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REPORT

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The first report (5 pages) has the following sub-headings:

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The Health Service and the Standard of Surgery in the Peoples' Republic China.

By

A. K. Schmauß.



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In our first paper we have reported, that during the 10 years since the liberation of China a great number of modern and well equipped general and specialized hospitals have been founded, in connection with the enlargement or foundation of medical schools or in connection with the Public Health Service. We are going to report about several of these hospitals, some of which we have seen as visiting physicians, and the other ones, which we know from short calls only, appeared to be of general interest due to their equipment and task.

a) The Central Hospital for Children of the City of Peking.

In 1955, the City of Peking built a large hospital for children with 650 beds which is situated near the old west gate at the Chang-An-Street, the main east-west link of the capital. Fig. 1 shows a wing of the complex. This hospital has independent large departments with 150-160 beds each, for internal diseases of children, pediatric surgery and infectious diseases. There are also smaller departments for ophthalmology, otolaryngology, diseases of the mouth and a department for traditional medicine with 75 beds. At the latter, physicians of the "western medicine" cooperate with traditional doctors. There is also a ward for immature newborns.

The floors of this hospital have 50 beds as an average. The rooms, with 2-8 beds, have glass walls. The nurse, sitting in the center of the floor, can watch all rooms. Next to the nurses station are 4 small rooms for severely ill or recovering children.

This childrens' hospital has a large outpatient department with all specialties, which is open 24 hours a day. Every day, 1200- 1600 children are examined or treated.

140 physicians (including those of traditional medicine) and 20 chiefs of the departments and of the subspecialties. Nurses and technicians are employed for patient care and research work.

In addition to the treatment of patients, the hospital is responsible for several tasks given by the Public Health Service. It has to take care of the training of pediatricians and pediatric surgeons. In pediatric 4 years are requested, 1 year in general medicine and 3 years in the specialty itself; the training of pediatric surgeons takes 5 years. There are always a number pediatricians from North China for some additional training. They stay between 6 and 12 months.

The hospital operates a school of nursing for the special training of nurses for infants and children.

Another task is the supervision and guidance of all pediatric departments and out-patient departments of the capital, and of newborn and youth welfare. The improvement in the mortality of newborn babies from 117 per thousand in 1949 to 33 per thousand in 1959 is partly a success of this institution.

The hospital also has to study certain problems in the central research plan. It does research work on epidemic meningitis, measles, viral pneumonitis, on the complications of poliomyelitis, toxic dysentery and on the indications and results of therapeutic methods of the traditional medicine in some diseases of childhood. According to the present experiences, there is a belief, that some of the methods of the traditional medicine are of value in the treatment of dyspepsia, bronchial asthma, enuresis, rheumatic diseases, deaf-muteness, meningitis, encephalitis, and pylorospasm.

b) The Fu-Wai -Hospital for Thoracic diseases.

A hospital for thoracic diseases was given to the Academy of Science in 1958. It is situated in the northwest of Peking. Fig. 5 shows a part of the hospital. It has 450 beds, with departments for tuberculosis of the lungs, for unspecific thoracic diseases, for cardiology, where all procedures of modern cardiac surgery are performed. More about it later. The department owns a machine for extracorporeal circulation, which was constructed in China. It has been used during the past year with success in open heart surgery. The department for thoracic surgery has special experiences in the surgical treatment of carcinoma of the esophagus.

A more extensive report will follow later.

FOR CHINA

c) The Hospital for Women of the City of Peking.

Near the northern wall of the old "forbidden city", a new hospital for women with 250 beds was opened in June 1959. 75 beds are available for gynecological and 175 for obstetrical cases. The out-patient department is visited by 350-400 patients daily. Every month, about 500 children are delivered and 200 medium and major operations are performed. This hospital has 8 airconditioned delivery rooms, where only one woman delivers at a time. The staff consists of 52 doctors, 150 nurses and 50 nurses aids. The hospital has to take care of the specialty training in Ob-Gyn and of advanced courses for specialists, and the training of midwives.

All members of the staff have office hours for pregnant women, and prophylactic examinations for Ca of the cervix in factories and peoples' communes. The cancer examinations are done on all women over 35. The ca of the cervix has a very high incidence in North China.

They follow research work on problems of *toxemia of pregnancy*; the weight and length of babies at time of delivery in Peking, the value of methods of the traditional medicine for complications during pregnancy and birth. Questions of "painless delivery" are studied by a special team in cooperation with doctors of the traditional medicine.

d) The Tumor Hospital.

In March 1958, a recently constructed hospital with outpatient department for the treatment of cancer was given to the Academy of Medical Sciences. It is situated in the east of Peking, near the new embassies. It has 4 departments: Surgery, gynecology, radiology and chemotherapy, with 200 beds. Up to the present, 3000 in- and 130 000 outpatients have been treated.

In addition to the most modern equipment for radiotherapy, the hospital owns an isotope laboratory and two cobalt machines, very modern laboratories including one for cytology. The hospital plays an important part in the examination of all women over 35 years for carcinoma of the cervix, which was done in cooperation with all hospitals for women in Peking and by many senior students of medicine. A paper on the tumor problem will give a report of the results of these examinations. At this hospital, following malignant tumors were found to be the most frequent:

1. carcinoma of the cervix,
2. carcinoma of the breast,
3. carcinoma

in addition to these special hospitals, a number of other large hospitals for the treatment of 7 millions inhabitants have been built during the past years. The hospitals have usually 500- 800 beds and all specialties but one specialty is given more importance. In the north of Peking is a center for traumatology with 300 beds, the other departments: general surgery, internal medicine and gynecology consist of only 50 beds. At the Tung-Ren-Hospital, the ENT is the largest with 150 beds. But not only in Peking, but in all other big cities like Nanking, Shanghai, Hantschow, Wuhan and Nanning, we saw new University and general hospitals, which equal those in Peking.

e) NEW MEDICAL SCHOOL IN WUHAN (Hangkau)

We had the chance to be visiting physicians at the new medical school in Wuhan (Hangkau) for a longer period of time. In 1951, the construction of the theoretical institutes, the hospitals buildings and the living quarters for teaching staff and students was started on the site of a former derby field. The already finished buildings occupied an area of 150 000 square meters. At the time of our visit, the brick work of a new hospital for children and a large library building were finished and they are now probably in full operation.

