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West China Union Univ

1943

Box 286

(Dentistry)

Twenty-five Years of Dentistry in West China Union University

This Spring the twenty-fifth anniversary of the commencement of dental teaching in the West China Union University is being celebrated.

As early as 1907 the United Church of Canada Mission inaugurated a dental clinic in Chengtu. This health service developed rapidly and has proved to be of considerable value in the maintenance of the health of missionaries and other western residents in West China. For ten years in Chengtu city a general dental practice which gradually won favour in the Chinese community was carried on. All this time Dr. Ashley W. Lindsay, the pioneer dentist, held to his vision of training Chinese dentists, until finally in the year 1917 it became possible to open a Department of Dentistry under the College of Medicine, the dental staff then having increased to three by the addition of Dr. John E. Thompson and Dr. Harrison J. Mullett.

In the first years students were few in number but in 1919 when the University established a College of Dentistry six or eight, or even ten entered every year. Teaching was given at the City Dental Hospital, so that the University was involved in no additional cost. The first graduate to win the degree of D.D.S., in 1921, was Dr. Whang T'ien-chi, and he is still connected with the University, being Superintendent of the City Dental Unit of the United Hospital.

The University was to be closed in 1927 when all westerners were ordered to leave Chengtu, but before the last group had a chance to get away, conditions changed and it was unexpectedly found possible to reopen Arts, Science and Medicine. The three dental faculty members were amongst those who had got away earlier, therefore dental students thus left without anyone to care for them transferred into Science or Medicine. When the College was reopened in 1928 there were only a dozen boys in various stages of their course to re-enter dentistry.

For ten years the Colleges of Medicine and Dentistry operated side by side, but it was recognised that it was unnecessary to develop two staffs for the pre-clinical teaching of medicine and dentistry. The number of students in both colleges was not large, the classrooms at their disposal were limited, and it became apparent that the type of dental education which was developing could be taught in very close conjunction with medicine. Therefore, in 1929, the two Colleges united to form the College of Medicine and Dentistry. So far as administration was concerned the two colleges were united on an equal basis, but in regard to number of students and budget the ratio of one dental student to two medical has been followed.

Medical and dental students are instructed in close cooperation. Similar entrance standards are required. Pre-clinical and pre-dental subjects are the same. All students receive the same classroom and laboratory instruction in biological and medical sciences. An equal number of years of study is required for graduation. Only when medical students begin the study of such specialties as obstetrics, gynecology, parasitology, otolaryngology and ophthalmology, and undertake their internal medicine and surgery ward requirements do the dental students separate and study the dental prosthesis specialties, the oral phases of anatomy, physiology, pathology, and hygiene, and other dental subjects. The medical intern spends his final year in a rotating hospital service, and the dental intern spends a similar twelve months in a rotating clinic practice covering the phases of oral diagnosis, preventive dentistry and public health, minor oral surgery and medicine in their dental phases, parodontal surgery, hospital ward and O.P.D. observations and clinical and laboratory prosthesis, covering the reparative and restorative tooth-tissue techniques, and a full and partial denture reconstructive prosthesis.

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West China Union University Dentistry is primarily a division of the whole field of health service - not a specialty of medical practice, Emphasis is placed on the biological phases of oral health maintenance and therapies. The main object is to train health workers, not technicians. The years of study are longer than those required in western countries, in order that graduates may be able to give more attention to health and functions than to the production of artificial restorations- the objective being to train leaders, teachers, administrators, not private practitioners. To be more specific our aims are:

1. To educate an oral health personnel rather than to train dental prosthesis technicians. Both types are needed to develop a Chinese health service, but, due to limited funds and to lack of qualified Chinese dental teaching staff, the University has concentrated on the one type only. Logically, the preparation of biologically-minded men and women capable of guiding the future development of dental practice and education is our most valuable and useful contribution.

2. To provide dental education in an ethical and Christian environment.

3. To present a model of dental education.

4. To guide the national and provincial health administration and government authorities towards the establishment of a type of dental service best suited to the needs of China.

