EPIDEMIOLOGY IN CHINA: Practice and Teaching

February 1981

Office of Health, Development Support Bureau
Agency for International Development
Washington, D.C. 20523 U.S.A.

FOR LIMITED DISTRIBUTION

OBSERVATIONS ON THE STATE OF EPIDEMIOLOGY IN THE HEALTH SERVICES AND MEDICAL COLLEGES OF BEIJING AND SHANGHAI

BY

ALFRED A. BUCK, M.D., Dr., P.H.[1]

The Report is based on the experiences made during a visit to the People's Republic of China as a Visiting International Scientist and Temporary Advisor to the World Health Organization, Sep-Oct 1980

[1]Tropical Disease Advisor, Office of Health, Development Support Bureau Agency for International Development (A.I.D.), Department of State, Washington, D.C. 20523 USA

TABLE OF CONTENTS

ILLUSTRATIONS

ACKNOWLEDGEMENTS

All of the data contained in this Report were provided by Chinese physicians, scientists and administrators while visiting their institutions in Beijing and Shanghai. The help of the competent and courteous interpreters assigned to the four Visiting International Scientists by the Ministry of Public Health was invaluable to the work of the Team.

It is not possible in this report to mention each of the many persons who assisted the Team in their tasks and who helped to make their stay in the People's Republic of China such a pleasant and interesting experience. In Beijing, the following were most helpful in obtaining information on special subjects: Dr. Liu Xi-Rong, Deputy Chief, Division of International Organizations, Bureau of Foreign Affairs, Ministry of Public Health; Dr. Dong Han-Chen, Director, Institute of Epidemiology and Microbiology; Professor Wu Cheng-Chien, Vice President, Chinese Academy of Medical Sciences and Professor of Parasitology; Professor Ho Guan-Quing, Professor of Epidemiology; Professor Jian Yo-Tu, Professor of Epidemiology, Chinese Military Academy of Medical Sciences; Professor Zhong Huy-Lan, Director and Professor of Medicine, the Beijing Tropical Medicine Research Institute and Beijing Friendship Hospital; Professor Wang Cheng-I, Deputy Director, Beijing Institute of Tropical Medicine; Dr. Chang Chao-Tung, Superintendent, Second Infectious Disease Hospital of Beijing; Dr. Wang Chun-Tao, Associate Superintendent and Associate Professor of Medicine, Beijing Second Medical College; Dr. Ho Hsin, Chief, Clinical Department, Beijing Second Infectious Disease Hospital and Professor of Medicine, Beijing Second Medical College; Dr. Zhang De-Yun, Director, Dong Cheng District Health and Anti-epidemic Station, Beijing; Dr. Tang Zi-Jing, Deputy Director; Dr. Zhao Bin, Chief, Epidemiology Section; and Mr. Wei Fu-Ye, Mass Prevention Section, Health Bureau, Dong Cheng District, Beijing.

In Shanghai the following were of particular help: Dr. Jiang Zing-Quan, Deputy Director, Shanghai Municipal Health Department; Dr. Liu An-Zu, Chief, Shanghai Medical Information Center; Dr. Xu Zhi-yi, Associate Professor and Deputy Director, Department of Epidemiology, Shanghai First Medical College; Professor Mao Shu-Pai, Director, Institute of Parasitology and Professor of Parasitology First Medical College; Dr. Huang Wuen-Zhou, Associate Professor and Director, Department of Epidemiology, Institute of Parasitology; Professor Chin Wen-Zal, Dean, First Medical College of Shanghai, Professor Yuan Hong-Chang, Director, School of Public Health and their colleagues; Mrs. Pan He-Qin, Official of Foreign Affairs, Division of Shanghai Municipal Health Department; Mr. Wei Ping, Staff Member of Foreign Affairs, Section of Shanghai Medical Information Center; Mr. Chen Yao-wu, Staff Member of Foreign Affairs, Division of Shanghai Municipal Health Department; and Miss Men Ying, Staff Member of Foreign Affairs, Institute of Parasitic Diseases.

Miss Wen Si-Tu, interpreter, Bureau of Foreign Affairs, Ministry of Public Health while in Washington, D.C. as a student at Georgetown University volunteered her services for translating the disease record forms contained in the Annex of this Report.

Credits for providing data for the text, the Tables and Figures of this Report are due to the following persons and institutions. The original data of the census and of the chronic disease survey in the Dong Hwat Men District were kindly provided by Professor Ho Kuan-Ching and his staff; the map showing the distribution of paragonimiasis, clonorchiasis and kala azar was reproduced from a photograph of a drawing prepared by the Beijing Tropical Medicine Research Institute, courtesy of Professor Zhong Hui-Lan. The maps depicting the present distribution of schistosomiasis in the People's Republic and the graph showing the distribution of cases and intermediate host snails by ecological subdivisions of the endemic areas were redrawn from photographs by the author of sketch maps kindly provided by the Institute of Parasitology, courtesy of Professor Mao Shu-Pai. The photograph of the "God of Plague" was taken of the original kept at the School of Public Health, Department of Epidemiology, courtesy of its Director. Invaluable guidance and assistance for the tasks of this Temporary Advisor was provided by Professor Mao Shu-Pai and Dr. Xu Zhi-Yi, Associate Professor of Epidemiology of the Shanghai First Medical College.

Last but not least, gratitude is expressed to Dr. Yaako Tuomehlito, the Team Leader, and to the Director and Administrators of the Regional Office for the Western Pacific of WHO for the courteous and competent arrangements of travel and logistics.

February 8, 1981

A

VISIT TO THE PEOPLE'S REPUBLIC OF CHINA

October 21, 1980

At the invitation of the Chinese Academy of Medical Science and under the sponsorship of the Regional Office for the Western Pacific of the World Health Organization I visited China from September 13 to October 1, 1980 as one of four Visiting International Scientists in epidemiology. The terms of reference for this assignment as temporary advisor to WHO were as follows: to give lectures on the uses of epidemiological methods to physicians, scientists and public health workers at locations to be determined by the Chinese Government; to visit selected health facilities, and to advise health officials on applications of modern epidemiological methods and approaches. Other members of the WHO visiting team included Dr. Paul Zimmet, Director, Department of Metabolic Diseases and Epidemiology, Royal Southern Memorial Hospital Medicine, Melbourne, Australia, as specialist in the epidemiology of diabetes; Dr. Philip S. Brachman, Director, Bureau of Epidemiology, Center for Disease Control, Atlanta, as specialist in surveillance of communicable diseases, and Dr. Jaako Taomilehto, Regional Advisor, cardiovascular Diseases of WHO, WPRO Manila as Team Leader.

The following is the itinerary of my visits.

SEP 13 - Leave Washington, D.C.

SEP 14 - Arrive Tokyo, Narita Airport; meeting with Prof. Tanaka and staff members of the Department of Parasitology, Tokyo University, at the airport.

SEP 15 - Flight from Tokyo to Beijing. preliminary discussions with members of the Chinese Academy of Medical Science.

SEP 16 - Discussions of the program in Beijing with members of the Chinese Academy of Medical Science, the Institute of Epidemiology and Microbiology, the Academy of Military Medical Science and the City Health Department of Beijing.

SEP 17 - Visit to the Eastern Health Station of the City of Beijing, to the Dung Hwat Men Primary Health Care Station at the sub-district level and to one of its Street Health Stations to observe the surveillance network, including the Beijing Hunang Hospital, the sub-district care division, a primary health care station and the district health and anti-epidemic station in Dong Cheng (Eastern Health District), of Beijing. On the same day, in the afternoon, I gave the first series of lectures at the Chinese Academy of Medical Science on the use of epidemiological methods in descriptive and analytical investigations. The lectures were followed by a 30 minutes period of discussions.

SEP 18 - Full-day visit to the Institute of Epidemiology and Microbiology of the Chinese Academy of Medical Science in Chang Ping Liu Zi with staff discussions and visits of the laboratories.

SEP 19 - Morning: visit to the Institute of Tropical Medicine at the Friendship Hospital; Afternoon: visit to the Military Academy of Medical Science, Institute of Microbiology and Epidemiology.

SEP 20 - Lecture on Diagnosis in Epidemiology, and on evaluation and validation of diagnostic tests in population studies.

SEP 21 - Visit to the Great Wall and the Ming Tombs.

SEP 22 - Morning: round table discussions with a multidisciplinary group of members of the Chinese Academy of Medical Science; Afternoon: infectious disease rounds at the Second Infectious Disease Hospital, Beijing.

SEP 23 - Flight from Peking to Shanghai. Preliminary discussions about the schedule of lectures and visits with members of the Shanghai First Medical College, the School of Public Health, the City Health Department, the Anti-Epidemic Service and the Institute of Parasitology.

SEP 24 - Morning: visit to the Institute of Parasitology of the Chinese Academy of Medical Science. Detailed briefings and discussions concerning the state of malaria, schistosomiasis, filariasis, oriental lung fluke disease, liver fluke disease, and kala azar. Afternoon: gave first block of 3 hours lecture at the School of Public Health in the First Medical College.

SEP 25 - Visit to the Shanghai College of Medicine and the School of Public Health, and its Department of Epidemiology. Discussions with the Dean of the College, the Directors of the School of Public Health and of the Department of Epidemiology. Afternoon: Rounds at Rui Ju Hospital, Department of Infectious Diseases.

SEP 26 - Visit to the Shanghai Anti-epidemic Center and discussions with officials about disease reporting, recent outbreaks, surveillance methods, laboratory procedures and quality control, immunizations, and training.

SEP 27 - All morning lectures and discussions at the School of Public Health; Afternoon: boat excursion on the Huang Po and Yangtse River.

SEP 28 - Leave Shanghai for Guangzhou.

SEP 29 - Visits in Guangzhou.

SEP 30 - By train from Guangzhou to Hong Kong, evening: flight from Hong Kong to Geneva, Switzerland (Oct 1, 1980).

Organization of the Health Services:

The health policy of China can be summarized in the following official statement: "To serve workers, peasants and soldiers; to put prevention first; unite traditional and modern medical workers; and to combine health work with mass movement".

The highest health authority in the People's Republic of China is the Ministry of Public Health. According to our informant it has five Bureaus: 1) Bureau of Sanitation and Anti-Epidemic Service; 2) Bureau of Medical Care and Hospitals; 3) Bureau of Health Education, including medical schools and colleges; 4) Bureau of Statistics and Budget; and 5) Bureau of Health Promotion. Each of the 30 Provinces, including the five automous areas, has its own provincial health services, usually including at least one medical school. All major cities have a central city health department.

Below this level, there are the District Anti-Epidemic Stations and hospitals in the cities, with their equivalents of regional and county health stations and hospitals in the rural areas. At the Commune level there are Primary Health Centers. Finally there are Street Health Stations in the cities and barefoot doctors at the village (brigade) level. According to health regulations, twenty-five communicable diseases are reportable. Most recently, dengue fever and dengue hemorrhagic fever have been added to the list. Reporting is done once a week and is required from institutions at all levels of the health care delivery system. Data processing is by hand without the aid of electronic computers.

At present, a cooperative medical service is practiced in rural areas. It is operated on a voluntary, mutual aid basis by the farmers themselves. Its funds are based mainly on income of the communes and production brigades and also from contributions of small sums by members of the communities. Infants and children, both in the cities and villages are given BCG, oral polio vaccines and are immunized against diphtheria, pertussis and measles, free of charge.

Western and traditional medical practices are both taught at the University level and are also both practiced in the hospitals and peripheral health stations. In addition to drug treatment, acupuncture, and a new type of traumatic orthopedics are practiced, and traditional herbs are administered combining ancient Chinese and Western methods of treatment.

At the present time, each of the 50,000 rural communes has a Health Center. In the cities there are altogether about 1,000 large hospitals and approximately 200 medical research stations. In addition there are about 2,000 health and anti-epidemic stations and the same number of child and maternity stations. The total number of hospital beds exceeds 1,850,000. Plans for the immediate future foresee that there will be at least one general hospital, health and anti-epidemic station and a child and maternity clinic in each county; a health center in each commune; a cooperative medical service in each production brigade;

and health workers and midwives in every production team. In this three-level (county, commune and brigade) network the cooperative medical station is the basic unit whose barefoot doctors play an important role, as they are directly responsible for the health of the community members.

