" whatever it may be to an English bard or an American one!

To those of us whose practice is mainly among Chinese patients of the poorer class, this book is of purely academic interest. Would that someone competent to do so would write a similar book of enlarged scope with reference to Chinese articles of diet and their use in disease!

D. S. R.

DISEASES OF THE MOUTH. STERLING V. MEAD, D.D.S., The C. V. Mosby Company,—St. Louis. G. 10.

In the Preface of this work the Author says:—The preparation of this work upon diseases of the mouth has been prompted by the conviction gained from the teaching of both dental and medical students, and from a large consultant practice, of the constantly growing need for a more intimate cooperation between dentists and physicians in the effective handling of the intricate problems of oral sepsis and other affections of the mouth which, if not intelligently diagnosed and treated, may affect disastrously the general health of the patient seeking dental or medical relief.

In seeking to supply this need he has written a book of 554 pages, with 274 illustrations in the text (mostly x-ray photographs) and 29 coloured plates.

Throughout the book classification is a great feature, for example "Stomatitis" is arranged under 8 headings and 75 sub-headings. This tabulation of the various forms of inflammation attacking the structures in and around the mouth is useful and materially clarifies one's thinking on the subject. It is particularly helpful in the sections on Syphilis and Tuberculosis of the mouth, and diseases of the tongue. There is an excellent section, too, on diseases and injuries of the maxillary bones.

In connection with the many excellent x-ray plates the reader is told a good deal as to what results are expected of the radiologist, but nothing about how to produce these results. While this is natural in such a work perhaps a short chapter on production of x-ray photos would not be out of place, and would certainly make the book more complete from the general Practitioner's point of view.

It is interesting to note that Noma is referred to as a rare disease—this will hardly be borne out by the experience of the Practitioner in the East!

The wealth of information given, though not copied from, would be found in books on Dental and General Surgery but it is of great value to have it all set down in one book; and, though the methods of diagnosis are to be used chiefly in larger hospitals with up-to-date equipment, the book will be found most useful as a book of reference for every Practitioner, and a very practical guide as to treatment.

P. C.

賀氏療學。 A Text-book of Practical Therapeutics. H. A. Hare B.Sc., M.D., LL.D. 19th edition. Translated by J. H. Ingram M.D. Fourth Chinese edition 1927. Published by China Medical Association, H. S. Wellcome Fund. 774 pages, with over 100 illustrations. The Mission Book Co., 13 N. Szechuan Road, Shanghai. Price \$5.50 Mex.

This fourth Chinese edition is entirely different from the previous publications. It is not only thicker in volume, richer in material, but also more appropriate in the nomenclature. The Chinese medical terms have undergone a revolution. The translator has marvelous ability in adopting the modern terminology. In this book, for every new term, the old translation is put in parenthesis. This enables older students to understand the recently adopted terms. Such a step is wisely taken as Chinese medical literature is in a transitional period.

The reviewer used the original copy of Hare's Therapeutics as the text book during his school days. At that time, translation was impossible on account of the difficulty of coining Chinese terms. This obstacle is largely removed.

The book contains all the principles of therapeutics, the essentials of B. P. and U. S. P., the two systems of weights and measures, and an elaborate index of drugs and remedial measures. All the medical and nursing schools in China should use it as a text book or at least as collateral reading. C. V. Y.

史氏病理學。 A Text Book of Pathology. Alfred Stengel M.D., Sc.D. and Herbert Fox M.D., 7th edition. Translated by P. L. McALL B.A., M.B., Ch.B. Second Chinese edition 1928. Published by China Medical Association, H. S. Wellcome Fund. 293 illustrations. 502 pages. The Mission Book Co., 13 N. Szechuan Road, Shanghai.