5. To provide in Chengtu dental clinics for humanitarian service.

6. To produce, in particular, dental staff for health institutions, such as hospitals, health centers, public health clinics, school clinics and the like; teachers and leaders for public health service; dental administrators and teachers for the dental colleges which are about to be organized throughout China.

Since 1934, when the West China Union University was granted an Absolute Charter by the Regents of the University of the State of New York our dental graduates have qualified for the New York State D. D. S. degree. Before the war our dental graduates, of whom there have been ninety odd, could be found in the P.U.M.C. and Municipal Health Stations of Peiping, Tsingtao, Shanghai, Nanking, Hankow, Wuchang, Kweilin, Ichang, Changsha, Chungking; now they are scattered all over Free China in government and private hospitals and institutions. A few have entered private practice.

Until 1939 the West China Union University was the only institution in China giving university grade dental education. In that year the National Central University from Nanking organized a dental department under its College of Medicine.

Government funds are granted for a chair in Dentistry and the College has a limited unmber of research and study fellowships. The growing demand for a dental health service in China can be met through our educational program only if we are able to secure an adequate endowment for its development. At present and for some years to come dental teaching will depend upon our leadership. In the very near future a high type of personnel will be needed urgently in order to staff the dental colleges which the government is now planning to organize in many sections of the country. With the staffing of these colleges in view it will be wise for those graduates who have the ability and the experience to take advantage of one or more years of post-graduate study in the States and Canada. Funds are needed for the travel and other incidental expenses involved.

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For many years it was not possible to house the teaching clinic of the College in quarters primarily errected for the purpose. Then in the spring of 1941, through the efforts of Dr. Joseph Beech in enlisting the interest of Mr. Sydney D. Maddock, necessary funds were secured from the American Dental Trade Association, and a unit of the new University Hospital with facilities for the operation of a modern teaching clinic was opened. Unfortunately the Sino-Japanese war has prevented the furnishing of this clinic with the most recently manufactured operating equipment. However, though far from adequate, the old equipment can be utilised. This new clinic is a vast improvement on the former one which was but an adapted laboratory, affording very crowded quarters. The clinic is now operated by a staff of twenty men and women, of whom all but Dr. R. G. Agnew, Dr. W. G. Campbell and Dr. A. W. Lindsay are graduates of our own University. During these war years the securing of essential supplies has been a constant problem. However, before Hongkong fell a priority - permit secured a moderate supply coming in regularly by C.N.A.C. planes; then packages came by way of Indo-China and the Burma Road until these routes were closed; now by one means and another it has been found possible to bring in a few of the most urgently required goods, not a very generous supply, of course, but a working minimum to enable the clinic to continue its teaching program and the service of its large clientele.

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1943 file Sent by Marjorie Robertson from letter 8-7-43

MEDICAL EDUCATION IN THE WEST CHINA UNION UNIVERSITY

(Broadcast from Chengtu, April 13, 1943)

Modern medicine in chengtu began 51 years ago when the pioneer members of the Canadian Mission opened a small dispensary on Sze Shen Tsi Street. Soon after that the Americans began medical work on Shensi Gai, and a short time later the Canadian Women's Mission opened a hospital on Fang Djen Gai, which was later moved to Hsi Dzi Gung Gai. The purpose of this early medical work was entirely philanthropic, that is, service to the community. It is a principle of Christianity that men are mutually responsible for each others welfare, and this includes physical as well as spiritual and intellectual. Hence, a part of the work of Christian missions has always been the establishment of hospitals and dispensaries for the care of the diseased.

Before long it was evident to the small number of medical missionaries who came to West China that the only possible way of caring adequately for the diseased was by the establishing of a Chinese medical profession on a scientific basis. Hence, efforts were made to begin work in medical education. Soon after the establishment of the West China Union University, towards the end of the Manchu Dynasty, the University opened a Faculty of Medicine. For the first year the staff consisted of only four men, and there were only five or six students. As the first world war began at about the same time, and also as for several years after the Revolution there was much political unrest in Szechwan, the early years of medical education were very much disturbed, and once or twice the University was unable to admit a new class on account of local wars, etc. But in spite of all difficulties the first class was graduated in 1920, and consisted of four men.