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[redacted] the teaching staff of the former Tung-Chi-University has been appointed to this medical school, so that all professors and lecturers speak fluently German. Their special object is the study of the German medical literature. In the library of the university, one can find nearly all modern German hand- and textbooks, monographies and the most important medical journals.

Some figures relating to this medical school: 1951 the number of students was 450, 1960 there have been 3200 students, 35 % of whom are women. From the old Tung-Chi in Shanghai 798 students graduated between 1907 and 1949, 19 in a year; from the new Tung-Chi, 500 physicians received their degrees in 1959.

The teaching staff consists now of 51 professors, 103 lecturers and 261 assistants. 37 % were women. During the vacations, a part of the staff works at the hospital of the province Hupei, one of the largest and most populated parts of China, to teach new knowledge and methods of their specialties. In the language of our chinese friends it is called " to take the science to the basis". This was the reason that I could not meet one of the leading traumatic surgeons of China, Prof. Tzu Tung Bai, who is translating Böhlers " Technique of Fracture Treatment " into the Chinese. He gave a course for specialists in a hospital, 300 km from Wuhan, without any railway or riverboat connections.

50 % of the students ...

the income of their parents and the grades of the students.

In the past years, a college was founded in connection with the university, according to our "Workers' and Farmers' Faculty". During his time at the medical school, every Wuhan student has to spend two months doing manual labor, the premedical students work on a farm, the senior students serve in the "Hygiene Bewegung". ([redacted] 50X1-HUM

[redacted] there are quite a few new notions in the official language of 50X1-HUM communistic countries, which have never been used in German or other languages. This "Hygiene Bewegung" seems to be a government inspired and directed trial to teach the Chinese peasants the basic principles of hygiene and health care, and perhaps also to give them some medical care.)

The government research plan has several special objects for the medical school: Problems of prophylaxis and treatment of schistosomiasis and their complications, (The Yangtse valley had a very high incidence of schistosomiasis before the liberation), frequency of tumors in the province Hupai, and occupational hygiene and diseases. (Wuhan is one of the "3 stoves" of China, the other ones are Nanking and Tshunking). Old chinese medicine is also studied in Wuhan. Both clinical institutes have 300 beds together for the cooperation of European and old Chinese doctors.

Specially the 1st institute of the University, which was enlarged and modernised from an old, poorly equipped missionary hospital with 200 beds in the center of the town to a present 500 beds with many new spacious buildings, does research work in traditional medicine. One department studies the methods of fracture treatment of the Chinese doctors, another department, the one of the "5 connections" (1.=traditional and european medicine, 2.= red and specialist, 3.=physician and nurse, 4.= work and recreation, 5.= prophylaxis and treatment) studies the complex treatment (combination of methods of both modern and traditional medicine) of certain diseases, and they are convinced that e.g. some infectious diseases, gallbladder and kidney stones and lymph node tuberculosis with fistulas can be cured by conservative measures in a relatively short time.

The Public Health Service and the Standard of Surgery
in the Peoples' Republic China.

by

K.A. Schmauß.

In the former reports we have pointed out that today in China the teaching institutions and the large hospitals " of western medicine" are studying the "traditional chinese medicine". This way of treatment is based on the experiences of several thousand years, which has been developed until the beginning of the last century. At that time the development stopped, probably due to political circumstances, just at a time, when the European medicine advanced fast under the influence of the sciences. This is the reason that the old chinese medicine has no scientific basis. It is based on a mystic-philosophic doctrine, developed during a praxis thousands of years long, which is difficult to be understood by us Europeans.

One of the oldest basic books of the traditional chinese medicine is the Huang-Di-Nei-Ting, which is supposed to be written in the 8th century B.C. The text of this book is thought to have its origin at the time of the government of the Han prince Huang-Di (2698-2599 B.C). It contains articles on hygiene, the anatomy of the human body and the functions of described organs, and on the method of treatment of different diseases. The basic thoughts of this book are followed through the whole medical literature of later centuries, e.g. in the Shan-Han-Za-Ding-Lun (Systematics of internal diseases) by Zhang-Zhong-Jing (142-210), in the Wai-Tai-Mi-Yao by Wang-Tao, published around 752 (= Summary of the former medical literature) and in the books by Li Shi Zhen, 16th century, and Yang Shi Zhou, 17th century. We are going to give a summary of the theories, which are most important for the understanding of the traditional chinese medicine.

a) The doctrine of the traditional chinese medicine on the

the function of the inner organs.

According to reports, cadavers of executed criminals have been opened repeatedly in presence of doctors, painters and officials of the emperors during the past 2000 years, and studies of the anatomy and exact reports and sketches of the findings have been made. Nevertheless, the theories on the human anatomy are not quite correct.

There are two groups of organs known: 1. the solid organs "Zang", which are supposed to have a storing function, and 2. the hollow organs "Fu", which have the function of digestion, resorption, transport and excretion.

The former comprise the heart with the pericard, the liver, spleen, lungs and kidneys, to the second group belong gallbladder, stomach, large and small bowel, bladder and the organ "San Jiao = 3 parts of the body cavity". According to the doctrines of the traditional medicine, the organs "Zhang" are in a relation "inner-outer" with the organs "Fu". For instance liver-gallbladder, kidney-bladder, incomprehensible for us e.g. spleen-stomach, where the spleen is supposed to store the nutriments.

With this organ system "Zhang-Fu" are associated all sensory organs, the body tissues and the emotions. Liver-gallbladder, tendons and ligaments and the emotion anger belong e.g. together.

b) The doctrine of the causes of illness.