Dr. Stengel's Pathology needs no introduction. It has enjoyed its reputation for a quarter of a century, and will still be welcomed by the medical world for years to come. The reviewer has received much inspiration by listening personally to this great pathologist's lectures and clinical demonstrations. The translator is to be congratulated for his application of modern Chinese medical terms, lucidity of Chinese language, and skilful abridgement of the original work. The book is divided into two principal parts: General and Special Pathology. It is not easy for an English scholar to master Chinese literary style. All those who have done translation-work cannot but admire such a painstaking task.

Scientific medicine and nursing in China must be taught in the Chinese language. Pathology is an important branch of medicine. Those who want to learn about the processes of disease in the Chinese language should refer to Dr. McAll's translation of Dr. Stengel's Pathology. C. V. Y.

羅氏衛生學. Rosenau's Preventive Medicine & Hygiene, 4th edition. Translated by S. M. Woo, B.A., M.D., C.P.H., and I. C. Hwang. 1st edition, 673 pages plus 18. Published by China Medical Association, H. S. Wellcome Fund. Sold at The Mission Book Company, 13 N. Szechuan Road, Shanghai. Price \$5 Mex.

China is in great need of a standard book dealing with the questions of Sanitation and Hygiene. Dr. M. J. Rosenau's "Preventive Medicine & Hygiene" certainly fills this need. The two translators, a returned medical student and a Chinese scholar, both deserve great credit in preparing this abridged copy and writing it in the Chinese language. The style is not only clear, easy to read and to understand, but also interesting and attractive. It is not a literal or unnatural translation and we cannot but admire the work. It deals with the following topics: Prevention of the Communicable Diseases, Public Health Measures and Methods, Heredity, Eugenics, Food, Air, Soil, Water, Sewage Disposal, Refuse Disposal, Vital Statistics, Industrial Hygiene, School Sanitation, Personal Hygiene, and Disinfection. We recommend this book to doctors, nurses, and all those who are interested in personal hygiene and public health. C. V. Y.

MALARIA AND QUININE, Published by the Bureau for Increasing the Use of Quinine. Amsterdam. 1927.

This book constitutes a popular survey of malaria and of its treatment by quinine. Perhaps the most interesting part of it is the historical survey of malaria and of the discovery and application of cinchona bark in its treatment. There follows a short chapter on the plasmodium and its development, and finally one on the control of malaria and directions for treatment suitable for non-medical readers.

The book is admirably got up and very readable. It is well printed and very excellently illustrated both with classic cuts and modern anti-malarial posters. The map at the beginning is perhaps the weakest point in the book as, purporting to give the distribution of malaria in the world, it goes hopelessly astray over the distribution of the disease in China. J. L. M.

Hospital Report

RANKINE MEMORIAL HOSPITAL, I'-CHANG

C.S.F.M. 1927

Drs. Graham, Borthwick, and Li.

Inpatients	831	Major Operations	377
Outpatient		Minor ,,	267
Attendances	12,363		

We have received a very interesting report of the hospital for 1927, from which we are giving extensive extracts as it illustrates

the splendid work that has been going on all over the country in hospitals suddenly deprived of their medical superintendents.

Dr. Borthwick tells how early in April political conditions necessitated the evacuation of the foreign staff. Describing the subsequent work of the hospital staff he writes:—

Left to themselves they set out to do the best possible for their suffering brethren and to uphold the honour of a Christian Institution. Their path has been no smooth one. For a time they encountered a considerable amount of interference from some of the servants who were openly in league with the communists. After a time however they were able to dismiss these disturbers of the peace. The military also proved a veritable thorn in the flesh. Continually demands were made for permission to occupy the Doctor's houses which were empty, but on every occasion Dr. Li and his associates were able to turn them from their purpose. Twice over did they express a wish to take over the hospital for their own use and here again the loyalty and courage of the staff prevailed and the institution was not interfered with. In addition to such difficulties as these, financial problems also worried them not a little. The silver reserve of the Bank of China disappeared and naturally their notes which were almost in universal use in P'-Chang became worthless. Gradually, however, they overcame this disaster and, working on a silver basis only, soon found their feet again. A hospital cannot be carried on efficiently without supplies and here also the committee found difficulties in the way. The postal system was at sixes and sevens, steamer services to P'-Chang were very limited and freights were extremely high so that it was no easy matter to keep abreast of the daily requirements. At the close of the year there is much to be thankful for. Those left in charge have been faithful to that committed to them and the statistics of work accomplished do them a great deal of credit.