To realize the great difficulties that the early medical educators faced one must remember that when they began this work in Chengtu steam navigation on the Yangtse stopped at Ichang. There were no motor roads in Szechwan. Electricity was practically unheard of in this part of the world. Communications between Chengtu and other parts of the province were by sedan chair or by river junk. And all supplies had to be brought up by cargo junk from Ichang. Drugs, instruments, and members of the staff all came the same slow way. There were no Chinese doctors in Szechwan with a scientific training, and very few in any part of China. Hence, the early staff had to be composed entirely of foreigners. This made education still more difficult on account of language differences and differences in social background. But by care and tact most of the obstacles were overcome, and gradually the work of the college became more and more appreciated by the public as they recognised the value of the work done by the graduates.

At first the classes were carried on in temporary quarters. Preclinical sciences, such as physiology, biochemistry, etc., were taught in other university buildings. A special small building was erected for the teaching of anatomy, as it was feared that staff and students of other departments might object to dissection in one of the regular university buildings. It is noteworthy that the first legal dissection done in China in modern times was carried out in this little building, with the full permission and indeed cooperation of the authorities. For some years bodies of executed criminals were sent to the anatomy laboratory for dissection.

In 1926-28 the first permanent building of the College was erected, when the east and west wings of the college teaching building were put up, and opened in the Spring of 1928. They still house the Departments of Anatomy (both gross and microscopic) Physiology and Pharmacology: Pathology (including Bacteriology and Parasitology); and certain dental departments. These two wings are now being joined by the central and main section of the building, which will contain the Departments of Biochemistry; Public Health; the College Library and Administrative Offices.

At first the college did not have its own hospital, so it used for clinical teaching the three mission hospitals in Chengtu, and the work of the last three

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years was conducted largely in these institutions. They were owned by the mission, but were really under the control of the University. However, this system, although it provided nearly 400 teaching beds, was inconvenient, for the hospitals were scattered and much time was wasted in travel. It also made administration difficult. So from the beginning the College planned to have a hospital of its own. The collection of money for this was carried on for many years, mostly by Dr. Joseph Beech, the first President of the university and more recently its Chancellor. Gradually sufficient was secured to begin building. The foundations of the hospital were laid in the winter of 1936-37, and the first building was put up in the autumn of 1937, just after the outbreak of the Sino-Japanese War. The entire plant, when fully completed, will accommodate about 500 inpatients, and will be easily capable of caring for 500 outpatients per day. It includes, besides both public and private wards, outpatient department for fully specialized and departmentalize work, a dental clinic, pharmacy, x-rays department, maternity delivery rooms, a large suite of four operating rooms, isolation building, kitchens, laundry, boiler house, morgue, machine shops, garage, school of nursing and nurses dormitory, dormitories for residents and internes, admitting and emergency building, chapel, laboratories, water tower, etc., etc. Of the above the only buildings not yet erected are the following: school of nursing and nurses' dormitory, one large ward building, admitting and emergency building, chapel. On account of the very high cost of building these will have to be postponed until after the war when more money can be collected.

The equipping of such a large plant in war time is extremely difficult. But fortunately much was brought in before communications became too difficult. Modern surgical equipment and sterilizing apparatus is already here. Part of the permanent x-ray plant is here. Much other apparatus has been accumulated during these many years of medical work in Chengtu, and some of this is being transferred to the new hospital.

On February 23rd. the patients of the Department of Obstetrics and Gynecology were transferred to the new hospital. It is expected that the Department of Pediatrics and portions of Medicine and Surgery will move before long. In this way the center of our teaching work will shift to the new hospital. It is expected that the mission hospitals will continue in cooperation with the university hospital as branches of one institution.