By the end of 1978 China had a total of 2,460,000 medical personnel and an additional 1.6 million barefoot doctors, as well as 3.8 million part-time health workers and midwives in production teams.

The epidemiological services are divided into communicable disease control and chronic disease control, following the Russian model of health services. The epidemiology of the non-communicable chronic diseases such as diabetes, cardiovascular diseases, cancer, etc. rests with major teaching hospitals under the auspices of the Bureau of Medical Care of the Ministry of Health. The Bureau of Medical Care has two branches the North Office and the South Office. While the South Office is also concerned with such chronic infectious diseases as schistosomiasis, malaria, filariasis, kala azar and hookworm disease the North Office deals mainly with non-communicable diseases, including goitre, arthritis, cancer, chemical poisoning and occupational hazard. Tuberculosis control is centralized in the Institute for Tuberculosis and Chest Diseases.

Teaching of Epidemiology:

With emphasis on disease prevention, epidemiology is given high priority in all medical teaching and training programs of the PRC. There are four levels of training in epidemiology; 1) for teachers of public health and epidemiology in medical "centers of excellence"; 2) for medical students and students of public health as part of their 5-year curriculum in the medical colleges and schools of public health; 3) for "assistant doctors" and nurses in public health; 4) for health assistants and barefoot doctors through simple instructions and on-the-spot training.

In addition, special post-graduate courses in epidemiology are offered to physicians and public health specialists of different disciplines. These are often concerned with specific diseases of major public health importance, such as cancer, schistosomiasis, cardiovascular diseases, malaria, diabetes, etc. There is also a post-graduate course featuring general epidemiology. This course is scheduled on the basis of needs and is given to physicians in medical colleges who teach epidemiology in those cities and provinces of the PRC which have not yet their own school of public health.

There are at present sixteen schools of public health; each has its own Department of Epidemiology. Six of these schools were established before 1960 and have an experienced faculty. These are located in Beijing, Shanghai, Harbin, Szetchuan, Wuhan and Shansi. The other ten are newer schools 1/ and include "middle level" teaching institutions for assistant doctors. These assistant doctors follow a curriculum similar to that used in the USSR for the training of "feldschers". After nine years of basic education at the elementary and junior high school level, assistant doctors receive three years of formal education and in-field training in different disciplines of public health, including epidemiology.

Some of these graduates have had specialized training in epidemiology and serve in anti-epidemic stations of cities and provinces. They can be found at all levels of the national health services from municipal and provincial to county health centers and street clinics or commune health stations.

The teaching of epidemiology at the graduate level is given by Colleges of Medicine and Schools of Public Health. The Schools of Medicine cover a curriculum of five years until graduation, with a total of 4,000 hours of teaching. The same number of hours is given by the Schools of Public Health which, in contrast to the Schools in the U.S.A., train public health physicians from admission to graduation over a period of five years. During the first 2 1/2 years the basic courses offered at both the Colleges of Medicine and Schools of Public Health are identical and include political science, physical education, foreign languages, physics, mathematics, chemistry, biology, human anatomy, histology and embryology, physiology, biochemistry, microbiology,

A list of these schools and of their locations will be provided at a later date and may be up-dated.

parasitology, pathology, pathological physiology and pharmacology. For physicians, during the second five semesters (2 1/2 years) clinical teaching is carried out in the teaching hospitals covering the following courses: physical and laboratory diagnosis, public health, traditional medicine, internal medicine, infectious diseases, epidemiology, surgery, obstetrics and gynecology, pediatrics, ophthalmology, ENT, neurology, psychiatry, dermatology and nuclear medicine. The corresponding courses for students intending to graduate as public health physicians at School of Public Health include public health statistics, environmental health, industrial health, nutrition and food hygiene, child health, epidemiology and sanitary chemistry. Emphasis is given to the practice and in-field training in public health, and only to a lesser degree to theoretical and practical aspects of clinical medicine.

In addition, specialized post-graduate training courses are given for selected diseases of public health importance by teaching hospitals and Schools of Public Health. These have included such chronic diseases as cancer, cardiovascular diseases, metabolic diseases, and occupational health.

The Institute of Parasitic Diseases in Shanghai serves as the National Training Center for schistosomiasis, malaria, filariasis and kala azar. It offers formal courses and continuing education, including a number of traveling field seminars in other provinces of China. The Institute of Tropical Medicine in Beijing, the Institute of Filariasis in Shantung, the Institute of Virology in Beijing, the Institute of Oncology and other specialized programs of the Chinese Academy of Medical Science each have their own Departments of Epidemiology with their own, often different, training programs.

In the places visited there seems to be little coordination of the research programs, teaching curricula and post-graduate programs in epidemiology of the various institutions. Even in a visit as short as ours it became apparent that there were duplications of efforts, omissions of important segments of public health and, most of all, insufficient analysis and synthesis of the already available information.

In July 1980 the Chinese Society of Epidemiology was founded. Dr. Shu Delong of the Department of Epidemiology in Shanghai was appointed as its Chairman and Professor Ho Kuang-Ching of the Academy of Medical Science, Professor Jiang Yu-Tu of the Military Academy of Medical Science and Professor Gun Kuan-duyeyc of the Tientsin Medical College were appointed vice-chairmen. The society has now approximately 300 members, including epidemiologists working in communicable and non-communicable diseases. One of the goals of the new society is said to be concerned with improvements and standardization of the training programs in epidemiology.

A new text book of epidemiology in Chinese is in preparation. It is scheduled for publication by the People's Medical Press in 1981 under the title: "Epidemiology, a text book for medical colleges".

Visit to the Dong Cheng District Health and Anti-epidemic Station, Beijing and to the Dong HWat Men Primary Health Care Station

The City Health Department of Beijing has four major Health Districts. Each Health District has a hospital and a Health and Anti-Epidemic Station. The hospital is charged with the supervision of all health personnel in the integrated health services. The Team visited the Hunang Hospital of the (Eastern) Dong Cheng Health District of Beijing. The hospital has 200 beds and a staff of 500. This general district hospital has six departments, i.e., Internal Medicine, Surgery, Gyn-Obs, ENT, Ophthalmology and Traditional Medicine. The hospital has its own clinical laboratory, a radiology department and a pharmacy. In addition to the clinical staff, there are Divisions of Mass Prevention and Mass Treatment, Surveillance and Primary Health Care. Dr. Wu, the Head of the Division of Primary Health Care, has a staff of 13, including 5 Street Health Stations, and 6 neighborhood health communities. A Street Clinic serves about 4,000 persons, a Primary Health Care Center is responsible for 15 to 20,000 inhabitants and the Eastern Health District of Beijing is responsible for the well-being of 600,000 people, living in an area of 24.6 km .

The functions of the Primary Health Care Station include nine programs: 1) Family Planning; 2) Mother and Child Health; 3) Immunization; 4) Communicable Disease Control, with 25 reportable diseases; 5) School and Occupational Health; 6) Sanitary Inspection Service; 7) Health Education and Promotion: 8) Chronic Disease Care; 9) Disease Surveillance.

Water Supply and waste disposal are centrally controlled by the City Health Department. All families in the area of the Primary Health Care Station live within a 20 minute walking distance from a Street Clinic.

Examples of the various disease reporting forms and census records used by the City Health Departments of Beijing and Shanghai are attached as Annex 1 - 7.

There is a strict program of population planning by child spacing. This is achieved by the rigorous application of all of the presently available methods of birth control, namely IUD, condom, diaphram, the pill, abortion and, as a special feature in China, encouragement of late marriage. At present, the one-child family is officially proclaimed as the most desirable size for the residents of the major cities and the most densely populated areas of PHC. Tax incentives are also used as a means of family control. In the Sub-District visited by the Team, child spacing is planned one year ahead. For example, for 1981, 56 births were "allowed". The actual birth rate in the community for 1980 was 128/14,175, or 9 per 1,000 population. The corresponding crude death rate for the same period was estimated as only 3.5 per 1,000.

For its disease surveillance program, the Sub-District carries out an open-ended census. It also keeps systematic records of birth and death by cause and conducts systematic household interviews and special investigations, as needed. The information collected is coded, but these codes do not always correspond to those used in the International Classification of Diseases. In addition to these studies, the Sub-District has carried out a pilot study for surveillance of chronic diseases. The most important causes of death in the city population were, in order of frequency, cardiovascular diseases, chronic lung diseases and cancer. As a special feature in the surveillance project, all causes of diabetes remain under supervision of the hospital. For hepatitis there exists an elaborate system of reporting and cross reporting between the different health services, the chronic disease surveillance unit and the Disease Prevention Division of the City Health Department and the District Stations. The Primary Health Care Station has no laboratory facilities. Laboratories are located at the hospital for the clinical tests and at the District Health and Anti-epidemic Station for the laboratory tests required for sanitation and food quality control. To collect more specific data on health than could be obtained during the brief visit to the local health facilities, I requested that our hosts supply the original baseline data of the census, of the chronic disease survey of the frequency distribution of occupations of the 14,175 residents of the Sub-District. The analyzed data are shown in Figure 1 and Tables 1 and 2 of the text. Figure 1 shows the strong impact of the birth control program on the age distribution of the population; the symmetric shape of the upper half of the population pyramid still reflects that of a developing country with high, but stable birth and death rates. There is female preponderance in almost all age groups, except for those under 20 years.

The occupations of the residents in the Sub-District are shown in Table 1. Note the high proportion of occupations classified as the "cadres" and the relatively low percentage of retirees in this population with its relatively high number of persons over 50 years of age. Since 1976, there has been a pilot study for reporting "chronic diseases". The results are shown in Table 2. There is an excess of males for the diagnosis of liver diseases and gastro-duodenal ulcers and an unexplained preponderance of female cases of heart disease, nephritis, tumors, metabolic diseases, arthritis, and neurologic disorders.

After having seen the Primary Health Care Station, the Team visited a Street Clinic which serves about 4,000 persons. Here, most of the basic drugs for the treatment of the common diseases are available. Admission fee for each visit is 5 cents. The major diseases seen by the health practitioner-nurse were hypertension, chronic broncitis, common colds, childhood disease, pneumonia and minor injuries and wounds. Acupuncture is practiced. The nurse and health aides are responsible for school health and serve as visiting nurses for bed-ridden patients in their "street" area.