The Rankine Memorial Hospital, however stands for more than mere healing of the body. The spiritual needs of man are not forgotten. For a considerable number of years now the greater part of this work has been carried on by a Chinese evangelist, and through all the months of trouble he has continued faithful in the work to his hand. True there were times when the rush and bustle of emergency work interfered to some extent with the usual routine, but we can rejoice in the knowledge that, while Dr. Li was doing his best for the body, so Mr. Uang was presenting the Great Physician who alone can satisfy the deepest needs of the souls of men.

REPORT TO THE BOARD ON THE FIRST SIX YEARS
OF THE MEDICAL DEPARTMENT

The Board of Foreign Missions of the Presbyterian Church in the U.S.A.
156 Fifth Avenue, New York

(*Extracts*)

HEALTH

The importance of health in the carrying out of the missionary enterprise is so axiomatic that it hardly needs to be enlarged upon, though concrete evidence is impressive and even startling. In the appendix to this report there will be found some facts which are eloquent.

At the same time we do not wish to make a fetish of health. One is reminded of the interesting character in Galsworthy's "Forsyte Saga" who spent all his time keeping fit, and was completely taken aback when someone suddenly asked him what he was keeping fit for. Our attention to health is simply a means to an end. Those of us who are commissioned to concern ourselves with this problem should keep our sense of perspective. We don't want to waste time on health matters or develop neurasthenics. We want to foster an intelligent, reasonable viewpoint and habitual practice, which is an important but subordinate matter, undergirding but not encroaching upon the central purpose. All this can be rather easily stated on paper, but not always so simply carried out in real life. As Lennox of Harvard Medical School—formerly at the P.U.M.C.—to whom we look as an authority on missionary health matters because of his extensive studies—so well puts it :

“The control of various activities should be transferred as quickly as possible from the higher to the lower nerve centers. Such things as the frequent washing of hands, reaching for the bottle of boiled water, the covering of food, etc., instead of being, as at first, a matter of cortical volition should be made as nearly as possible a spinal reflex, thus clearing the higher centers for more important business. The things which make for health should be learned, practised, made a habit, then forgotten. In this way lies mental as well as physical health. He who will not take thought for the prevention of sickness may be in the frying pan; but if his mind is filled with the fear of sickness, he is in the fire. Writes one missionary correspondent: ‘Some missionaries would be happier, if they knew more about the interior of China and less about their own interiors.’ Sound doctrine,

fit for framing beside the advice to emigrant Israelites, 'Trust in the Lord and do good, so shalt thou dwell in the land.'"

The only preventive inoculations of universal value at present for adults are the small-pox vaccine and typhoid-paratyphoid vaccine. These administrations are requisite, unless immunity can be considered to exist. For children, in addition to these, we advise the diphtheria toxin-antitoxin prophylaxis, and suggest consideration of the new scarlet fever prophylaxis, which has not yet reached quite the same established position, or duration of protection.

Correspondence

London
 The Editor of the China Medical Journal
 Jan. 11 1928
 Sir,

My attention has been drawn to the further attack of Dr. Tombs on my system of treatment of cholera in your issue of Oct. last. In his first criticism in the Transactions of the Royal Society of Tropical Medicine and Hygiene of last year, as I pointed out in a brief reply, he fell into the ridiculous mistake of comparing the mortality in the serious Calcutta Cholera Hospital cases, about two-thirds of whom are admitted collapsed, with the deathrate in the much milder cases in villages, only 18 out of 87 of which reported by himself in 1924 were collapsed, and 72 per cent of these died, or about three times the mortality of collapsed cases in my Calcutta hospital series of 1,429 from 1915 to 1919.