One of the essentials in a teaching hospital, and in fact in any kind of service hospital also, is endowment for the support of free beds. This enables members of the community who could not otherwise afford to pay for hospital treatment to obtain the best of modern medical care. Such care is extremely expensive, for in addition to ordinary medicinal treatment, food and nursing, it frequently includes such things as x-ray examination, laboratory tests, surgical operations, etc. The rich can afford to pay for these, and from what they pay a certain amount may be applied to the care of the poor. But this is usually not enough to provide sufficient adequate care, and so endowment is essential. Before the new hospital opened Chancellor Beech and members of the Board of Directors of the University subscribed towards a fund for this purpose. Now the students of the college are working to obtain more money for such endowment. By means of a concert and by subscriptions collected through our graduates and other friends the College is now trying to increase this fund so that a considerable number of free beds may be endowed in all departments.

The number of medical students in the W.C.U.U. now number 225, representing all provinces in China as well as overseas Chinese from Malayia, Hongkong and other places. So far 195 have graduated in medicine, but as the classes are now much larger than a few years ago this number will rapidly increase. The faculty consists of almost fifty teachers and about 25 technicians, assistants, etc. The hospital has a large staff of doctors, nurses, technicians, etc., not included in the above.

Besides medical education the College also includes dental education, nursing education, the education of medical technicians, and the practical training of students in pharmacy of the College of Science. In addition to the above staff the college includes about 20 dentists.

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Its work, besides the provision of a general clinical training in the various branches of medicine and surgery, includes special hospitals for Eye, Ear, Nose and Throat; Tuberculosis; Leprosy. The eye, ear, nose and throat clinic is probably the largest in China, and graduate doctors come from many places for post-graduate work in these subjects. Its pathology service provides diagnostic facilities for many hospitals in many parts of the country. The College has available for use radium for the treatment of cancer, possibly the only place in Free China where this can be obtained. It also has the most complete medical library in Free China. It cooperates with the provincial government and the other medical colleges in the maintenance of a rural health center in a neighboring hsien, where the students are given experience in such work before graduation.

Its war-time contribution has been very great, for it has provided facilities for two other medical colleges evacuated from their original sites. For four years the College of Medicine of the National Central University found a home in the classrooms, laboratories and hospitals of the W.C.U.U., and the present is the sixth year that the Medical College of Cheeloo University has been dependent upon W.C.U.U. for its existance. Cheeloo came to Chengtu with students and some staff, but no equipment, no supplies, no books, no buildings. All these have been provided by West China.

This college is about the only medical college in China that has not had to move from its original location because of the war. Hence, it is in a position of greater stability than the others. It has been able to concentrate on the problems of education and of healing, rather than upon the problems of evacuation and setting up in temporary quarters. Hence, the progress in recent years has been considerable. As the only medical college permanently located in Szechwan it should have a very bright future before it as it enters upon its thirtieth year of service. .....

Broadcast from Chengtu, April 13th 1943

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1943

Dental Education in West China Union University

(Broadcast from Chengtu, April 13, 1943

Medical and dental practice are two divisions of medicine, in dependent in their practice but interdependent in the service of healing which they render to patients.

Medicine is ever demanding new and necessary practice specialties to meet the fast increasing knowledge of the causes and the effects of diseases and disorders, and of their cure.

Modern dentistry did not develop as a specialty of medical practice. Its origin was outside of the family of the medical practice specialites and it is responsible for its own special field, the teeth and the mouth. Reasons for dentistry becoming a division of medicine rather than an oral specialty of medical practice have varied in different countries, but the fundamental or inherent cause for this divergent development has been the unique nature of the oral and dental structures and tissues which demand a very special and peculiar therapeutic and restorative care in order to maintain them in health and to restore their functions when diseased or disordered.

The actual form of dental practice-organisation in various countries has depended upon fortuitous circumstances, historic background, and the leadership of those in whom dentistry has happened to rest when the national consciousness was aroused to the need for an organised dental profession.