In the traditional medicine, the human being is seen in close relation with his surroundings and the social circumstances. This has its expression in the doctrine of the causes of illness. It knows "external causes": These are meteorologic phenomena like "wind, coldness, heat, humidity and dryness" which come at the wrong time or in excess. They can lead to fire in the organism. An "external factor of illness" is the "damaging factor Yi Li", which can be found in the nature. It can lead to epidemics together with unfavourable meteorologic circumstances and a poor public hygiene.

The 7 emotions: a joy, anger, sadness, fear, longing, sorrow and oppression are in excess the "internal causes of illness".

In addition to the internal and external causes, there are still "other causes of illness", to which belong irregular way of living, false nutrition, increased sexuality and bites of poisonous animals, as well as accidents and injuries.

pathways".

Very important for several schools of the Chinese medicine is the doctrine of the "effective points" and the "conducting pathways" (in the German-French literature mostly called "meridian", but the Chinese word Mai is translated best by "conducting Pathways"). It means, that pathologic processes in the can be influenced by some manipulations from exactly located points on the body surface. The doctrine of such "effective points" is according to newer studies several thousand years old, and instruments (needles) from the Chinese bronze age have been found, which serve this purpose. These points are not always in the areas of Head's zones, most of the points, according to the Chinese medicine the most effective ones, are situated on the distal parts of the extremities. Later, when a large number of points were known, they have been summarized in "conducting pathways"). These also run on the surface of the body, but, according to the Chinese doctors, are connected by "deep physicians" with the internal organs Zhang-Fu. The doctrine of the Chinese healing art says, that in these conducting pathways the vitality "Chi" circulates. If one organ, belonging to a certain conducting pathway, diseases, a disturbance of the circulation of the "Chi" originates. Vice versa, a prevention of the circulation of the Chi in the c.p. leads to a pathologic disturbance in the corresponding organ. The circulation of the Chi can be normalized by certain manipulations and by this way the basis for the improvement of pathologic processes can be created. The traditional medicine knows 12 couples of c.p., which are in direct relation to the internal organs, 2 single main conducting pathways and 6 extraordinary ones.

d) The principle Yang-Yin.

An important role plays the doctrine of Yang and Yin in the traditional medicine. It has been taken over from the primitive-materialistic natural philosophy, developed by the school of the philosopher Zou-Yi around 5000 years ago. This means, roughly explained, that in all matter and in all appearances of nature and life, Yang and Yin are present and affect each other. Yang and Yin are in continuous

possible without the other. In nature is e.g. light= Yang, darkness = Yin; fire = Yang, water = Yin; warm = Yang, cold = Yin.

All parts and organs of the human body are related to these two principles. The upper parts of the body are Yang, the lower ones are Yin, at the extremities the outsides are Yang, the insides are Yin. The hollow organs are Yang, the storage organs "Zhang" are Yin. Yang and Yin is present in each part of the living organism. If they are in balance, all physiologic processes are normal and the organism is healthy. If one principle prevails, the other declines and diseases appear.

e) The doctrine of consecutive furtherance and impediment among the 5 elements "Wu Xing".

Very important in the traditional Chinese medicine is the doctrine of the consecutive furtherance and impediment among the 5 elements: Wood, fire, soil, metal and water. The "element" is a philosophic notion, to which certain organs, natural phenomena and vital phenomena are related. Liver, gallbladder, tendons, ligaments, eyes, anger, birth, wind belong e.g. to the "element wood"; heart, small intestines, vessels, tongue, joy, growth belong to "fire".

The elements advance each other in the above named sequence; in the sequence wood-water-fire-metal-wood- goes the suppression.

f) The conception of diseases of the traditional medicine and the methods of diagnostics.

The traditional medicine does not have a conception of disease in the sense of the European medicine, i.e. it has no organ diagnosis like gastric ulcer, but only syndroms; the 8 main syndromes are:

1. Yang and Yin, to which the other syndroms are subordinated.
2. Biao and Li (= outer and inner).
3. Chan and Che (= fever-coldness).
4. Sue and Chi (= lack and abundance).

The main syndromes can occur together, e.g. inner fever + Yang-lack; Yin + abundance, etc.

The 4 main methods of examination of the Chinese medicine consist in:

1. Looking at the patient,
2. Hearing and smelling.

3. Asking the patient,
4. Touching and judging the pulse.

Under "looking at the patient" they understand a thorough inspection of the face, posture, watching of the psychic attitude and first of all an exact examination of the tongue.

The "hearing refers only to those symptoms one can recognise without physical examination (auscultation, percussion) like coughing, rattling, borborygmi etc. The smelling consists in judgment of the odor of the body and the excrements.

The greatest importance has the judgment of the pulse, which is felt at each forearm at 3 different points. The Chinese physicians know differences between 8 kinds of pulsations, and it was surprising for us, that several traditional doctors, whom we asked to palpate the pulse, came independently to the same conclusion.

At least, we want to mention the Chinese pharmacology, which has been thoroughly studied by Li Shi Zhen in the 16th century. His books were translated into nearly all European languages during the 17th and 18th century. They are still the basic textbooks for the training of the pharmacist in the traditional medicine. The traditional medicine has a great number of drugs. In addition to probably very dubious drugs like pulverized stag antlers as roborants, or flour out of tiger bones for the treatment of rheumatic diseases, they have many certainly effective drugs which could be used after an exact test in the pharmaceuticals of the "western medicine". It may be mentioned, that the Chinese doctors have treated the signs of hypertension, which are known for centuries, with rauwolfia drugs, and that their pharmacology knows 4 different kinds of rauwolfia plants.

The traditional medicine is to a certain degree specialised. Some physicians do their main work in the pharmacotherapeutics of internal diseases.

Amongst the "surgeons" are specialists for the treatment of fractures and luxations. Their principles of treatment ^{of these} those, which have been propagated by Lucas Champoupière during the last century in Europe: no immobilisation of adjacent joints, early motions and early use. Drugs, favorable to the healing of fractures, are important in addition to the Chinese massage.

The second large realm for surgeons is the "proctology". Hemorrhoids, anal fissures, and fistulas are their domain.