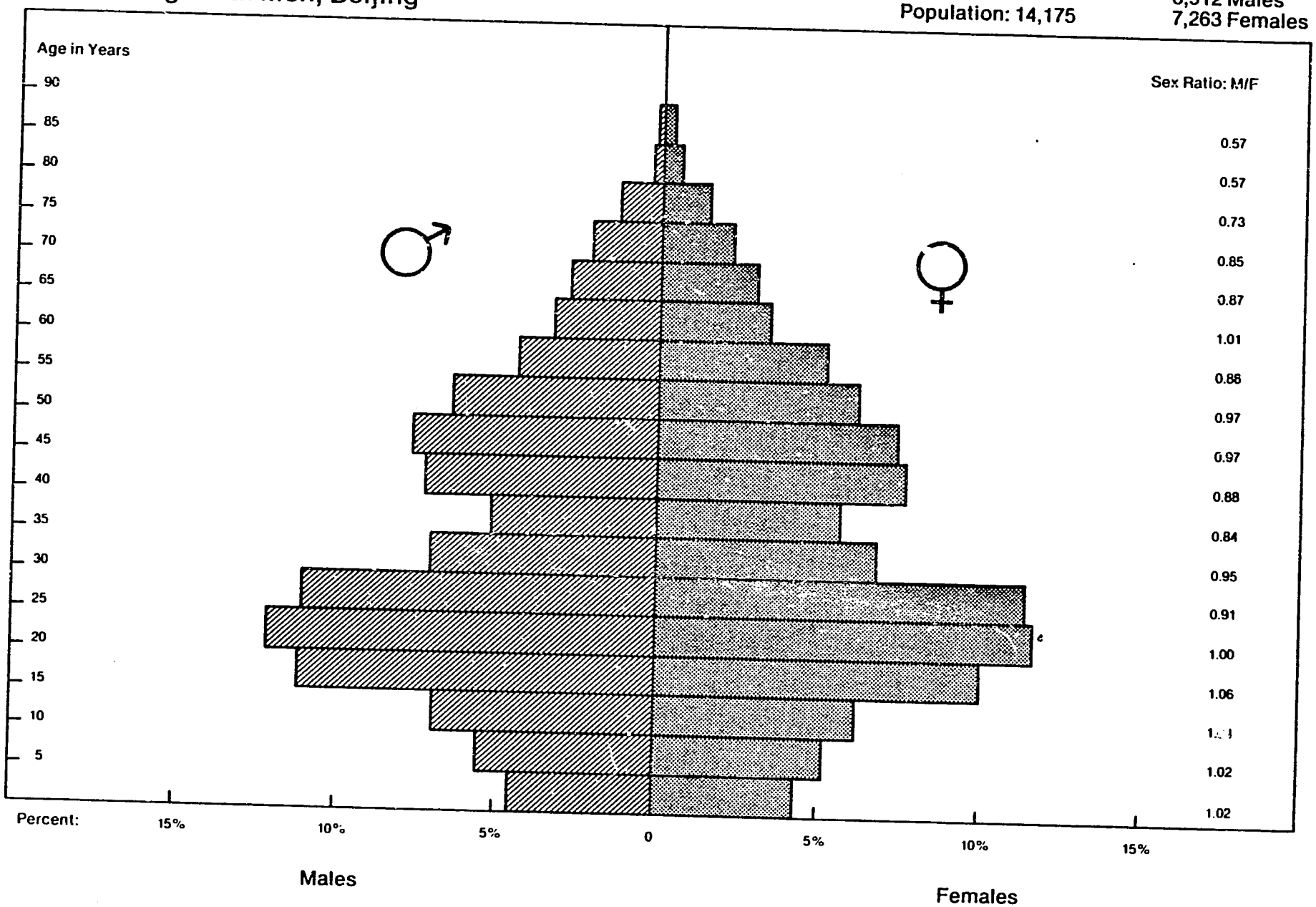
After the Street Clinic, the Team paid a visit to the Dong Cheng District Health and Anti-epidemic Station in Beijing. Dr. Zhang De-yun is the Director, Dr. Tan Zi-jing ,the Deputy Director and Dr. Zhao Bin, Deputy Chief of the Epidemiology Section. Dr. Zhang had a rather interesting career. She graduated from the Beijing Nursing School. After having worked for a number of years as a nurse, she was permitted to continue her formal training in public health for one year and, because of her achievements, was then awarded another one-year course for "Doctor's upgrading". The Health Station has a staff of 125 of whom 15 are in an administrative position. The District Health Station serves a population of 500,000 people in East Beijing and is responsible for sanitaty inspections of 1,600 shops, restaurants and other food producing or eating facilities. The station is also charged with school health, occupational health, health education, environmental protection and local arrangements for sewage disposal. The station has laboratories for sanitation and a chemical laboratory for food analysis. At present the District Health Station supervises 27 Primary Health Care Stations with hospitals and 210 street health stations with a total staff of 376.

A large scale survey was carried out on 71,972 persons. We were told that the data collected during the cultural revolution, i.e., between 1966-1976 were considered unreliable. After mass immunization, there has been a considerable reduction in the incidence of measles. There were a total of 22 cases per 100,000 population in 1979. No cases of poliomyelitis, pertussis and diptheria were observed during the past five years. However, there have been a few cases of malaria which were imported by visitors from areas where malaria is still endemic.

With its many tasks the District Health Station is short of staff. The laboratories can only carry out basic tests in bacteriology. With the presently available facilities, they have no capability to distinguish between the different etiologies of diarrhea. There appears to be a pressing need for the creation of an adequate network of public health laboratories and of a data processing facility to analyze the many data routinely collected by the City Health Department of Beijing and its District and Primary Health Care Stations.

Primary Health Care Station:

Dung Hwat Men, Beijing



Occupational Status of the 14,175 Residents of Dung Hwat Men Primary Health Care Station, Eastern District Health and Anti-Epidemic Station, Beijing, China 1980

OCCUPATION	Males No.	Percent of Total	Females No.	Percent of Total	Sex (M/F) Ratio	Total No.
Pre-School Children						
Nurseries	72	1.0	75	1.0	0.96	147
Residential	337	4.9	342	4.7	0.99	679
Students						
Primary	564	8.2	541	7.4	1.04	1,105
Middle	653	9.4	634	8.7	1.03	1,287
Advanced*	11	0.2	8	0.1	1.38	19
University*	64	0.9	49	0.7	1.31	113
Workers	2,380	34.9	2,136	29.4	1.11	4,516
Food Store Clerks+ and Handlers	90	1.3	156	2.1	0.58	246
Cooks	76	1.1	78	1.1	0.97	154
Kitchen Aids	0	0	85	1.2	0.01	85
Medical Personnel+	52	0.7	213	2.9	0.24	261
"Street Station"+ Attendants	0	0	5	0.1	0.01	5
Cadre*	1,494	21.6	1,058	14.6	1.41	2,552
Retired*	308	4.5	244	3.5	1.26	552
Unemployed	337	4.9	337	4.6	1.00	674
Housekeeping	60	0.9	858	11.8	0.07	918
Others	409	5.9	439	6.0	0.93	848
Unknown+	5	0.1	9	0.1	0.56	14
TOTAL	6,912	100.0	7,263	100.0	0.95	14,175

* Indicates sex ratio > 1.2 (Male excess)

+ sex ratio < 0.8 (Female excess)

Table 1

Estimated Period Prevalence of 30 Selected Chronic Diseases From Clinic Records and House Visits by the Primary Health Care Station of Dung Hwat Men, Beijing,* 1979

Disease or Condition	Males No. in Census N = 6,912		Females No. in Census N = 7,263		Both Sexes N = 14,175		Sex Ratio
	No.	%	No.	%	No.	%	M/F %
1. Epidemic Diseases							
Chronic Hepatitis	100	1.45	54	0.74	154	1.09	1.96•
Others	6	0.09	1	0.01	7	0.05	9.00•
TB of lungs	36	0.52	37	0.51	73	0.51	1.00
TB of other organs	15	0.23	23	0.31	38	0.27	0.74
(All TB)	(51)	(0.75)	(60)	(0.82)	(111)	(0.78)	0.91
2. Circulatory Diseases							
Hypertension	476	6.89	549	7.56	1,025	7.23	0.91
Dis. of Cerebral Vessels	46	0.67	38	0.52	84	0.59	1.29
Coronary artery disease	123	1.78	110	1.51	233	1.64	1.18
Heart Disease	86	1.24	167	2.30	253	1.78	0.54+
Others	60	0.87	81	1.12	141	1.00	0.78
3. Respiratory System							
Chronic bronchitis	159	2.30	214	2.95	373	2.63	0.78
Others	30	0.43	31	0.43	61	0.43	1.00
4. Digestive System							
Ulcer of stomach/ duodenum	49	0.71	22	0.30	71	0.50	2.37•
Cirrhosis of liver	4	0.06	3	0.04	7	0.05	1.50•
Others (mainly dysentery)	118	1.71	98	1.35	216	1.52	1.27
5. Urinary System							
Nephritis	21	0.30	78	1.07	99	0.70	0.28+
Others	9	0.13	10	0.14	19	0.13	0.93
6. Tumors							
Malignancies	5	0.07	15	0.21	20	0.14	0.33+
Benign Tumors	3	0.04	10	0.14	13	0.09	0.29+
(Cancer of liver)	None recorded						
7. Endocrinal & Metabolic							
Diabetes	13	0.19	26	0.36	39	0.28	0.53+
Others	9	0.13	35	0.48	44	0.31	0.27+
8. Surgical Diseases							
Arthritis	253	0.77	189	2.60	242	1.71	0.30+
Others	82	1.19	86	1.18	168	1.19	1.01
9. Psychological Disorders	29	0.41	41	0.56	70	0.49	0.73+
10. Neurological Disorders	36	0.52	87	1.27	123	0.87	0.43+
11. Eye and E.N.T.	40	0.58	68	0.94	108	0.76	0.62
12. Skin Diseases	9	0.13	16	0.22	25	0.18	0.59+
13. Gyn and O.B.	0	0	23	0.32	23	0.16	0.01+
14. Others	31	0.45	51	0.70	82	0.58	0.46+
15. GRAND TOTAL	1,648	23.84'	2,163	29.78'	3,811	26.9 '	0.80

*Pilot study for chronic disease surveillance
Disregarding combined diagnoses
•Male excess
+Female excess

Table 2

Institute of Epidemiology and Microbiology, Chinese Academy of Medical Science

The Institute is located in the rural district of Beijing at a distance of approximately 40 km from the city. The Institute has two major sections which are physically separated, the larger administration and laboratory section which is located in Chang-Ping and the smaller epidemiology section in the City of Beijing.

The Institute has a professional staff of 280, out of a total of 330 employees; more than 50% of them are females. A list of the senior professional staff is attached as Annex 1. The Institute was designed according to Russian models. Its major function is the research and control of the communicable diseases in the PRC. For this reason, it was decided that the laboratories for infectious agents should be located in the country side, far away from the City of Beijing. Construction of the Institute was begun in 1953 and finished in 1955.

In addition to conducting research on communicable diseases, the Institute assists local health departments in investigations of epidemics and serves as a reference laboratory for diagnosis. The senior staff has the rank of professor and is responsible for the training of professionals and technicians.

The Institute is organized into five major departments namely

1) Epidemiology
2) Medical Microbiology
3) Disease Control
4) Arthropod Vectors and Animal Reservoirs
5) Medical Information and Laboratory and Animal Supplies

The major functions of the five departments include the following: Epidemiology: National coordination of epidemiologic research; special studies of respiratory and enteric infections of unknown etiology; prevention and surveillance of imported diseases. The Microbiology Department is concerned with research leading to improvements of the laboratory diagnosis of communicable diseases as needed for disease surveillance. The Department of Disease Control puts priority on studies of brucellosis, leptospirosis, epidemic meningitis, epidemic hemorrhagic fever and on the development of immuno-diagnostic tests. The Department of Arthropod Vectors is charged with the control of mosquitoes, flies, fleas, ticks, and mites. It has also a division of rodent control. The Medical Information Department has been publishing a quarterly bulletin in Chinese since about 20 years; it also compiles weekly epidemiologic records.

The following is a list of the specific studies and projects as explained to the team while visiting the Institute. The Epidemiology Department is carrying out pilot studies on immunization, on case fatality of selected communicable diseases, and on disease reporting involving a population sample of 100,000 persons in the Eastern Health District of Beijing. A more detailed description of the latter is given elsewhere in this report. The Department of Microbiology has a number of divisions for specific disease problems. One

major project is concerned with studies of genetic variations of Shigella flexneri. Research efforts in brucellosis include studies on delayed hypersensitivity, serological diagnosis and development of vaccines. Work on leptospirosis, which seems to be a widespread infection of public health importance in the People's Republic, focuses on the early diagnosis of the infection through serological tests and on the development of an oral vaccine. Another study is devoted to the etiology and pathogenesis of hemorrhagic fevers. In addition to dengue fever there have been a number of disease outbreaks of hemorrhagic fever for which an unequivocal diagnosis of the etiology of the disease could not be made. A special laboratory is concerned with measurements of herd immunity to infections with Neisseria, with the production of potent antitoxins and with studies of the mechanisms of pathogenicity of the different agents responsible for epidemic meningitis. The very active Department of Medical Entomology is engaged in studies of new hormonal insecticides, as well as chemical pesticides. These include Chinese herbs and the Bacillus thuringensis israelensis. Researchers of the Department are studying the ecology of Culex tritaeniorhynchis, a local vector for Japanese-B encephalitis. Another project is concerned with the ecology and control of ticks, namely Hyelomma, Ornithodorus and Dermacentor. Most of the pesticides used in China are now manufactured in Shanghai. There is close cooperation between industry and the entomology laboratories of the Institute of Epidemiology and Microbiology of the Chinese Academy of Medical Sciences. There is a small, but well-kept entomological museum which is used for teaching of laboratory technicians and entomologists in training courses ranging from six to twelve months. At the time of our visit 30 students were enrolled in these training courses. The Division of Rodent Control keeps a master record on the species found in China. There are now 96 different species of rodents of which seven are of major public health importance.