In Great Britain, the very late recognition of the necessity for a scientific dental health service - the year 1921 - resulted in a delayed development of a biologically-minded dental profession. Over 40,000 dental practitioners who were in practice in 1921 had other dental qualification than a certain skill in dental prost- thesis technology. This skill made them good technicians, but did not fit them to make use of the many new scientific medical discoveries, or of the results of our modern research. Scientific dentistry in Great Britain is now being developed by a comparatively small number of graduates of the new dental curriculum which is stressing the biological phases of dental practice.

In the United States and Canada dentistry was greatly influenced by the emphasis placed upon industrial technology during the last fifty years. Nowhere have dentistry's technical problems been more satisfactorily solved than in America, but nowhere has the biologic side of dentistry received more attention, so that today the American continent has a large group of forward-looking and open-minded dental teachers and leaders who have recognised that dental practice must be based both upon the biological and technical sciences.

Vested interests of American dentistry are delaying dental progress towards a comprehensive Public Oral Health programme, but the growing demand for adequate dental services by the American public will assure that preventive as well as restorative care must be made available in the not distant future to a growing proportion of the population.

We believe that the future organisation of dentistry for China will be decided within the next few years. China has no body of indigenous dental practitioners to be compared with its very-well-thought-of native medical herb practitioners, but there has come to be imposed upon the Chinese public a type of dental practice carried on by unlettered young men who have acquired by one means or another a few simple dental restorative techniques, together with some very questionable skill in the removal of teeth. Apart from this uneducated group there are less than five hundred men and women who have some degree of formal dental training and only a portion of these have been registered as qualified dentists by the government. A few less than one hundred are graduates of the West China Union University. Though few in number these university's graduates already held, before the advent of the Sino-Japanese war, position in all important health-centres - in Peiping, Tsinan, Shenghai, Changsha, Wuchang, Hankow, Kweilin, Loiwing, and in many cities in Szechwan. They are now to be found in Kunming, Kweiyang, Anshun, Loyang, Lanchow, Sian, and all the large cities of Szechwan have also one or more of these men.

In every one of the cities mentioned it has been acknowledged that W.C.U.U. dental graduates are worthy leaders of modern scientific dentistry. It is no exaggeration to say that W.C.U.U. dental education is not only recognised as

being the best in China, but also that it is producing men and women dental practitioners and educators capable of deciding and fixing the type of dental practice which will be most suitable for China's present and future needs. The main drawback at present is the smallness of the number of these leaders.

In the future there may be many reasons for the all-too-slow development of dentistry in China, but without doubt the main reason will be the insufficient number of adequately educated and trained dental teachers and administrators. The new dental unit of the West China Union University Hospital is capable of expansion to care for many more clinical students than are now receiving instruction.

The dental teaching building is designed to provide for large numbers of patients in an efficient systematic manner, and the clinical staff is prepared to give careful and adequate supervision in enabling students to develop skill, and to gain the necessary experience in the care of dental diseases and disorders and in all the therapies necessary to the operation of modern dental practice.

Dentistry has rejoiced to join in the official opening of the W.C.U.U. Hospital Building. Our year-and -a-half of unofficial occupancy of the new dental section has proved that the people of Chengtu and, indeed, the people of all unoccupied China appreciate the services which we are rendering. This appreciation is shown by the ever-increasing number of patients who have sought our services, and their often expressed gratitude for the care which they have received.

The W.C.U.U. objective for dentistry is to provide a model of the type of dental education believed necessary to the development of a dental profession in China worthy of its full responsibilities. Quality of service will always predominate in the education offered, rather than a large number of graduates; but in passing we reiterate that the maximum number of students who can be received in the W.C.U.U. dental laboratories and clinic has not yet been reached.