The anal fistulas are treated exclusively by ligation with a thread a method which has been described in Europe first by Hippocrates

The results are excellent, and one hardly sees ~~patients~~ as we could see in Peking, Nanking, and Shanghai.

Much surgical work has not been done by the "surgeons" of traditional medicine during the last centuries. The maximal operations were the castrations of young men, which were employed as eunuchs at the emperor's court and in the palace of the four main princes. This operation was reserved for the surgeons to the court. It is the theme of a famous picture in the emperor's palace. It shows young eunuchs after the castration, who make an extremely miserable impression, so that one can suppose, that the operation was not entirely painless.

This underdevelopment of th surgery is difficult to explain, as it was probably very flourishing in the first centuries A.D. The school of the surgeon Hua Tuo has performed intraabdominal operation and was able to do bowel resection and anastomoses at that time. According to the chinese medicine, Hua Tuo was the first one to use narcotics for the relieve of pain.

Other specialties in the traditimal medicine are "pediatrics", "gynecology" (but not obstetrics) and the specialties for diseases of the eyes and nose and throat.

An important part of the traditional medicine is the acupuncture, which is used only by specialists. Its theoretical basis is the above outlined doctrine of the effective points and conducting pathways. The principle of treatment is the introduction of thin steel needles into the "effective points" of the present " syndromes". For several "syndromes", specially cold syndromes, cones of pulverised leaves of Artemesis vulgaris are burned on these points until the patient has the sensation of warmth.

This doctrine is also the basis for the Chinese massage doctors, who are also considered specialists of the traditional medicine.

Another specialty of the traditional medicine is the "Chi Gung", a method of treatment, which combines the complete relaxation of the body with gymnastics, which are developed from old defense gymnastics. (Tai Di Juan). The exercises for relaxation recall much the autogenic training. They believe to get good results with this method in the treatment of vegetative disturbances.

This traditional medicine has found an variable judgment during the past decades. After the intruding of the scientific medicine, it was more and more refused officially and during the Kuo Min Tang, a

communistic party. Mao Tse Tung has suggested a cooperation of traditional and western medicine on the meeting in Yennan in 1944, where the outline was set on questions of culture, education and related fields.

According to the report by Dr. O-Yong-Jing, secretary of state in the Ministry of Public Health, there are about 500 000 doctors practicing in China, one on every 1400 inhabitants. According to the motto: "The European medicine is good, the Chinese traditional medicine is good, but the cooperation of both is better", the traditional doctors have been sponsored systematically after the victory of the liberation army and are now part of the Public Health Service.

The training of the traditional physicians was done before exclusively by an apprenticeship. An academy in Peking and institutes for traditional medicine in 20 province capitals have been founded during the past years. They have to train doctors and pharmacists of the traditional medicine within 6 years, to take care of the advanced training of the traditional doctors and, in special courses lasting from 1 to 2 1/2 years, to give an introduction into the theory and praxis of traditional medicine to physicians of the western medicine.

The teaching staff of these academies consists of representatives of western medicine as well as of the traditional medicine. The academy in Peking has 29 professorships, 15 of which are for traditional medicine, 14 for the European one. The chairs for traditional medicine have the following distribution at the academy of Peking:

4 chairs for the history of the traditional medicine and its main literature, the others: Chinese prescription, diagnostics, theories of famous schools of medicine, internal medicine, surgery, pediatrics, gynecology, acupuncture, eye and throat diseases, massage, old medical languages.

At all medical schools, chairs and own institutes for traditional medicine have been erected and the students have lessons on the theories and praxis of the old Chinese art of healing in their premedical and medical curriculum.

Alltogether, in China are available 10 000 beds only for the traditional medicine, and 5000 students attend the academies and institutes for traditional medicine. In addition, the old way of training by an apprenticeship with well known traditional doctors is

continued. 80 000 of such apprentices are registered with the Ministry for Public Health. There is no final state board examination, the teacher is fully responsible for his students.

The special courses for physicians of western medicine have been attended by 2000 persons during the last years, including many university teachers. They have to direct the research in combined methods of traditional and western medicine.

The goal of the Ministry for Public Health of the Peoples' Republic China, which sponsors the old Chinese healing art, is a critical evaluation of their methods and praxis, the application of the valuable means of this healing art, which rests mostly on experiences, in order to get an synthesis between traditional and modern medicine.

The traditional medicine with its 250 000 cadres is irreplaceable for the huge tasks of the health service in China and many of the successes of the past 10 years are due to the work of these doctors.

Many leading physicians and research workers, which received their training in Europe or USA, have us frequently reassured, that they expect the western medicine to get many valuable ideas for basic research and therapy from the traditional Chinese medicine.

Several of their drugs are known by us too, e.g. the "Ging-Sen" root, which was propagated much by the pharmaceutical industry and sold for a high price as a roborance. During the last years appeared in the medical literature, in the press, in radio and TV many reports, praising the acupuncture, one of the most important ^{therapeutic} methods of the Chinese medicine, which has been known in Europe since the 18th century (Ten Rhyne and Kaempfer met it in East Asia and introduced it in Europe) as an ideal method of treatment for the most differing diseases. We have seen undoubtedly results of this method in China, while we worked there. But ~~that~~ we suggest the utmost reservation in the judgment of its value, regarding the results of the placebo therapy.

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The Public Health Service and the standard of surgery, in the Peoples' Republic China.

by

A.K. Schmauß.

During our long stay as visiting physicians at the hospitals in Peking and Wuhan, and during short visits to surgical departments in Peking, Nanking, Shanghai and Hatshow, we had the opportunity to learn something about the standard and the present problems of surgery in China, from discussions with leading surgeons of the Peoples' Republic China, like Wu Ying Kai, president of the Chinese Society of Surgery, Shen Ke Fe, Director of the 1st Medical Faculty in Shanghai, and Tjiu Fa Dsu, president of the Surgical Society of the Province Hupei.

We mentioned in our report on the traditional medicine, that surgery has been a specialty for centuries. The first known textbooks on surgical diseases and their treatment date back to the Chan dynasty (1134-770 B.C.), as well as the first specialists for surgery. We mentioned also the golden age of surgery of the Chinese healing art during the Han period, especially under Hua Tuo, who introduced the narcosis with the drug Ma Fu Tang, and performed bowel resections with anastomosis.