Even then he had to resort to the discreditable tactics of omitting all

reference to the death rate of my cases just referred to, while taking the highest mortality in the first year of my work at the new method from the same table to compare with village death rates. In his last two disquisitions he has wisely contented himself with theoretical considerations, which in no way affect the results of my methods. These have been as good or even better in China in the hands of such men as Duncan Whyte, Logan, Cadbury and Hofmann up to Robertson and Anning only last year than in India, so I am content to leave them to speak for themselves. Now that Dr. Tombs has said three times that my methods are all wrong, no doubt he is as immoveably convinced of the correctness of his assumption as Dr. Hadwen is that vaccination affords no protection against small-pox, and as far as I can judge, with as much reason.

I am etc.

Leonard Rogers.

News and Comments**Dr. T. D. Sloan**

Congratulations from his old friends in China to Dr. Sloan on his appointment as Superintendent of the New York Post-Graduate Medical School and Hospital.

Alepol

We have received a sample of a drug bearing this name from Messrs. Burroughs Wellcome & Co. This is described as a selected fraction of the Sodium salts of the total fatty acids of Hydnocarpus oil, for intramuscular, subcutaneous or intravenous injection.

It is claimed that the thrombosis occurring in veins used for injection of the old Sodium hydnocarpate preparation is much less obvious with this new salt. Should this prove to be the case, and that this advantage is gained without any corresponding loss of efficiency in the drug, it will mean a real advance in the treatment of leprosy. Our own experience was that the old Sodium salt was the most efficient of any of the preparations before or since and only the constant thrombosis with the final impossibility of finding available veins induced us to abandon its use.

Alepol is issued in 25 gram bottles, price \$41.40 per dozen.

Liver Extract

Messrs. Eli Lilly & Co. of 42 Kiangse Road, Shanghai, are placing on the market Liver Extract No. 343. The value of liver diet in pernicious anaemia may now be taken as proved and there is evidence in favour of its usefulness in certain other forms of anaemia, and in sprue. The great

drawback heretofore has been the large amount, approximately half a pound a day, of liver which the patient had to consume for an indefinite period and which at times made him wonder whether the cure was not worse than the disease.

Recently however extracts of liver of equal value for treatment have been produced and we are glad to learn that this can now be obtained in Shanghai.

Messrs. Eli Lilly inform us that the product appears in a powder form and is packaged in cartons containing 24 hermetically sealed vials. Each vial contains an amount of this fraction equivalent therapeutically to 100 grams of fresh raw liver. The product is not unpalatable and may easily be taken orally by dissolving in water, orange juice or any other acceptable vehicle. Dosage may vary from three to six or even eight vials per day depending upon the condition of the patient.

Fifth Postgraduate Course in Ophthalmology

Vienna 1928

The fifth special course for post-graduate study in ophthalmology will be given between Oct. 1st. and Dec. 4th. 1928 under the auspices of the American Medical Association of Vienna at the I and II Eye clinic of the Allgemeines Krankenhaus, Vienna, Austria.

Full information can be secured by writing to Doc. Dr. A. Fuchs, Vienna, VIII, Skodagasse 13, or to the American Medical Association, Vienna, VIII, Alserstrabe 9, Cafe Edison.

Institute for Maritime and Tropical Medicine

Hamburg

A course in tropical medicine will be held in the above Institute from 7th. May to 13th. June 1928. For further information apply to:—Institute für Schiffs-und Tropenkrankheiten, Hamburg 4, Bernhardstrasse 74.

Plague in China

Information received from the North Manchuria Plague Prevention Service and from the Government of the Kwantung Territory shows that a plague outbreak occurred early in September near Payintala (also called Tungliao) in the Eastern part of Inner Mongolia. Payintala is a town of about 20,000 inhabitants and the terminus of a branch railway which joins the South Manchuria Railway system at Chien-Chia-Tun, from which there is a railway to Szepingkai on the Mukden-Harbin line. It is believed that lamas coming from the interior of Mongolia at the end of August brought the infection to the villages situated about 17 miles north of Payintala. Several inhabitants in three small villages in this area were infected and died. Two families lost 14 and 13 members respectively. Altogether there were 50 or 60 deaths. The symptoms were those of pneumonic and bubonic plague, but cultures were not obtained. The last case occurred on October 3rd, according to information from Harbin dated October 24th.