Dental teaching in the West China Union University has now completed the twenty-fifth year since its inauguration. Much has been accomplished to initiate modern dental education and practice in China; much more can be attained during the next quarter of a century. The physical plant represented by building and equipment is prepared. It is now the privilege and the responsibility of the coming generation to continue within these walls the training of future members of the profession and to advance the standards laid down by this first quarter century of university education. W.C.U.U. medicine and dentistry together dedicate themselves to the teaching and practice of the prevention of disease, with its attendant economical and physical distresses, and where prevention fails to foster the development of trained medical and dental personnel capable of caring for the sick, the suffering and for those whose spiritual, mental and physical functions and perceptions have been deranged or destroyed. Our motto for the past has been "Service before self". Our hope for the future is that "The best is yet to be."

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Broadcast from Chengtu, April 13th 1943

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1943

NOTES ON AN INFORMAL CONFERENCE

ON RECENT DEVELOPMENTS IN CONNECTION WITH

THE COLLEGE OF MEDICINE AND DENTISTRY OF WEST CHINA UNION UNIVERSITY

8:00 A.M., Friday, September 24, 1943
The Park Room, Parkside Hotel, New York, N. Y.

Persons Present

Dr. Edwin C. Lobenstine, Chairman of the China Medical Board, and Chairman of the A.B.C.C.C. Committee on Medical Education.
Bishop Herbert Welch, Chairman, West China Union University Board of Governors.
Dr. J. W. Decker, President of the Associated Boards and Member of the W.C.U.U. Board of Governors
Dr. Jesse H. Arnup, Member, W.C.U.U. Board of Governors, and Secretary of the Board of Foreign Missions of the United Church of Canada.
Dr. Edward H. Hume, Secretary of the Christian Medical Council for Overseas Work, and Member of the A.B.C.C.C. Committee on Medical Education.
Mr. C. A. Evans, Acting Executive Secretary, Associated Boards
Mr. C. H. Corbett, Assistant Secretary, Associated Boards

Purpose of the Conference

The conference was called by Dr. Lobenstine primarily in order to report to members of the Board of Governors of W.C.U.U. decisions recently reached by Dr. Claude E. Forkner, Director of the China Medical Board, and the Administrative authorities of W.C.U.U. as a result of which the P.U.M.C. School of Nursing is to be re-opened on the W.C.U.U. campus, and medical students of P.U.M.C. are to be admitted to the joint medical school of W.C.U.U. and Cheeloo University.

It was Dr. Lobenstine's hope that report on these developments might appeal to the members of the Board of Governors of W.C.U.U. and members of the A.B.C.C.C. as presenting a very real opportunity of strengthening the already functioning medical schools on the campus; in which event he hoped that the Board of Governors would be led to encourage the University authorities to give their fullest and most constructive cooperation to plans now developing so as to lead to a united program for medical and nursing education.

Review of Developments

There were circulated in advance of the meeting letters giving information received from Dr. Forkner in regard to these developments including the reasons leading thereto. Among these was a letter from Dr. Forkner addressed to Dr. Leslie Kilborn under date of June 29, 1943, in which the results of the negotiations were clearly set forth. Additional information was given at the meeting, especially, the bearing of these plans upon governmental institutions which had been under consideration as possible locations for the nursing school and the study of the P.U.M.C. medical students.

That difficulties of adjustment were certain to arise in working out a fully integrated program was clear, both from past experience in the relations of W.C.U.U. and Cheeloo University and further with National Central; also, from the inherent difficulties in working out any integrated and effective union.

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Dr. Lobenstine felt that encouragement from the Board of Governors leading to generous and constructive measures would add materially to the success of this Wartime Medical Educational program. He hoped that the meeting might lead to some messages of the Board of Governors by Bishop Welch and Dr. Arnup and others.

Discussion

Various aspects of the situation were discussed and the following points were brought out:

1. There was more likelihood of difficulty arising among members of the faculty and other members of the staff than among the students. It was thought that a good deal would depend on the calibre of P.U.M.C. professors who might be invited to join the staff for the duration. Were any of them to outclass men already in leadership on the staff, some of the present teachers might eventually be lost. However, this danger does not exist in any plans thus far reported for only three P.U.M.C. faculty members have actually arrived and none of them are among the top ranking P.U.M.C. staff.