The history of the surgery of the "western medicine" in China is young. It begins around the end of the last century, and was performed by foreign physicians in the first third of this century, who worked in teaching institutions or in missionary hospitals. Operations like gastric resections, operations on the gall ducts, nephrectomies etc. have been performed only in a few hospitals in the largest cities before the victory of the revolution. In the 10 years since the liberation, surgery did a "great leap forward" too/and the work and performance equal those in westeuropean hospitals throughout.

[redacted] numerous new hospitals have been founded during the last years, with quite modern operating wings,

consisting of 5-8 airconditioned operating rooms for about 250-350 beds. In all new hospitals, highest importance was placed on a complete asepsis in the operating wing, which could be entered by doctor, aids and patient only through a lock ~~XXXXXXXX~~ and after changing all clothes.

Surprising for us was the far advanced specialisation of surgery in China at teaching and research institutions and at the large city hospitals. Each university hospital has independent departments for anesthesiology, general surgery, traumatology, orthopedics, urology, thoracic surgery, cardiovascular surgery, pediatric surgery, plastic surgery and neurosurgery. This specialisation began after the liberation and was considered necessary and sponsored by the older generation of surgeons.

The second surprise was the sponsoring of the surgical assistants. We have seen relatively young residents performing resections for Cancer of the esophagus, portocaval anastomoses, and heart surgery, frequently with the assistance of their teachers, who consider it their main responsibility, not to operate everything themselves, but to train efficient, technically gifted assistants in every respect. As we learned later, this has not always been so. In China too, many older colleagues believed a few years ago, that only they themselves could perform the most difficult operations. In the year 1953/54, the teachers and the rising generation had discussions, after which the former realized, ^{that} their opinion was false and obstructive to the development of surgery. We didn't see a military hierarchy and the absolute authority of the chief in China, as it is supposedly in some German hospitals. We have frequently seen, how the youngest residents said their opinion freely, and discussions were never closed with the words "The chief is always right".

The anesthesiology is completely independent. Modern machines for endotracheal anesthesia are available at all hospitals; they are being constructed in good quality in China now. Many hospitals have good experiences with operations in hypothermia and hypertension. They believe, that the body temperature should not be lowered under 28 degree and they consider a ~~temp~~ temperature between 29 and 31 degree best. Systolic blood pressure values between 80 and 90 mm Hg are considered to be without danger even for long operations during controlled hypotension. In addition to open heart surgery, hypothermia is used much for the critically ill patient. Some anesthesi

departments had good experiences with severest hypotension / 80 mm Hg of blood

surface), severe toxic dysentery and septicemia and toxemia.

Local anesthesia, epidural and lumbar anesthesia are performed frequently at many hospitals. In Peking, we have seen radical breast operations done in prolonged peridural anesthesia. Shieh Yung, the head of the anesthesia department of the university of Peking told us, that he prefers it to the endotracheal and inhalation anesthesia during surgery for breast cancer, for years.

Abdominal surgery.

The surgical treatment of the chronic gastric and duodenal ulcer and of its complications has the first place in the abdominal surgery. Tsui-Chih-Yi and colleagues reported recently on the present stand of ulcer surgery, reviewing 65 recent Chinese papers. The uncomplicated chronic ulcer is treated now by a 2/3 resection, gastroenterostomy and vagotomy are generally not used. Most frequently a Billroth II is performed, and it is much discussed, whether a total or partial anastomosis, or a retro- or antecolic loop should be done. In recent times, more people are preferring the resection according to Billroth I for gastric ulcers.

In presence of duodenal ulcers, which are difficult to resect, it is warned to ^{perform} the exclusion operation and the Nissen procedure is preferred. After the exclusion operation (Bancroft-Plenk) Chien had two fatal hemorrhages from the not resected ulcer among nine patients. (We have had equal unfavorable experiences in Vietnam with this operation.) If a good closure of the duodenal stump is impossible, a catheter duodenostomy is performed, as we have recommended in Vietnam.

The mortality is low, considering the difficult circumstances. It was 2.14 % of 1682 resections, including emergency operations for perforation and hemorrhage; excluding the emergency operations, it was between 0.47 and 1.8 %, about the results of leading European and American hospitals.

The late results of the resection for ulcers are according to the reports of follow-up examinations very good. About 90 % of the patients were without complaints and were able to work in their old job, about 84 % had gained weight or did not lose weight.

In presence of a perforation, a primary resection is preferred

with suction according to Gordon-Taylor. The latter is considered only then to be permitted, when the condition of the patient is so poor, that even the simple closure is too dangerous or if the patient or his relatives refuse surgery. Follow-up examinations of 390 patients with simple closure of a perforated ulcer showed, that 43.08 % had symptoms again, while of 295 patients with primary resections, only 2.38 % had complaints. (7 Patients.) The mortality of the primary resection is low, Tsui had 538 resection with 14 postoperative deaths = 2.6 %.

In presence of hemorrhage due to an ulcer, surgical invention is more and more preferred to conservative treatment. The emergency X-ray examination (on the value of which we have reported together with Co from Vietnam) is preferred to the esophagoscopy and to the time consuming liver function tests, in order to make the diagnosis of bleeding ulcer and to exclude other causes of GI bleeding, especially esophageal varices.

Treatment of the shock and blood transfusions are performed in cooperation with the internist, and an immediate resection is indicated in all patients over 45 years, in younger patients with several hemorrhages during a short period of time, in patients where the bleeding does not stop shortly after blood transfusions, in all patients with pyloric stenosis, and finally in patients with a long history of ulcers. The mortality after resection for bleeding ulcers was 8.75 % of 240 cases, and is lower than the mortality after conservative treatment.