In addition to the laboratory studies there are a number of field research projects in which investigators of the Institute are involved. These projects include large-scale field trials with a polysaccharide vaccine against infections with group A meningococci. Meningococcal infections with group B and C are rare in China. So far, there have been very few anaphylatic reactions to the new vaccine. The epidemiological studies of meningitis have been concerned with reliable estimates of morbidity and mortality of the infection. There appears to be a 8-10 year cycle of disease outbreaks, the last being recorded in 1977. During an epidemic, there are approximately 50 to 100 cases per 100,000 population, with a case fatality of 5%, occurring predominantly in rural areas. March and April are the peak months of incidence of meningitis. Studies are under way to determine the carrier rate of persons with Neisseria in the general population. The disease occurs most frequently in the central part of the People's Republic. About twenty percent of the infections are resistant to the common antibiotics and sulfonamides.

Another field project of the Institute is concerned with leptospirosis. A special central leptospirosis laboratory was established in 1975. Infections with Leptospira sp. are found to be widespread in China, except in the mountainous northwestern part of the country. Leptospirosis is typically most frequent in the rice fields of southern China. There are fourteen

recognized serogroups, including more than 70 serotypes. Two of the major outbreaks in recent years were related to the flooding of rivers. The two major species responsible for epidemics in China are Leptospira icterohemorrhagica and L. pomona. The Institute produces a polyvalent vaccine which has been used in field trials. Preliminary results are not yet available.

The Institute of Epidemiology has no data processing facilities. It is planned that the Department of Epidemiology will acquire a computer facility in the near future.

Studies are under way to measure changes of the immune responses of people treated with certain Chinese herbs and plant products. It was found that the plant Lysimachia christinae Hance suppresses the T-cell response in infections.

The field work of the Institute also include the study of the "normal" intestinal flora in different population groups in the PRC.

E 4

Institute of Epidemiology & Microbiology, Chinese Academy of Medical Sciences

Address: Chang Ping Liu Zi, Box 5, Beijing China

Telegram: 9083

Senior Staff, Fall 1980

Dr. Dong Han-chen, Director

Dr. Gao Shao-yi, Deputy Director (Prof. of Microbiology)

Dr. He Guan-qing, Prof. of Epidemiology

Dr. Liu Bing-yang, Prof. of Microbiology

Dr. Ji Shu-li, Prof. of Zoo-Epidemiology

Dr. Ne Di-kai Associate, Prof. of Microbiology

Dr. Jang Shun-qio, Associate Prof. of Microbiology

Dr. Hu Zhen Associate, Prof. of Epidemiology

Dr. Wang Cheng-xin Associate, Prof. of Rodent Control

Dr. Zhang Shu-yuan Assistant, Research Officer of Entomology

Dr. Du Shau-yuong Assistant, Research Officer for Epidemiology

Dr. Fan Ming-yuan Assistant, Research Officer for Microbiology

Dr. Li Wen-po, Chief of Scientific Research Office

Dr. Fu Shen-hua Deputy Chief of Scientific Research Office

Miss. Zhao Li Interperter

F

Chinese Academy of Military Medical Science

Institute of Microbiology and Epidemiology

Although concerned primarily with research and control of communicable diseases of military importance, the Institute of Microbiology and Epidemiology of the Chinese Academy of Military Medical Science and its civilian counterpart, the Institute of Epidemiology and Microbiology of the Chinese Academy of Medical Science, both fall under the jurisdiction of the Bureau of Sanitation and Anti-epidemic Services of the Ministry of Health. The Institutes of Virology, Parasitic Diseases, Filariasis etc. are other government institutions in the network of national research programs under the administrative umbrella of the Bureau of Anti-epidemic Services of the Ministry of Health of the PHC. In Beijing and in field investigations of disease problems, there is close cooperation between the military and civilian institutes of epidemiology.

Because the Director of the Institute, Dr. Chen Ing-Qing, was away on duty travel, Prof. Jian Yo-tu, the Deputy Director, gave an introduction into the work of the Institute. The Institute was reorganized in 1972 and has now about 15 epidemiologists to carry out investigations of disease outbreaks elsewhere in the PRC.

The Military Academy is organized into six Institutes, e.g.

1) Intelligence
2) Radiobiology
3) Basic Medical Sciences
4) Hygiene and Sanitation (this Institute is located in Tientsien)
5) Microbiology and Epidemiology, and
6) Pharmacology and Toxicology

The focus of interest to the visiting WHO team was the Institute of Microbiology and Epidemiology.

This Institute has five Departments, e.g.

1) Bacteriology
2) Virology
3) Epidemiology
4) Entomology and Pesticides
5) Immunology

Present emphasis of the work of the Institute is on the development of rapid diagnostic field tests for communicable diseases of military importance. These include, in order of priority, hepatitis A, B, non-AB; dengue-fever; Japanese-B encephalitis; botulism; anthrax; Korean-type hemorrhagic fever; North Asian Spotted Fever; melioidosis; arbovirus infections, especially Sindbis; and the purification of staphylococcus enterotoxins A and B for rapid diagnosis.

Although the laboratory facilities were crowded, there were many modern pieces of equipment, including such items as gas-chromatography, Coulter counters, radio-immune assay, immunofluorence microscopy, etc. The Institute

provides formal and tutorial types of training to medical officers in the military services.

The following are statements by staff members and observations made about ongoing research projects of the Institute. Staff members have developed a method for the rapid diagnosis of Jap-B encephalitis antibodies and have studied the geographical distribution of this disease. It was found that most infections occur in the coastal area of the PRC. A field trial with a new vaccine is under way, after it was found that children under the age of 10 years were susceptible to the infection while adults over 20 years already had naturally acquired specific antibodies to Jap-B virus.

In Sinkiang, there have been outbreaks of botulism, types A and B. Anthrax is said to be highly prevalent in sheep in Shangdung Province and in the autonomous region of Mongolia. Hides and animal skins are now being treated with ethylene oxyde for a period of 24 hours. This method is credited with great efficacy and is said to have reduced the incidence of anthrax in man to a very low level.

Members of the Institute demonstrated an ingenius, cheap fluorescence attachment to a normal monocular microscope. The unit is manufactured by the "Ke Yi" Company in Shanghai for an estimated price of only $300 US. Prof. Maou Shou-pay, the Director of the Institute of Parasitic Diseases in Shanghai, kindly provided me with one of his units which is now being tested at the Armed Forces Institute of Pathology in Washington.

A micro-Elisa test is being applied to study the geographic distribution of Korean-type hemorrhagic fever in the PRC. An antigen prepared by Col. Eddy of Fort Dietrich, Maryland is being used in the FA tests and has shown high sensitivity and reactivity in the sera of patients with acute disease. All of the 173 control subjects gave negative test results. The Korean-type hemorrhagic fever is endemic in 17 of the 30 provinces of the PRC.

Many horses on Hainan Island (South China Sea) have been found infected with Pseudomonas pseudomallei, the causative agent of melioiodosis. No case of this disease has yet been found in man. There are considerable cross reactions in the sera of horses, mules and cows between melioiodosis and glander.

A joint discussion session between the staff members of the civilian and military Institutes of Epidemiology and Microbiology of the two Academies was held on a Saturday morning in which many questions were raised by the participants. The most important ones dealt with the following subjects presented in our lectures in Beijing: disease interactions and measurements of the probability of their occurrences; incomplete reporting of a disease, such as measles, and methods of extrapolating these results to the entire population; sickle cell anemia, the sickle trait and its relation to malaria and other genetic aberration of hemoglobins, especially thalassemia; hepatitis A, B and non-AB patterns in children; revaccination needs against measles, polio and BCG; the high prevalence of hepatoma and antigenemia of hepatitis virus in relation to chemicals in water and soil; and the improvement of rapid diagnostic field tests for the most important infectious disease.

The Beijing Tropical Medicine Research Institute, Beijing Friendship Hospital

All research was suspended during the "Cultural Revolution" and the Institute of Tropical Medicine was closed and dismantled. The present laboratories of the Institute are located in the prestigious new Friendship Hospital in Beijing where research and teaching activities were resumed in 1976. The new facilities make use of converted space from a large VIP apartment in the Hospital, including an office previously occupied by a Russian Colonel of the Army Medical Services. Professor Zhong H ui-lan, M.D. is the Director of the Institute and also Professor of Medicine at the Peking Medical College. He has converted all available space to crowded and busy laboratories. Both Professor Zhong and his Deputy, Prof Wang Cheng-I received their post-graduate training in public health in the USA, part of it at The Johns Hopkins Medical Institutions. The discussions were frank and uncovered some interesting disease problems in the PRC. They also revealed the considerable lack of communication and information exchange between different institutions of medical research and care in the PRC, included are those which are located in Beijing itself.

The work of the Institute is concerned with studies of the oriental lung fluke disease (paragonimiasis), the oriental liver fluke disease (clonorchiasis), giardiasis (diarrheal disease caused by the protozoan Giardia lambia), amebiasis, toxoplasmosis, hookworm, shigellosis (diarrheal disease caused by bacilli of the genus Shigella) and leptrospirosis (a disease caused by a large number of spirochaetal organisms of the genus Leptospira, involving animals as the main vertebrate hosts).

There is also interest in the rickettsioses of China, namely scrub-typhus in three of 30 provinces, sporadic cases of murine typhus and occasional outbreaks of epidemic typhus among minority groups in the cold northwestern mountainous areas of China.

It was impossible to obtain reliable data on leprosy. This disease is said to be dealt with by a special Institute of the MOH. Further information was not available. It is thought that leprosy is now a rare disease in China; unfortunately all records about its prevalence and distribution were destroyed during the cultural revolution. Tuberculosis is said to constitute now only a minor public health problem in China, following the large-scale control campaigns against this disease in the 1950's. However, no records are available on a national scale.

There are about three million cases of paragonimiasis. Significant scientific contributions were made in recent years by Chinese investigators, especially in the field of taxomony of the paragonimus species that cause human disease and of the first (snails) and second intermediate hosts (crabs) involved in its complicated life cycle and transmission. The geographic distributions of human lung and liver fluke disease and of the few still occurring cases of kala azar are depicted in Figure 1.

The staff of the Institute mentioned the lack of research on control of the widespread and prevalent intestinal helminths. It is estimated that there are about 200 million (sic.) people infected with hookworm, involving 13 provinces south of the Yangtse River, including about 1%, or 2 million cases with severe hookworm disease. Males are more often affected than females, probably because of their greater exposure to soil infested with hookworm larvae. Seventy to eighty percent of the children in the PRC are said to have ascariasis still today. Tape worms, both Taenia solium (the pig tapeworm) and T. saginata (the cattle tapeworm) are still fairly common parasites in the rural communities.

For filariasis research and control we were referred to the Provincial Research Institute for Filariasis in Tsiening, Shantung Province, where both Brugia malayi and Wucheria bancrofti are still endemic.

The Beijing Institute of Tropical Medicine is in great need of modern equipment, as well as of books and scientific papers. The library of the Institute had to be rebuilt after its destruction during the cultural revolution.

It was pointed out that there are no specialists in experimental or morbid anatomy for communicable diseases, including the tropical diseases. The Medical College and teaching hospital has only a general pathologist. The staff of the Institute considered the training of suitable candidates in pathology as a high priority for fellowship programs of WHO and other international sponsors in science and technology.