League of Nations Epidemiological Report. November 15, 1927.

Surgery in the Past

Little wonder is there that surgery was likened to butchery. Lord Thurlow, when the bill to indemnify the Surgeons Company, and to give it

greater power over the profession, was under discussion said, "There's no more science in surgery than in butchery." To which Mr. Gunning answered, "Then, my lord, I heartily pray that your lordship may break your leg, and have only a butcher to set it."

B.M.J. October 8, 1927.

Malaria in the Pacific

One of the most interesting health problems in the Pacific relates to the curious geographical distribution of malaria. Malaria has a curious well-defined frontier which runs from east to west, north of Samoa and the Fiji Islands and between the New Hebrides and New Caledonia. North of that frontier malaria is everywhere present; in Papua, New Guinea and the Solomon Islands and in the New Hebrides a very large proportion of the population is infected. South of that frontier indigenous malaria and anopheline mosquitoes are both entirely absent. It is difficult to find an altogether satisfying explanation for this extremely interesting phenomenon. In this large malaria-free area, filariasis is extremely prevalent; *Stegomyia subscutellaris*, the chief vector of this disease, is omnipresent.

League of Nations Health Conference. Paris. April, 1927.

Egg Output of Parasitic Helminths

A female *Necator americanus* is responsible for a daily output of about 9,000 eggs.

The output of a female *Anchlystoma duodenale* is several times as large.

It is estimated that a single female *Ascaris* may contain 27,000,000 eggs. Its daily output may be from 50,000 to 200,000.

Jour. of Parasit. December, 1927.

NEW MEMBERS PROPOSED

Sing, Samuel J.	L.M.S. Hangchow	C.M.S. Pakhoi
Proposers:	Dr. Duncan Main Dr. Dugald Christie	
Disosway, Leila M.	M.D. Women's Med. Coll. Philadelphia	A.C.M. Shanghai
Proposers:	Dr. James L. Maxwell Dr. H.H. Morris	
Kao, Lucy	M.D. North China Union Med. Coll. for Women	S.P.G. Peking
Proposers:	Dr. Myrtle J. Hinkhouse Dr. J. Preston Maxwell	
Flowers, Wilfred S.	M.B., Ch.B. Leeds	B.M.S. Tsinan
Proposers:	Dr. S.E. Bethell Dr. James L. Maxwell	
Black, Donald M.	M.D. Univ. of Manitoba	U.C.C. Lungchintsun Kirin
Proposers:	Dr. G. Gushue-Taylor Dr. D. Landsborough	
Ho, Chang	M.B., B.S. Hongkong	Ind. Yunnanfu
Proposers:	Dr. A.J. Watson Dr. H.P. Yew	
Hollister, William	M.D. Univ. of Maryland	P.S. Mokpo, Korea
Proposers:	Dr. J.B. Woods, Jr. Dr. R. M. Wilson	
Soutter, W. Roberts	M.B., Ch. B. Aberdeen	C.M.M.L. Chao-Yang- Hsien, Man.
Proposers:	Dr. W. Phillips Dr. James L. Maxwell	
Chan, Y.P.	M.D. Kung Yee	Ind. Canton
Proposers:	Dr. J. Allen Hofmann Dr. J.M. Wright	
Wong, W.L.	M.D. Queen's Coll. Kingston, Canada	Hackett Med Coll. Canton
Proposers:	Dr. J. Allen Hofmann Dr. J.M. Wright	

NEW MEMBERS ELECTED

Dr. M. Mortensen	N.M.S.	Changsha, Hun
Dr. C.F. Lin	Ind.	Tainan, Formosa