Postoperative complications, which need special consideration, are bleeding from the line of anastomosis. The careful ligation of all submucosal vessels is considered necessary for their prevention. The insufficiency of the duodenal stump was quite frequent in the first years after the liberation, when the general condition of the patients was poor. 35 = 1.47 % stump insufficiencies occurred in 2094 resections. Immediate relaparotomy with drainage and suction in the postoperative period, a careful fluid and electrolyte therapy, in severe cases a jejunal fistula for alimentation are recommended.

The jejunal ulcer is very rare after the typical resection, as we have seen in Vietnam too. But a characteristic dumping syndrom after resections occurs occasionally.

Diseases of Liver and Gall ducts.

Cholelithiasis and choledocholithiasis are frequent in China, like in Vietnam, a primary occurrence of the stones in gall ducts, even in the intrahepatic ducts, is not rare. The cause is frequently a former choledochal ascariasis. Wang from the hospital in Tsingtao has examined the removed gallstones of 84 patients. He found in the stones of 11 patients with isolated gallbladder stones only in one stone fragments of of ascaris as an nucleus, while he could show in the stones from 51 patients from 73 with choledocholithiasis eggs or fragments of ascaris as nucleus.

The choledocho-duodenostomy is generally not used during operation on the common duct, and drainage according to Kehr or Voelker is preferred.

We have described the choledochal ascariasis as an entity in our report from Vietnam. Like we have recommended in Vietnam, indicated in this very acute illness the Chinese surgeons considered until recently an immediate operation with choledochotomy and extraction of the invaded worms. Now the conservative treatment is preferred: Oxygen insufflation into the duodenum, drugs of the traditional medicine and use of the acupuncture. Wang in Tsingtao has had good experiences and points to the special advantage of the rare occurrence of cholangitis after this treatment. The director of the surgical department of the Children's Hospital in Peking reports now that from more than 300 children admitted with a choledochal ascariasis, more than 99 % have been cured by the above outlined treatment.

Portal hypertension is not rare in China, it is especially frequent in the Jang-Tse valley and in the southern provinces of the country, caused by the schistosomiasis. Shunt operations have been performed during the past years with a low mortality and satisfactory results. According to a statistic of the Academy of Medical Sciences, the mortality is 4.8 % of 650 spleno-renal and portocaval shunts.

Special experiences in the field of surgical treatment of portal hypertension has the Surgical University Hospital in Wuhan, where we could stay for a longer period of time as visiting physicians. The portocaval shunt is performed there, according to the proposal by Tjiu, by a side to side anastomosis with transplantation between portal and caval veins of a piece from the splenic vein, with less postoperative complications than after the end to side anastomosis. Since 1958, the

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hospital had no mortality in more than 100 shunts.

According to a statistic of the larger pathologic institutes of China, the hepatoma is the most frequent cause of death due to cancer. In recent time, several hospitals have studied thoroughly the problems of extensive liver resections for hepatoma. The P.O. mortality was 17.3 % of 75 liver resections, performed during the past two years at nine hospitals. Hepatic coma and postoperative liver insufficiency was the main cause of death. The late results of the resection are still rather discouraging, nearly all patients died within one year due to recurrency.

Another indication for partial liver resection are the primary intrahepatic cholelithiasis and large liver abscesses, which are located in one lobe.

Acute inflammatory diseases of the pancreas are not to rare. The conservative treatment of acute pancreatitis, introduced by Katsch, Nordmann and others, is generally used in China. In the last time, more and more the opinion is expressed to perform early surgical interventions, if the conservative treatment does not show improvement soon. They consider in such cases a laparotomy indicated with suction of the exudate, drainage of the right upper abdomen to dorsolateral and the revision of the common duct.

The treatment of appendicitis plays an important role in the emergency surgery. Old reports, according to which the appendicitis is supposed to be very rare in China, are disproved by the experiences of the medical centers. The acute appendicitis is being treated more and more conservatively with methods of the traditional Chinese medicine, even by the surgeons at the teaching institutions of the "western medicine" in complete surgical surroundings. The immediate results are good, but the recurrency within within the first year is around 15 % and for this reason alone the operation appears us to be better.

Invagination, ascariasis, and volvulus in addition to incarcerated hernias are frequent causes of acute mechanical intestinal obstructions. Of 7355 cases, collected by the academy, 18.4 % were caused by an invagination, 10.2 % by an volvulus and 5.1 % by ascariasis. The congenital anomalies of the ano-rectal region with 3.6 % of the cases with mechanical obstruction (= 271 patients) are apparently more frequent as in our country. The percentage of cases with obstruction due to tumors is with 20.7% low.

Malignant tumors of the colon and rectum seem to be rarer in China

distribution of malignant tumors. Interesting are the studies by Wu Tsai Tung on the relation between schistosomiasis and carcinoma of the colon. He found of 1138 cases of carcinoma of the colon 129 (= 10.8 %) combined with a schistosomiasis. The mean age of Patients with combined Ca of the colon was 37.59 years, and 44.04 in patients with carcinoma of the colon without schistosomiasis. The relation men: women was in the former group 4:1, in the latter 2:1. The cancer in the first group occurred at the same location as the schistosomiasis. Significant differences have been found morphologically and it is probable, that the combined occurrence is not incidentally, but that in the first group the carcinoma developed on the chronic inflammation caused by the schistosomiasis.

The proctologic diseases : hemorrhoids and anal fistulas, are a domain of the traditional medicine, the methods of which are used nowadays also by the surgeons of the "western medicine" for these illnesses. The traditional drug Ku Ji San is used for the treatment of hemorrhoids, and it is either powdered on prolapsing hemorrhoids or in form of thin sticks introduced into the hemorrhoidal nodules. Within a few days, a dry gangrene results and the nodule sloughs off.

For the treatment of anal fistulas, the ligature method is very useful. If several openings occur, operation and ligature method are performed together.

Thoracic Surgery.

The most important problem of thoracic surgery is the treatment of pulmonary tuberculosis, which has drawn much attention during the last years. Considering the especially severe cases, the operative mortality is low for pneumonectomies, lobectomies, and segmental resections for tuberculosis at the large centers for thoracic surgery.