Distribution of Paragonimiasis Clonorchiasis and Kala-azar in China

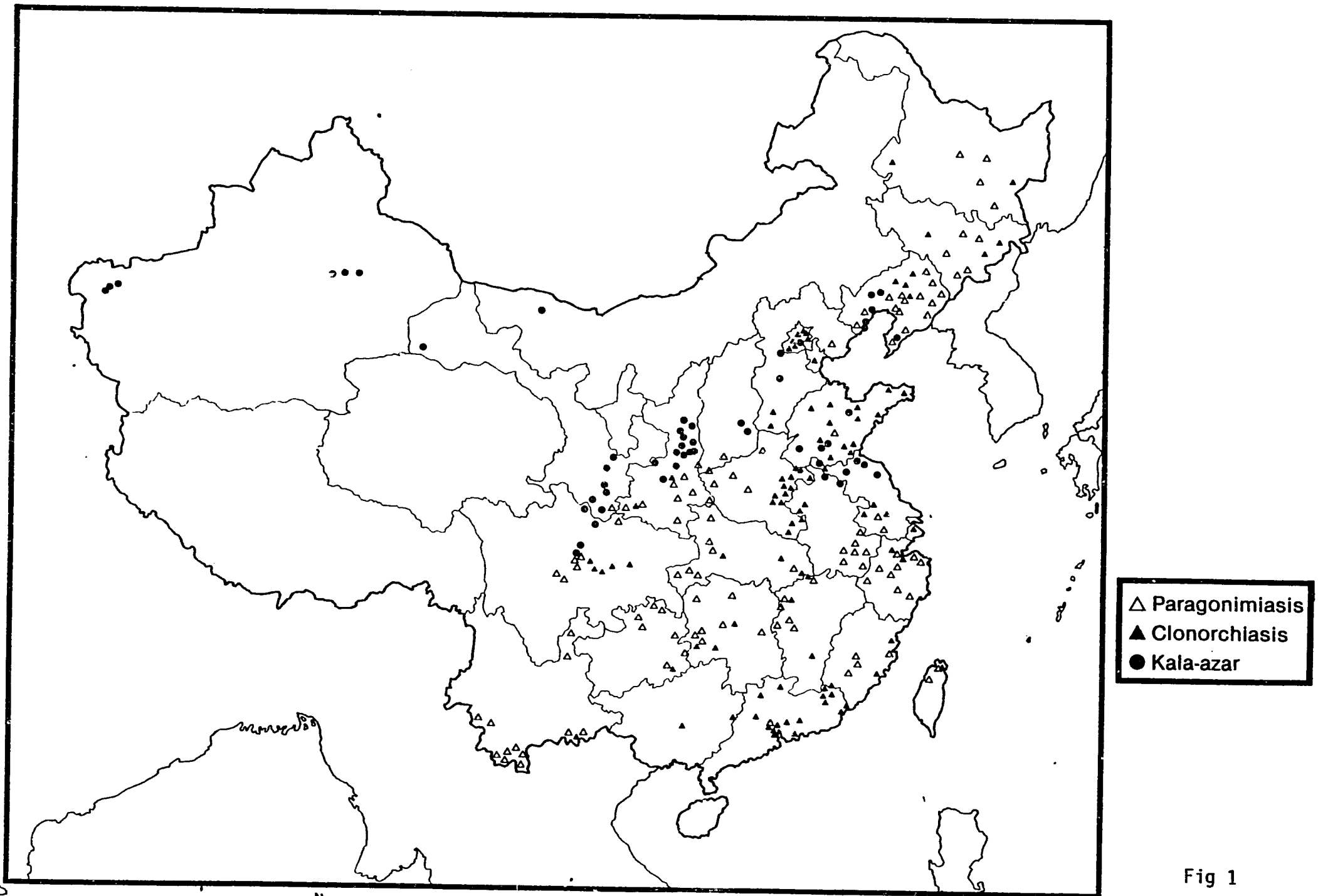


Fig 1

Visit to the Second Infectious Disease Hospital of Beijing (Second Medical College of Beijing)

Dr. Chao-Tung Chang, a graduate of the Johns Hopkins School of Hygiene and Public Health in 1948, is the Superintendent of the hospital. Dr. Lian Zhi-hao, Associate Prof. of Epidemiology and the Vice-Dean of the Public Health Faculty of the Second Medical College guided me on the clinical rounds in the hospital. The hospital has 10 wards with 350 beds together with a large out-patient department. It is supported by two clinical laboratories, the first for hepatitis and the second for general diagnostic work. There are four departments, two for the virus diseases (the first for western-type medicine and the second for traditional Chinese medicine), one for surgery especially for the treatment of hepatomas and liver transplants, and the fourth for research. The latter has five sections, one each for hepatitis A, B and non-AB respectively, the fourth for immunology and the fifth for epidemiology. Hepatitis is by far the most frequent disease seen in the hospital. It is responsible for 75% of all admissions to the infectious disease wards. Of the 1,540 cases of hepatitis admitted since 1979, 31% were of type A, 21% of type B and 41% of non-AB. Virus isolations are made on tissue cultures using fetal organs for cell lines. Distinction between Hb surface and core antigens are made routinely. Antigen detection is done by Elisa and radio-immune assay. Subtyping of hepatitis B is made frequently. The laboratory serves as a national reference institution.

An epidemiological investigation of various types of hepatitis in the general population has been under way since the winter of 1979. This study has involved epidemiologists, clinicians, laboratory scientists, pathologists and community health workers. The routinely performed tests for hepatitis include immunodiffusion, complement (C_3), B-cell sub-population, macrophage migration inhibition test, autoimmune antibodies, cytotocixity, as well as serological tests based on micro-CF, IHA and radioimmune assay. A cross-section of patients with other diagnoses seen during the hospital rounds included dysentary, complicated cases of measles, Japanese-B encephalitis, cerebro-spinal meningitis, salmonellosis and pneumonia.

Because the Infectious Disease Hospital is at the top of the hierarchy of the clinical facilities for the treatment of infectious diseases the admissions do not represent a true sample of the diseases most frequently seen by the general health services. They represent merely a selection of chronic and complicated diseases that have been referred to the hospital from general hospitals and community health centers.

The hospital is responsible for the epidemiological research of hepatitis. As is the case for studies of other diseases in public health importance in the People's Republic the research team is truly multidisciplinary and is composed of physicians, scientists, nurses and community workers, comprising members of the most sophisticated medical institutions as well as health workers of the rural community. There is a special hepatitis committee for Beijing which cooperates with similar organizations in other Provincial health departments of the PRC.

I was most interested in getting more information about the state of the tuberculosis problem in China. However, it has been impossible for me to obtain a clear picture of the total number of cases, the estimated incidence of tuberculosis or of conversion rates in tuberculin tests, the age-specific prevalence of tuberculin reactors, etc. I was told that the tuberculosis program is independent and centrally organized in a specialized control service. During my relatively short stay in Beijing, Shanghai and Canton I did not meet any physician or medical scientist who was familiar with the tuberculosis control program of China.

Shanghai First Medical College

The Shanghai First Medical College was established in 1953 and succeeded the already well known National Shanghai Medical College founded in 1927. At present, the College has four faculties, e.g. Basic Medical Sciences, Medicine, Public Health and Pharmacy. There are six Teaching Hospitals, four of these are general and two are special hospitals. Altogether they have a capacity of 2,700 beds. The College has a total staff of 7,200. The present student enrollment is 3,600 plus 313 research fellows. Since 1975 the College has admitted students from foreign countries.

Associated with the Medical College are two research institutes, namely the Institute of Cardiovascular Diseases and the Institute of Industrial Hygiene. There is also a large nursing school.

The School of Public Health is a part of the Medical College. It has a staff of more than 200 and is organized into the following departments:

1) Epidemiology
2) Environmental Hygiene
3) Industrial Hygiene
4) Medical Statistics
5) Parasitology
6) Sanitation Microbiology
7) Sanitary Chemistry
8) Department of Public Health for Medical Students
9) Department of Child Health
10) Department of Hygiene
11) A Department of Public Health Administration which is still in the planning stage

The former Dean of the School of Public Health and present Chairman of the Department of Epidemiology, Professor Su De-long, a well known epidemiologist, was on duty travel in the UK. The Dean of the Medical College, Prof. Chin Wen-tae, the Director of the School of Public Health, Prof. Yuan Hong-chang, introduced the team to the faculty of the Department of Epidemiology.

J Department of Epidemiology

The Department has a staff of 32 professors and research associates. The major fields of research at the present time are schistosomiasis, virus diseases, diarrheal diseases, liver cancer, and cardiovascular diseases. The Department teaches five different courses, e.g. one to under-graduate students in the School of Medicine, one for full-time students enrolled in the School of Public Health, a post-graduate course for research fellows, a special course on the epidemiology of cancer, and a high-level seminar course for professors of epidemiology in Provincial Medical Schools and Health Departments with emphasis on epidemiological methods.

The studies on schistosomiasis are carried out in the delta area of the Yangtse River in the rural district of Shanghai. One part of the study is devoted to the ecology and control of the intermediate host snail Oncomelania hupensis. These snails are found in China between 32 N and 22 N latitudes. It has been found that the optimal water temperature for the snails is 13 centigrade. A number of ingenius methods for snail control have been developed in cooperation with the Institute of Parasitology. These include the composting of night soil, application of repellants to the skin and development of special stockings impregnated with molluscicides worn by persons at a high risk of exposure to infection with cercariae. It was found that a urine/stool mixture of 1:5, kept for three days during the summer and for 7 days in the winter kills the eggs of Schistosoma japonicum. At present, nine out of the ten suburbs of the Municipality of Shanghai with previously hyperendemic foci of schistosomiasis have consolidated control programs with only a small number of positive cases remaining. The water socks developed by the College of Medicine are impregnated with the niclosamide and protect persons who wear them against the penetration of cercariae for up to 6 months. Rub-on ointment sticks are also used widely. These have a base of wax, with 10% of terpentine and 2% of niclosamide. They were found to protect persons exposed to schistosomiasis in rivers, lakes and canals for a period of 8 hours. At the present time, members of the faculty are assisting the Government of Somalia in their efforts to control schistosomiasis.

In studying the epidemiology of primary liver cancer in China investigators of the Department found an uneven geographical distribution. They are now involved in studies of different communities to test the hypothesis that liver cancer might be associated with the quality of the water used by the people. It was found that the incidence of cancer was higher in communities that used contaminated surface water than in those having protected wells. The relationship between the hepatitis B antigen carrier state and the frequency of hepatomas is also considered in these comprehensive epidemiological studies.

Another investigation of the Department is concerned with epidemic hemorrhagic fever. Recent outbreaks were found to be associated with heavy farm work, especially with exposure to dust generated by threshing. It is believed that the disease is similar to the Korean-type hemorrhagic fever and that the infections are air-borne. The role of rodents, such as Apodemus Agrarius, as animal reservoirs is being investigated.

The faculty of the Department maintains good working relationships with the health services, especially with the anti-epidemic units of the Province. They are involved in the evaluation of immunization coverage for a population of 11 million people. The studies have lead to some preliminary results as follows. During the cultural revolution the incidence of poliomyetitis had risen and therafter declined dramatically. In 1978 immunization coverage of the child population, as determined by neutralization tests, was over 90%. There were two vaccine associated cases of polio, type 2. Measles vaccines are manufactured in Shanghai. A comparison of the locally produced

vaccine with one available from the World Health Organization showed the two to be similar in potency, safety and efficacy. A large scale study of measles vaccines revealed a frequency of primary immunization failures of 5 to 10 percent. In measles outbreak it was found that 80% of the children had not completed their full immunization schedule.

The Department is cooperating also in trials with a new vaccine against hepatitis B. Preliminary investigations involving 13 vaccinees and control persons revealed that 6 of the 7 persons who had received the vaccine had developed Hb antibodies. The hepatitis vaccine was also used as an antigen in skin tests for screening. Results of this investigation are not yet available.

I gave three lectures on the application of epidemiological methods in studies of tropical diseases in developing countries to faculty members and students. This generated considerable discussions which led to a special 2-hour question and answer period. The ensuing discussions were provocative, stimulating and fascinating. Dr. Xu Zhi-yi and Prof. Maou Sho-pia were the moderators of this most interesting seminar.