The Fu-Wai-Hospital in Peking performed such operations between 1956 and 1958 with a mortality of 0.77 % and the hospital of the first Faculty of Medicine in Shanghai reported 1174 pulmonary resections due to tuberculosis with a mortality of 2.1 %. The segmental resections have a mortality of 0.3 %.

The surgical treatment of bronchiectasis has with 1.4 % a low postoperative mortality after pulmonary resections.

The bronchial carcinoma seems to be rare in China. Only a few cases have been observed in the large cities, especially in Shanghai.

Carcinoma of the esophagus.

In the provinces of Northchina, the carcinoma of the esophagus is the commonest of all malignant tumors. Several of our colleagues have a large experience in the surgery carcinoma of the esophagus and can show results, which are better than those of leading American surgeons. According to the report of the Chinese Academy of Medical Sciences, 3531 patients with a carcinoma of the esophagus have been admitted to hospitals in 12 cities in North China, on 2785, a thoracotomy was performed, in 1650 of which a primary resection was possible, so that the resection was performed in 39.7 %. The average mortality during the past 10 years was 10 % of 1562 resections of the esophagus. The hospital of Professor Wu Ying kai in Peking has especially large experiences in the treatment of the carcinoma of the esophagus. At his hospital, the postoperative mortality could be lowered to less than 3% in more than 300 resections, during the last 1 1/2 years, due to an refinement in surgical techniques and the improvement of pre- and post operative treatment. At his hospital, a preoperative irradiation with the cobalt machine is performed now generally, the patients receive 3000 r. in 7 days, and not later than 8 days after the end of the irradiation, the operation is performed. The technique for carcinoma in the middle and lower third of the esophagus is the intrathoracic removal of the esophagus, followed by an esophagagastrostomy high in ^{the} apex of the pleura. The operation through an leftsided thoracotomy is preferred. The chances for survival of the patients operated at this hospital are remarkable. They are for all resected cases:

- 1 year = 79.1%
- 2 years = 34.8 %
- 3 years = 24.2%

For patients without metastases in regional lymph ducts the time survival is:

- 1 year = 92.3 %
- 2 years = 55.6 %
- 3 years = 51.8 %

These figures prove, that our sometimes shown pessimistic judgment of the chances for cure of a cancer of the esophagus are not justified.

Cardiac Surgery.

According to a report by Wu Ying Kai, the first mitral commissurotomy was performed in China in 1954; today, the operation is performed in 60 departments for cardiac surgery. At the end of 1959, a report on 2735 operations on mitral stenosis was given. The surgical mortality was 2.1 %. The late results of 755 cases were satisfactory with 84 %.

Open heart surgery in a bloodless field with hypothermia have been performed since 1957 in Peking, Shanghai and 13 other heart centers in province universities. In 239 cases the total mortality was 8.03 %; 98 of which have been pulmonic stenosis (mortality 2.5 %), 89 atrial septum defects (5.62 %), 31 ventricular septum defects (12.93 %).

In 1956, several medical centers in China started experimental studies on extracorporeal circulation. Since the end of 1958 both cardiac centers in Peking and Shanghai operate with a heart-lung machine built in Shanghai. Both hospitals had experiences with 40 cases with this apparatus at our visit in July 1960, and they had performed mostly operations because of ventricular septum defect and the tetralogy of Fallot, and the mortality was around 15 %.

Vascular surgery was also expanded during the last years. In Shanghai transplantations of prostheses have been performed, made in China from plastics and from silk with a special preparation.

Urology.

The tuberculosis of the GU tract seems to be relatively frequent in China. Chinese urologists observed, that a complication not to rarely found with a unilateral renal tuberculosis was a contralateral hydronephrosis. The urologists of the Hospital of the Academy of Medical Sciences in Peking found in 1334 patients with a unilateral renal tuberculosis 214 = 16 % with a contralateral hydronephrosis, caused by stenosis of the ostium of the bladder or by a bladder contraction.

Stone formation in the kidney and the urinary tracts is frequent. Interesting differences between the occurrence in the upper and lower urinary tracts have been found in relation with different regions of China and different ways of nutrition and live. In Shanghai, a port, the relation of stones in upper and lower urinary tract stones

In Peking, Wuhan, Sian and Mantshow, in towns situated in the interior on large plains, the relation was 1.05 : 1 in 1188 cases, while in the mountainous regions, e.g. the province Shantung the incidence of stones in the lower tracts, especially bladder stones, have been strikingly frequent. The relation for Shantung was 1:45.9 .

In Central and South China, complications of filiariosis occur in the urinary organs, edema of scrotum and penis and elephantiasis, hydroceles and above all the chyluria in about 10 to 30 % of all infected patients. Good results in the latter have been seen after exposure of the kidney with severance of all lymph ducts.

The uretero-sigmoidostomy is performed by the Chinese urologists for destruction of the bladder by an carcinoma or chronic inflammatory processes

50X1-HUM

In Shanghai, an artificial kidney has been developed in cooperation of the medical institutes and the industry, which has been used with succes in many hospitals on uremic patients. It is now an export article on the list of the chinese industry.

Traumatic Surgery.

The further development of traumatic surgery finds much interest, there are lectures and examinations at the medical schools. Large , independent departments for traumatic surgery have been founded in all large cities and industrial centers during the last years.

The treatment of fractures follows the rules of Böhler at the large centers for traumatic surgery, only a few hospitals- mostly under the directions of former ^{residents} students of the Aurora University in Shanghai- prefer a mainly operative treatment of fractures of the long bones with Lane's plates etc. Only in recent times the methods of fracture treatment of the traditional medicine are being checked at large centers for traumatic surgery. At several hospitals they believe, that drugs used by the Chinese doctors can accelerate the healing of fractures. The results of experiments on animals also seem to show, that some of these drugs favor callus formation. At the 1st Surgical Hospital in Wuhan, which does research work on these drugs, we saw some patients with fractures of the long bones, which have been consolidated in a surprisingly short time. One man, 55 years old, with an oblique fracture of the upper third of the femur, was healed and could bear weight after 4 weeks. Whether these drugs favor callus formation actually

are available.

The "chinese massage" used now as a part of fracture treatment, is certainly not as dangerous as the *stroking and compression massage*, which is still used by some of our surgeons in spite of all intensive well founded warnings. It consists mainly in a light pressure on well defined points of the extremity not injured. The points are selected according to the doctrine of the effective points and conductive pathways

50X1-HUM

Fractures of the neck of the femur seem to be very rare in China. We made the same observation in Vietnam. The fixation of the fracture of the femoral neck is therefor not introduced yet. The 1st Medical School in Shanghai reported on 77 surgical fixations by intramedullary nail for medial fractures of the femoral neck. The early intratochantheric osteotomy, which we used at the Charitè with good results, is recommended for pseudarthrosis in the femoral neck. Cases, which are admitted late, about after 4 weeks, with fractures of the medial neck, are according to many surgeons best treated by intratochantheric osteotomy.

Injuries to the semilunar cartilages are frequent in areas with mining industries, and it is surprising, that the external semilunar cartilage is more frequently lacerated than the internal one.

The method of Matti was preferred for the treatment of pseudarthrosis, if there was no bone defect or only a small one, in cases with larger defects, the method of Phemister was used.

The large teaching institutions in Shanghai, Peking, Tscientin are equipped with bone banks, but most of the surgeons we asked preferred the autoplasmic grafts to the conservated ones. Lyophilized ^{bone} grafts are available in Peking since two years.

Remarkable progresses have been made in the treatment of patients with extensive burns during the last years. Well documented reports are available from Peking, Shanghai and Wuhan, ^{Oh} about the saving of patients with 2nd and 3rd degree burns of over 80 % of the body surface. The large traumatologic centers are equipped with own departments for patients with burns. We could visit such special units in Peking and Wuhan. These department are separated completely from the other hodpital, can be entered only by a lock and some of them have already an airconditioning, so that an asepsis was guaranteed. The open wound treatment is preferred for the local treatment of these burns

According to the experiences of ISEN with 220 patients, the percentage of secondary is markedly less than after closed treatment. Highest importance has the careful nursing care. Special teams of physicians, nurses and technicians are trained for all severely injured patients, who have to take care only of such patients all around the clock.

Pediatric surgery.

Pediatric surgery is an independent specialty at all teaching institutes. According to the statistics of the ministry for public health, the mortality after operations on children decreased definitely, after special centers for pediatric surgery have been founded. The mortality of acute diseases of the abdomen was e.g. 1956 5.6 %, 1958, after the hospital for children has been founded in Peking, it was only 2.4 %. The number of patients is relatively high at this hospital. In 1958, 202 patients with intestinal obstruction due to ascariasis; 229 with a choledochal ascariasis, 178 with invaginations, 220 patients with an acute appendicitis have been treated at the hospital for pediatric surgery in Peking. Malformations of the intestinal tract have been observed strikingly frequent. Chen (Peking) told us, that he treated intestinal and 164 anal and rectal atresias in the last years. An analysis by Ma An Chuan shows, that from 1322 children with a bowel obstruction, 296 had congenital atresias. High is also the number of invaginations with 558 patients = 42.2 % of all cases. In all early cases, a trial of desingagination by barium enema is made, and the author has seen results with this method in over 50 % of these patients.

In Peking, a great number of progressing necroses of the skin were observed in infants. The disease occurred only in babies delivered in hospitals. The mortality of this disease was high during the first years, (1956 = 16.6 %), but it could be lowered to 6.7 % in 1958 by extensive early incisions, and a treatment with plasma infusions had high vitamin dosages.

We noticed during our visit in the hospital in Peking, that no inpatient with a hernia was ^{being} treated. We learned, that hernias are operated in the outpatient department and discharged home immediately.

Finally a word on the problem of thromboembolism. Thrombosis and embolism are extremely rare in China. We have talked to many surgeons who have never seen a postoperative pulmonary embolism, and the pathologist Lin Chen Kong, who worked before with Roessle,

in Peking. We also saw never an embolism during our work in Vietnam. At that time we believed it to be due to the undernutrition, which most of our patients suffered from. But in China, the nutrition has been sufficient for many years. We discussed this problem thoroughly with a colleague in Wuhan, who was working before at the Paulun Hospital in Shanghai. He had never seen an pulmonary embolism at that hospital, which was frequented by the well to do classes. These observations make it probable, that the extremely rare incidence of thrombosis and embolism in East Asia depends on the constitution.

It was interesting for us, that many hospitals did not dress the wounds postoperatively, and that the patients even after major operations like resections of the esophagus have been transferred to the ward without dressings. The percentage of infections is according to the experiences of these surgeons lower than in the wounds with dressings. The pains are less too, as the patients are not bothered by the dressings.

Recent studies on the sensitivity of bacterias to the different antibiotics show, that also in China, where the antibiotics are available on a larger scale only since 1951, the percentage of resistant organisms is increasing constantly. 70-90 % of all staphylococci are resistant to penicillin.

In our former reports we have tried to give a small survey on the development of surgery and its stand in modern China. We restricted ourselves to the main specialties of our discipline. But also the the smaller subspecialties of surgery have been developed, which did not exist before the victory of the revolution. All teaching institutions have centers for neurosurgery, which can report on good results of the treatment of brain injuries and brain and medullary tumors. A list of 1448 intracranial tumors shows, that the procentual distribution of the different tumors equals nearly the frequency found in western Europe and in anglo-american countries. (Glioma 30.6 %, meningioma 20.6 %, tumors of the hypophysis 10.4 %, acousticus neurinoma 9 %, craniopharyngioma 7.1 % angioma and vascular abnormalities 4.6 %, tuberculoma 3.7 %, cholesteatoma 2.3 %). An important field of neurosurgery is the treatment of intracranial and intraspinal diseases caused by parasites, above all the Paragonimiasis and the cerebral cysticercosis.

Plastic and reconstructive surgery also can report on very good results in the treatment of severe mutilations by war injuries and of elephantiasis of the lower extremities and the penis due to filiaricosis.

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