Institute of Parasitology in Shanghai

The Institute of Parasitology, Chinese Academy of Medical Science, was founded in 1956. It was moved from its previous location at Huandong to Shanghai in 1957. After a 10-year period of scientific inactivity during and immediately after the "cultural revolution" the emphasis was once more directed to scientific achievement and excellence in training. As a result, the Institute was reorganized in 1978 with the establishment of nine new departments:

1) Epidemiology
2) Parasite Biology
3) Vector Biology and Control
4) Diagnosis and Immunology
5) Biochemistry
6) Pharmaceutical Chemistry
7) Pharmacology
8) Department of Clinics
9) Department of Scientific Information

The Director of the Institute is Professor Mao Shu-pai, an internationally renowned scientist who is serving in various Scientific and Expert Committees of the World Health Organization. He is responsible for the scientific work and for the administration of the Institute which presently has a total staff of 294 persons. Of these, 108 are research workers, 108 technicians and 78 supporting personnel.

The scientific program of the Institute has four major goals, namely:

1) To develop effective, economic and safe tools for the control of the major parasitic diseases in the People's Republic of China through laboratory and field research;

2) To organize, coordinate, and evaluate research programs on parasitic diseases in different parts of China and to carry out multidisciplinary research on major problems in order to accelerate disease control;

3) To train teachers and technical staff in all aspects of parasitic diseases;

4) To serve as an international clearinghouse for all studies and published data on parasitic diseases in China and elsewhere and to distribute the information within China and worldwide.

Several members of the Institue are involved in the practical aspects of parasitic disease control. They assist field teams in different parts of China by their active participation in projects, instructions and teaching, as well as troubleshooting.

Dr. Huang Wenzhou is Associate Professor and Director of the Department of Epidemiology of the Institute. His major projects are concered with research and training for the control of schistosomiasis, malaria, filariasis, and kala azar. The following are brief accounts of the major projects in his Department.

Malaria

In 1979 there were still about 2,000,000 cases of malaria in the PRC. Up to 1955 the country could be divided into three major endemic zones, below 25° North latitude, holoendemic; between latitudes 25° and 33° North latitude, mesoendemic; and in the low-lying areas to the north of 33°, hypoendemic. In the southern parts of China in Canton, Yunnan and Fukien there were infections with all forms of malaria, i.e., P. falciparum, P. vivax, P. malariae and P. ovale. The main vector was Anopheles minimus, with An. balabacensis playing an important role in the transmission of malaria in the bushy parts of Hainan Island, (South China Sea) close to the forrested areas.

In the mesoendemic zone there was a combination of P. vivax and P. falciparum. The vectors in this part of China were An. sinensis, An. listeri and, in the hilly regions, An. minimus. Further to the north, in the previously hypoendemic zone, malaria is now virtually eliminated. An. sinensis was the major vector there.

Today, most of the remaining transmission of malaria occurs in the south of the country. On Hainan Island, between 1959 to 1976 the prevalence of parasitemia ranged between 5 to 8%. Since 1977 it was brought down to 0.2%, but rose again in 1978 to 0.5%. An. minimus was reduced after residual house spraying with DDT which started in 1963. In 1969, only three of five hundred locations examined by entomological teams were found positive. However, after 1978 the distribution of An. minimus increased again in the hilly regions.

An. balabacensis is found in many parts of Hainan Island. Vector control through routine application of DDT and BHC to the walls of the houses is still practiced. While there is no evidence of pesticide resistance of the local vectors, recent findings have indicated that there is some degree of chloroquine resistance in falciparum malaria.

Most of the malaria in southern China is transmitted by An. balabacensis. An estimate, combining the findings from parasitological and clinical examinations at peripheral health stations with the results of the indirect hemagglutination test for malaria applied on a large scale, suggests a cumulative prevalence of "recent" infections of about 30%.

In the first half of 1970, two new compounds, tripiperaquine and pyronaridine were synthesized. The former compound has a prophylactic effect while the latter was found effective in the treatment of falciparum malaria, even when the parasite was chloroquine resistant. For this work the Institute was giving the National Science Conference Award in 1978.

Schistosomiasis

Schistosomiasis has received high priority in the public health programs of the People's Republic of China to control notorious pests and diseases. The schistosomiasis control program in the PRC is often cited by international experts as a model of disease control in which success was achieved mainly through use of low-cost, labor intensive methods of snail control. From the information available it appears that published appraisals of the schistosomiasis situation made by visiting scientists from abroad may have been over-optimistic. According to Professor Mao there are still about 2 1/2 to 3 million cases of Schistosoma japonicum infections in China. Their distribution is depicted in Figure 1, which was prepared from a photograph of a map kept in the Institute (by kind permission of Prof. Mao).

Before 1948, schistosomiasis was endemic in 13 provinces and 347 counties. The total number of cases was then estimated at about 100 million. At liberation there were still about 10 million cases of schistosomiasis distributed in 140 counties. Presently, endemic foci of schistosomiasis still exist in the Middle Yangtse River and in the Lake Region as well as in southwest Hunnan and Zetchwan Province.

There are three major types of endemic foci (Figure 2). The first, known as the Shanghai type involves the irrigated areas of the plain and canal region. Here the schistosomiasis control program was especially successful. The methods employed combined the treatment of patients with drugs, molluscicide and, most of all, the suffocation of the intermediate snail host, Oncomelania hupensis, in newly dug ditches. At present, 43.7% of the active schistosomiasis cases are found in the marshes and swampy regions where seasonal flooding of the rivers is frequent; 22.7% occur in the hilly regions where the population density is low, but snail control particularly difficult; 33.6% of the cases are still found in the densely populated plain and canal region where the success of the schistosomiasis project has been most pronounced. At present, mass treatment with new compounds such as praziquantel, amoscanate and a combination of furapromidum and metrifonate is applied together with molluscicide, using fluoroacetate and niclosamide. For this work the Institute received an award from the National Science Conference in 1978.

The Institute has developed a new microtest for the diagnosis of schistosomiasis, using a liver-oval antigen for mass skin tests and the circumoval precipitation test for assessment of cure.

Because of the interest of AID in the development of the new antischistosomal drug amoscanate it was of great interest to inquire whether this drug was still used on the same large scale, as was indicated in a previous communication. Mass treatment with amoscanate was discontinued because of a relatively high frequency of late jaundice complications, following the treatment of schistosomiasis patients with this drug. It appears that the dose of amoscanate given in the previous campaigns was too high. Instead of the recommended single dose of 3.5mg per kilogram with the new formulation much higher doses (7.5 to 15 mg/kg) had been given repeatedly. This observation is in accordance with animal experiments and could account for the high rate of jaundice complications.

For other results of clinical trials, please, refer to the section on the Department of Infectious Diseases, Riu-Jui Hospital, Shanghai, and for other aspects of schistosomiasis control to the section on the School of Public Health, Shanghai First Medical College. Methods of biological Control of snails are listed in the section Vector Biology and Control of this report. Diagnostic improvements to detect infections with S. japonicum are described under the activities of The Department of Diagnosis and Immunology of the Institute of Parasitology.

Filariasis

Endemic filariasis occurs between 18° and 37.5° North latitude. Before the control measures were applied in endemic areas 15 provinces were involved. Endemic infections with W. bancrofti are often found near towns and rivers. Infections with B. malayai occur mainly in hilly regions. Mixed infections of filariasis and malaria are not infrequent. The vectors identified in the tramsmission of filariasis include Culex p. fatigans, Aedes togoi, An. sinensis and An. balabacensis. In the transmission of B. malayai, Mansonia uniformis also plays a significant role. It is estimated that there were 20 million cases of filariasis before the control measures were applied and that there may be now still about 1 million cases, most with low microfilarial densities. However, in none of the recent investigations of the disease have the more sensitive concentration techniques (millipore and nuclepore filter methods) been applied.

Filariasis control in China has combined mass chemotherapy (diethylcarbamazine) of the entire population with residual house spraying of insecticides. These control measures were carried out for three consecutive years and resulted in a dramatic decrease of the microfilarial rate. One of the major endemic foci of B. malayai was found in Zhejiang Province. In that population the present prevalence ratio of patent B. malayai is said to range between 1.2 to 9%. A special Filariasis Institute of the Chinese Academy of Medical Science is located in Shantung Province.

It would be interesting to compare the experiences made with filariasis control in the South Pacific with those of the People's Republic of China. Of special interest would be an assessment of the frequency of relapses and re-infections after mass treatment which have been relatively high in the islands between Tahiti (in the East) and Fidji (in the West) of the South Pacific, including in American Samoa.

Kala Azar

In the early 1950's detailed epidemiological studies of leishmaniasis revealed that there were more than 1/2 million cases of kala azar in China, geographically distributed over an area occupied by 500 counties. In 1958, a mass control campaign was started. After it was found that Phlebotomus sinensis (var. sinkiang), the main vector of L. donovani (the causative agent of kala azar) was endophilic, all houses and compounds in the endemic areas were sprayed with pesticides. Furthermore, all patients with kala azar were treated with a pentavalent antimony drug. As a result, the prevalence and incidence of the disease decreased to a very low level. In 1979, only 105 new cases were detected scattered over the mountainous areas of northwest China.

Skin test surveys with L. donovani antigen in children living in the central plain region gave completely negative results, indicating that the disease had disappeared from this previously endemic area. It was detected that, in the past, dogs were important reservoirs of the causative agent. Today, with the exception of the minority groups in the north and northwest of China where animal husbandry is an important part of the economy, dogs are rarely seen in the People's Republic.

Recently, the Institute of Parasitology has been designated as a WHO Collaborating Center for Schistosomiasis and Leishmaniasis.

Vector Biology and Control

This Department of the Institute is concerned with the development of biological methods of control against malaria and schistosomiasis. Of the five species of Anopheles which are recognized as malaria vectors in China the microorganism Bacillus thuringensis israelensis was found to be effective against An. sinensis. This is the most promising method of biological vector control and is also one of the major research areas of the TDR program of WHO.

A larvae-eating fish of the Gambusia family is being tested in various parts of the People's Republic to control mosquito breeding.

In the control of schistosomiasis a number of new methods are being tested. The biological techniques include the use of the Chinese grass carp which, under suitable ecological conditions, is capable of clearing large areas of the water vegetation essential to the life of the snail Oncomelania hupensic, the intermediate host of S. japonicum. Also, an indigenous plant product similar to the Ethiopian Endod is being tested as a natural molluscicide. Research is also under way on a variety of schistosomicidal compounds including niclosamide, sodium pentachlorophenate and, especially, the relatively cheap chloroacetamide which has only negligible effects on the non-target water fauna.

Furthermore, the Institute is improving snail removal and collection at transmission sites using various types of large, vacuum-cleaner type field aspirators.

A final line of research is devoted to the differenciation of the Oncomelania snails using genetic methods of identification, including isoenzymes and RNA codes.

Department of Diagnosis and Immunology

The work of this Department is concerned with the development of cheap and simple diagnostic methods for schistosomiasis, malaria, and amebiasis. The Department has now developed a method for mass production of a purified egg antigen of S. japonicum. The circumoval precipitation test as well as the Elisa test are being evaluated comparing dried finger blood specimens with fresh serum drawn by venipuncture.

As part of the Chinese Academy of Medical Science and also of the Shanghai College of Medicine, the Institute is training foreign students and is assisting other nations in their efforts to control endemic parasitic diseases. An assistance mission is presently working on schistosomiasis control in Somalia.

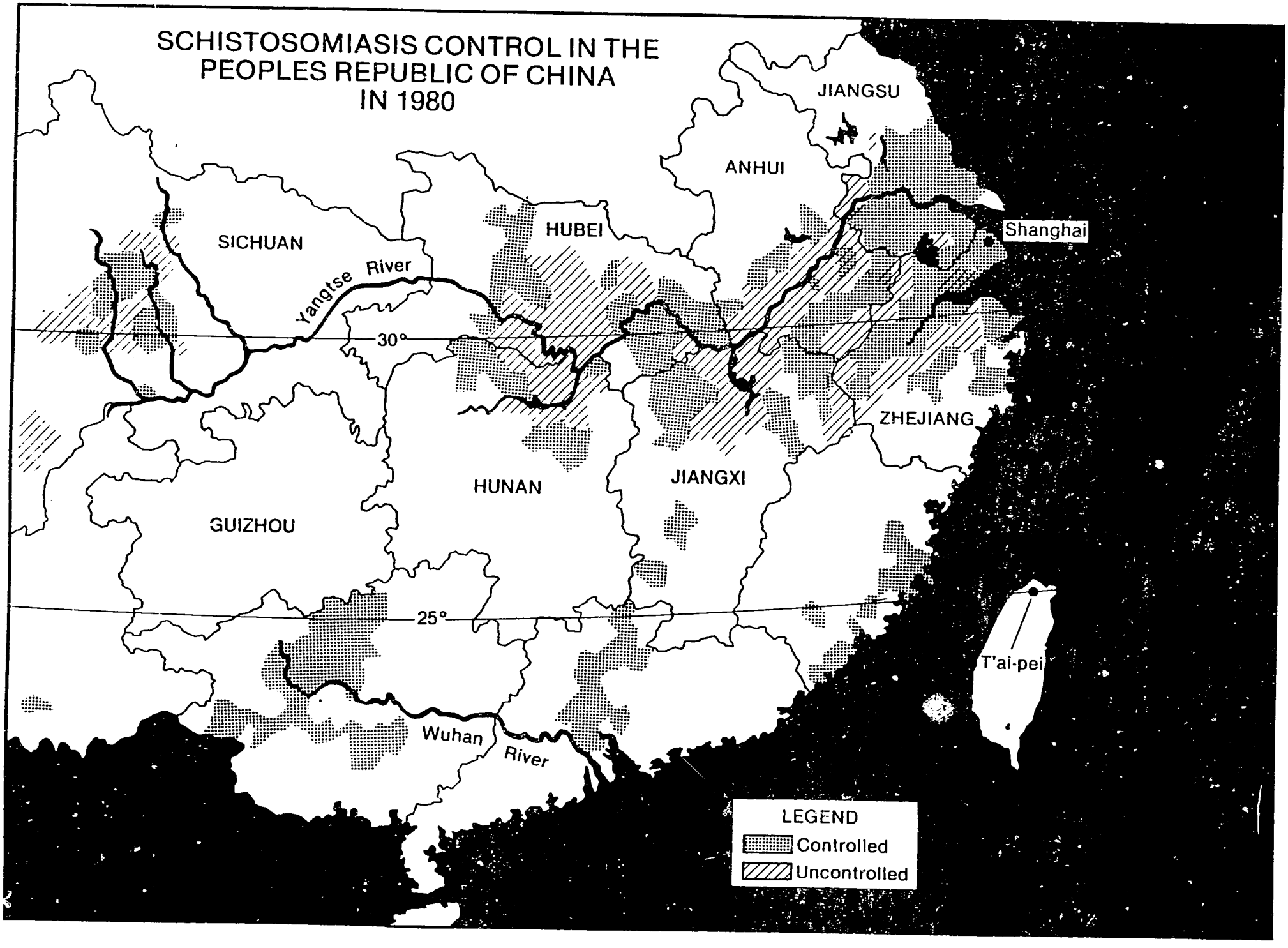

SCHISTOSOMIASIS CONTROL IN THE PEOPLES REPUBLIC OF CHINA IN 1980
JIANGSU
ANHUI
HUBEI
SICHUAN
Yangtse River
Shanghai
30°
ZHEJIANG
HUNAN
JIANGXI
GUIZHOU
25°
T'ai-pei
Wuhan
River
LEGEND
Controlled
Uncontrolled

Fig 1

% Distribution of Cases and Intermediate Snail Hosts by Ecological Areas

Peoples Republic of China 1980

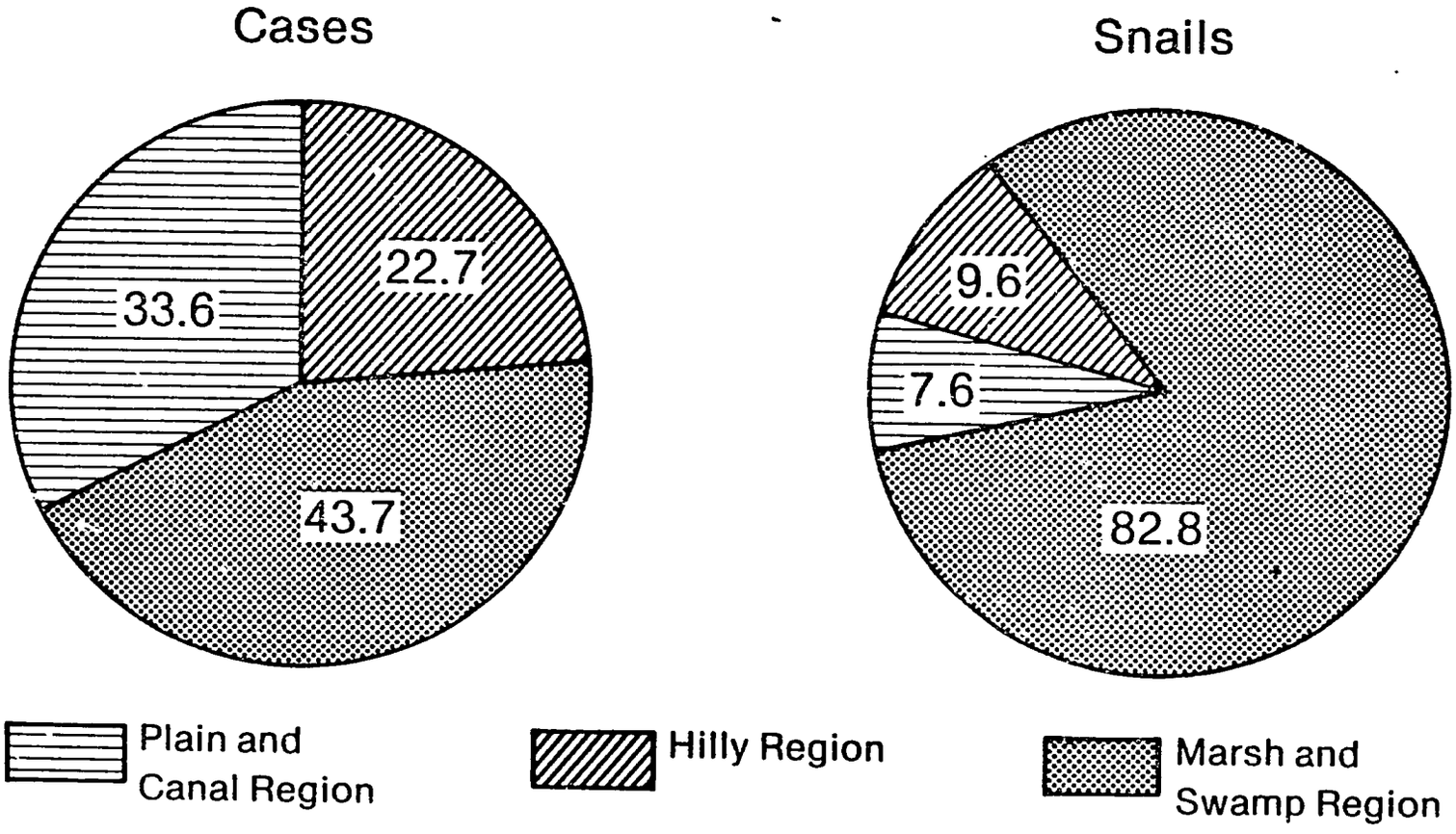


Fig 2

FIG. K 3

"GOD OF PLAGUE": Idol of schistosomiasis previously worshiped in the "Villages of Widows" of the hyperendemic areas of the Yangtse River Valley.

Shanghai City Anti-epidemic Service Center

The Shanghai Anti-epidemic Service Center supervises 10 District Health Centers in the city and 10 County Health Centers in rural Shanghai, for a total population of 11 million people. There are anti-epidemic services in the large industrial complexes, such as steel mills, oil refineries, the railway system, river traffic authority and the shipyards. The Center has 558 staff members of whom 50 work directly in the epidemiological service. Thirty of these are graduates from Public Health Schools of Medical Colleges. In all Districts and County Anti-epidemic Service Centers there are Deputy Directors who supervise a staff of about 100, of whom 20 are epidemiologists. Attached to each of the District Hospitals are 20 public health workers. These serve a population of about 50,000 people. Under this level are the communes which have clinics and some hospital beds for approximately 20,000 people.

The Shanghai City Anti-epidemic Service Center has 10 departments and a supply and maintenance service as follows: 1) Epidemiology; 2) Vector and Rodent Control; 3) Environmental Health; 4) Food Hygiene; 5) School Health; 6) Occupational Health and Industrial Hygiene; 7) Laboratories, (a) virology, (b) bacteriology, (c) entomology, (d) chemistry for food, water and air; 8) Development of Rural Water Supplies; 9) Radiation Safety and 10) Administration.

There is a quarantine service for the international sea traffic which is independent of the Shanghai Center and is controlled by the Port Authority.

In 1959 the Ministry of Health introduced legislation for the national control of 25 communicable diseases (see reporting form). Three of these diseases belong to class 1 and require daily reporting, i.e., cholera, plague and smallpox. The reports are sent to the District and County Health Centers and from there, by courier to the Municipal Center of Shanghai. Suspected and confirmed cases of Japanese B-encephalitis require immediate reports by telephone to the Center. During the past year a cholera outbreak due to V. cholerae El Tor occurred in a small village on the banks of the Wong Po River with a total of 46 cases.

The routine disease reports are checked for quality and completeness at different levels. Hospitals are controlled four times per year. At present, it is estimated from these audits that reporting of communicable diseases is at about 95% in the urban areas but only 80% in the rural counties of Shanghai. Multiple reporting of the same case by different health services is frequent and is looked for and adjusted by the Center. Individual clinicians send their disease report cards directly to the District Centers which, in turn, prepare their reports to the Municipal Center.

While the reporting coverage is generally good we were told that the major problem rests with the quality of the diagnosis. As an example, bacilliary dysentery was cited. This clinical diagnosis was confirmed by only 20 to 30% of bacteriological isolations of shigella. There is also a

need to improve the diagnosis of diarrhea in children. The presently available network of public health laboratories for the 11 million inhabitants of the Shanghai area is insufficient. Another importamt diagnostic problem exists for the differential diagnosis of diseases resembling Japanese B-encephalitis.

On the other hand, there has been great success in the preparation of a registry for cancer. Since 1973 the Cancer Institute of Shanghai has carried out a national surveillance program, including all reported cases of cancer.

The prevention and disease control program in the PRC had started with mass treatment and vaccination campaigns until about 1958, when a new system of compulsive immunization was introduced for all newborn children. The parents of each newborn baby receive an immunization card in the city. In the rural areas there is a registration book kept by the District Health Center. At present, an experimental disease surveillance system is in operation in three counties and three districts of Shanghai.

The City of Shanghai has a central water supply system with tap water. Most rural Centers use wells. There are now more than 1/2 million dug wells in the Shanghai municipal area. All of these are shallow wells. Because of the low laying terrain of Shanghai at the mouth of the Yantgse River the digging of deep wells is prohibited. All houses in the Shanghai metropolitan area are supplied with electricity.

Special Comments:

While there have been no reports of diptheria during the past three years, a few cases of poliomyelitis were seen in children who had received previous immunization. In 1979 there were 14 cases of polio, mostly of type 3, two in the city itself and 14 in the rural areas.

In 1966 all children under the age of 8 years without a history of measles were given measles vaccine. Thereafter, the incidence of this disease has decreased considerably.

In 1965 there was an epidemic of Jap B-encephalitis with an incidence rate of 50 cases per 100,000/year. A vaccine is now being used to prevent outbreaks in populations at high risk. Mass vaccination against Jap B-encephalitis is, however, not compulsory. An epidemiological investigation, backed up by laboratory tests suggested that the epidemic was probably of different etiology and caused by a still unknown agent, probably also an arbo-virus.

Malaria: Most cases of malaria are due to infections with P. vivax. The annual incidence of new infections has ranged between .3 to .6% in the rural areas. There are also imported cases of malaria from the south of the PRC.

Hepatitis: This is the most important communicable disease in the People's Republic. Epidemic peaks of hepatitis, perhaps mainly due to large variations in the incidence of type A disease, show peaks at 6 to 7 year intervals. The reported case fatality rate was 13 per 1,000 hepatitis patients.

Influenza: There are four sampling points in Shanghai which provide daily reports on acute febrile illness to the Center. The reports are based on clinical cases only. So far flu virus types A , B and A , have been isolated in the laboratory of the Center.

Hemorragic Fever of Mixed Etiology has increased five times during the recent years and totals about 200 cases per year. Despite the increase of the disease, its mortality has remained stable since 1967, most likely because of the improved quality of the treatment now available in the Infectious Disease Hospitals.

Typhoid Fever and Shigellosis: Only 20 to 30% of the clinically diagnosed cases are confirmed by laboratory examinations. This reflects a deficiency in the laboratory facilities available to the entire population. While all of the standard methods for the bacteriological and serological identification of salmonellae are available, there are no enrichment media for cultivation and classification of shigella.

Vibrio parahaemolyticus: It was found that 80% of all reported cases of food poisoning in Shanghai are due to the toxins of this agent.

Division of the Census: The reporting of births and deaths is compulsory. In a total population of 11 million inhabitants the crude birth rate in 1979 was 7.5 per 1,000 in the urban areas, as compared with 15.3 per 1,000 in the rural counties. The corresponding birth rates for the first half of 1980 were 7.51 per 1,000 in the urban and 11.2, respectively, for the rural zones. For the same reporting period the crude death rates were 7.7. per 1,000 in the city and 6.5 per 1,000 in rural Shanghai.

Rui-Jin Hospital, Shanghai

This is one of the general hospitals affiliated with the Shanghai Second Medical College. It has a Department of Infectious Diseases with 26 physicians, of whom 21 are clinicians and 5 epidemiologists. The Chairman of the Department is Professor of Medicine and teaches infectious disease and epidemiology in the Medical School. There is also a Division of Clinical Parasitology. The Department has 110 hospital beds which are predominantly occupied by hepatitis patients. Also seen were patients with encephalitis, typhoid fever, and pneumonia.

The Department is one of the few in China where controlled clinical trials with the new antischistosomal drugs have been carried out. A recent trial with praziquantel involved 135 patients of whom 60 had uncomplicated infections, 67 pronounced clinical manifestations and 8 advanced disease. The opitmal dose of praziquantel which yielded high cure rates and relatively few serious side reactions for treating patients with schistosomasis japonica was 15mg/kg t.i.d. given on one day. The results of the treatment have been followed for a period of 6 months. The nature and frequency of the observed side reactions is as follows: 56.6% had vertigo; 21% had tinnitus; 10% complained about headache; 5.9% had nystagmus, 12.5% complained about adominal cramps; 2.9% had palpitations and 0.9 general fatigue. There was a significant rise in the eosinophilic cell counts in 65.8% of the patients; the cure rates were higher than 90%. In another trial, 7,505 cases were treated with amoscanate and there were some severe side reactions. Ten percent of the patients treated with high doses ($>$ 10mg/kg) and with the old formulations developed icterus. One physician told me that he heard that some patients had died after treatment and that others had developed serious complications which were consistent with those of the Stokes-Adams syndrome. Reference is made to a more recent publication by the Sechuan Institute of Parasitic Diseases1/ in which 1,737 patients were given the micro-crystal formulation of amoscanate. Various total dosages from 3 to 8mg/kg of body weight were administered in single and repeated doses. The incidence of jaundice was zero for the 66 cases given 3mg/kg and only 0.5% among the 1,024 cases who had received 4mg/kg. This is the therapeutic range recommended for amoscanate treatment of schistosomiasis by the pharmacologists of the Johns Hopkins University, Baltimore, Maryland.

1/ Clinical analysis of 21 cases of jaundice caused by amoscanate. Chinese Jour. Int. Med., 1980, 19 (2): 132 (In Chinese)

Recommendations

1. Teaching Institutions and Curricula in the PRC: That the World Health Organization attempts to obtain a complete listing of the teaching institutions with programs in epidemiology in the PRC, and that it makes an assessment of the teaching programs, types of institutions, admission requirements for students, diplomas and degrees available for students with different academic backgrounds, and of the disciplines concerned with the teaching of epidemiology. This assessment may require about 6 to 8 weeks of consultation time for a team of at least three experienced epidemiologists to cover all of the accessable provinces of the PRC.

2. International Fellowships for Chinese Epidemiologists: That WHO provides fellowships to Chinese epidemiologists for studies in some of the leading research and teaching institutions in public health in countries inside and outside the Western Pacific Region of WHO.

3. Invitation of Guest Professors and Teachers of Epidemiology: That WPRO and WHO Headquarters support visits by experienced foreign epidemiologists to the PRC to give lectures and seminars in the Departments of Epidemiology of various Medical Colleges on subjects to be determined.

4. Field Experience for Chinese Physicians in Epidemiological Field Studies and Disease Control Programs: That WHO grants fellowships to Chinese epidemiologists to obtain first-hand experiences in epidemiological research, disease surveillance and control programs of national or regional projects at the field and operational levels.

5. Public Health Laboratories: That the Organization assists the Government of the People's Republic of China in the establishment of a network of adequate public health laboratories, as needed for the diagnosis and control of disease of public health importance. This should include the provision of training of laboratory technicians and scientists.

6. Libraries and Medical Journals: That WHO assists the Colleges of Medicine which have Departments of Epidemiology in the rebuilding of their libraries in epidemiology by providing journals and textbooks.

7. Audio-Visual Teaching Aids: That WHO provides the teaching institutions of the PRC with sets of audio-visual teaching aids, slides and movies on selected diseases and on epidemiological methods.

8. International Conference on Epidemiology in China: That WHO considers holding one or more of their international conferences, Scientific Working Groups or Expert Committees on general or special aspects of epidemilogy in the People's Republic of China.

9. Data Processing and Bio-statistics: That WHO advises the Ministry of Health of the PRC on the most recent developments on computer technology as related to the field of public health and that the organization assists the MOH in creating an efficient and economical system of data processing for surveillance and epidemiological research.

CHRONIC DISEASES RECORD

Case Number _____

First, follow-up, referral _____ Date of Visit: _____

Name _____ Sex _____ Age _____ Origin _____

Address _____ Time of residence in Peking _____

Occupation _____ Unit _____ Hospital _____

Date of Illness _____ First Visit _____ Channel: Survey, O.P. _____

Diagnosis in Hospital _____

Treatment method: hospital admission, Western medicine, traditional

medicine, surgery _____

Habit: Smoking, drinking _____

Whether parents have same diseases _____

Situation: recovered, unchanged, improved, needs nurse, death

_____

Living Condition _____ Sanitary Condition _____

Living Condition _____ Investigator _____

Present Clinical Manifestation/Treatment

_____

Date _____ First Visit _____

_____

_____

_____

_____

_____

_____

_____

_____

Form # 01 _____

FAMILY HEALTH RECORD

Address _____ Street _____

Committee _____ Lane _____ # _____

Family No. _____ No. of family members _____

Date of beginning of record _____ Month _____ Day _____

Total number in family: _____

_____

Names _____

Sex: Male, Female _____ Age _____ Birthdate _____

Origine _____ Relationship _____

Marriage Status _____ Working Place _____

Occupation _____ Hospital _____

Chronic disease _____

Period living in Beijing _____

Smoking and drinking _____

Remarks _____

_____

How many members have jobs _____ Living standard _____

Living area _____ Average living space _____

Living quarters facing: East, South, West, North _____

Sanitary condition: bad, average, good _____

Plain building _____

RECORD OF DISEASES

Name	Diseases	Date of illness	(Change within 1 yr)			Remarks
			recovered	unchanged	died	

Annex 4

Total Number
Identification Number

Death Report for Cancer
Shanghai

Name _____ Sex _____ Occupation _____

Head of Household _____

Birthday _____ Age _____ Date of Death _____

Date of illness _____

Cause of Death: Cancer _____ (primary, secondary, unclear)

Other causes _____

Report Source (Use "✓")			
	Family	Death Certificate	Hospital Record
	Investigation	Cancer Report Form	Other

Final treatment place _____ O.P. # _____ Hosp. # _____

Address _____

Translated from the Chinese original, Jan 1981

SHANGHAI INFECTIOUS DISEASES REPORTING FORM

O.P.N. #
I.P.N. #

CASE	DEATH	CORRECT	DISCHARGE

Case No. _____ District No.

Name _____ Sex _____ Age _____ Year _____ Month _____ Parents Names _____

Address (detail) _____ District _____ County _____

Occupation: Worker, farmer, fisherman, cadre, doctor, food service, cook, nurse, retail worker, housework, student (college, middle school, or elementary) kindergarden/nursery children, children at home, others

Name of Coop Unit

Working or Study Place _____ Address _____

Parents Occupation _____ Address _____

Illness from _____ Date _____ Year, first visit _____

Got sick at _____ (place) _____ from _____ transfer to Shanghai,

date _____, admission, transfer, discharge

Condition: Condition when discharged:

not recovered (a) _____ recovered (b) _____ died (c) _____

Sequel/Evaluation cause of death _____

Microbiological findings:

Reporting station, clinic _____ reporter _____

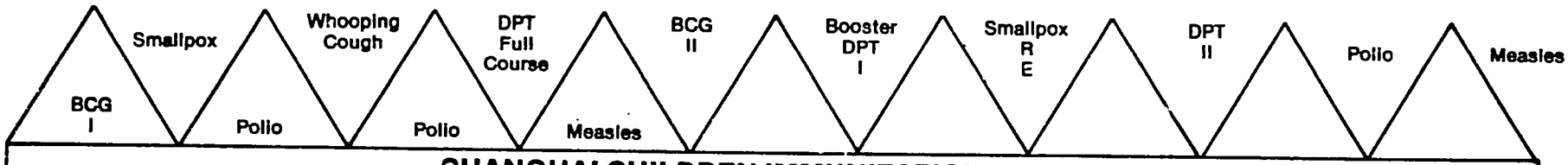
Reporting date _____ Tel. No. _____

Plague
Cholera
Smallpox
Diphtheria
Typhoid fever
Parathphoid fever
a. b. c.
Amebic Dysentery
Measles
Scarlet fever
Schistosomiasis
Malaria
Whooping cough
Anthrax
Epidemic encephalitis B
Epidemic meningitis
Poliomylitis
Typhus
Relapsing fever
Actual Viral hepatitis
Chronic hepatitis (Carrier)
Rabies
Brucellosis
Hookworm disease
Kala-azar
Filariasis
Tsutsugamushi fever
Hemorrhagic fever
Forest encephalitis
Epidemic influenza
Leptospirosis

Diagnostic Source:
Clinic:
Lab:

Correction of diagnosis

Annex 5



SHANGHAI CHILDREN IMMUNIZATION RECORD

Name _____ Sex _____ Birthday _____ Place of birth, delivery hospital _____

Parents names _____ Occupation _____ Unit and address _____

Family Address _____ date of record transfer _____

Moving address _____ date of record transfer _____

Address of nursery _____ date of record transfer _____

Address of changed nursery _____ date of receiving record _____

	First		Vaccinating date	Method	Vaccinator	Vaccination dry/liq.	ID vaccine No.	Medical Unit	Reaction	Date	Result
BCG	Revaccinate	1									
		2									

		Vaccinating date Yr Mo Day	ID Number	Dosage	Medical Service Unit	Vaccinator	Reaction
T.D.P. Vaccination	I II III						
	Booster 1 2						

		Vaccination Date Yr Mo Day	ID # of Vaccine	Medical Service Unit	Vaccinator	Follow-up Date	Follow-up Result	Reaction
Smallpox	A) Primary B) No-take repeat C) Re-vaccination							

Translated from the Chinese original, Jan 1981

Annex 6

COVERAGE OF THREE VACCINATIONS FOR CHILDREN
SAMPLING INVESTIGATION URBAN AND RURAL
SHANGHAI DEC 1978

District/ County	POLIO			MEASLES			DPT		
	Sampling	Vaccination	P%	S	V	P %	S	V	P %
District	5823	5532	95.0	4069	3788	93.1	4213	3984	94.6
County	2275	2268	82.4	4069	3553	87.3	3755	2895	77.1
Total	8577	7800	90.9	8138	7341	90.2	7966	7966	86.4

Translated from Chinese original, Jan 1981

Annex 7