2. Among permanent assets from these developments are:

   a. The appropriation of US$66,000 to complete two of the permanent buildings of the W.C.U.U. Hospital.

   b. The expectation that the presence for several years on the campus of P.U.M.C. School of Nursing will contribute to the development of the college grade schools of nursing for which West China has been hoping.

3. Financial difficulties in the future when the P.U.M.C. re-opens in Peking or elsewhere were referred to as perhaps leaving W.C.U.U. Medical School more highly developed than it could finance. This was not stressed, however, and it was felt that it did not constitute an immediate problem.

Decisions

There was informal agreement on the following points:

1. Bishop Welch as President of the Board of Governors was requested to send a cablegram to Chengtu expressing congratulations over the new developments, and the hope that the University would make generous and constructive arrangements.

2. This cablegram was to be followed by letters from Bishop Welch, Dr. Arnup and the Associated Boards emphasizing the spirit and aim of the P.U.M.C. in these developments and encourage Christian attitudes and whole-hearted cooperation.

Adjournment

Charles H. Corbett

Secretary

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OBSTETRICS & GYNECOLOGY IN WEST CHINA UNION UNIVERSITY HOSPITAL

In a land where traditionally women have always taken a secondary place, it is of interest that when the University Hospital attached to the West China Union University College of Medicine and Dentistry first opened its beds, they were beds for women - for Obstetrical and Gynecological cases. The first baby born in this new hospital was the first child of two graduates of West China Union University. Both of these interesting facts were a toss from the Fates. The Women's Hospital was burned to the ground in the middle of the night three and one half years ago. For a time we found temporary quarters in a school building which had been evacuated on account of air raids. This place, for the use of which we were thankful, was unsuitable in many ways. So those who work in Obstetrics and Gynecology were, maybe, more anxious than others to move. Having once been obliged to move, we knew that it could be done and dit it. As for the first baby - well, as you all know, the stork comes as he will, and he chose to bring a University baby first.

The actual shell of a hospital into which we moved last February is spacious and airy and much better than anything we have had. There are fine operating rooms for Gynecology and a very good suite for obstetrical deliveries. But imagine to yourselves rooms with no furniture in them but beds and bedside table, no curtains, no screens on windows, service rooms with fires of charcoal, no running water, no hot water, no adequate drains, electric lights which may go off anytime for several days at a time. Imagine cold, cold wards in winter, with never a bit of heat in them, where patients must be bathed and otherwise cared for. Imagine hot, hot wards in summer, with never an electric fan, nor even a punka, and mosquitos by the million making the air sing, and making mosquito nets essential. Imagine large piles of soiled linen and clothing washed by hand and ironed by careful folding. Imagine delivery rooms and operating rooms where anesthetics are being poured, heated by old-fashioned coal stoves. And if by this time your imagination is not worn out, imagine us working and trying to keep up to standard and retain a few Christian principles in the midst of these drawbacks. This paragraph is intended, quite frankly, to make you want to find us furniture and plumbing and heating and power and fans and the money to run all these.

This hospital serves a triple function.

First - it provides service to the community. Here women may get (in spite of the drawbacks) scientific care when ill or when having babies.
Second - it is the recipient of large numbers of referred cases from private practitioners, from midwives, from midwifery schools not equipped for handling abnormal and difficult cases.
Third - it is a teaching centre for the medical students and nurses of our institution, in these special lines. At the present it is the home of the Peking Union Medical College, School of Nursing, also.

Some of the needs have been suggested above - another crying need is an endowment for charity beds. So very many of the referred cases are completely penniless, having spent any few dollars they had before coming to us. They usually are in need of blood transfusions, operations and expensive medication. Each month many thousands of dollars are put on the books, for which no cent is to be expected. But how can one turn away a woman in labor, or one dying from blood loss, or sepsis?

Approximately 12% to 15% of our Obstetrics and Gynecology patients have syphilis. Many of them are very poor. Treatment is a great problem, in which up to the present Government and the Public Health Department have not been able to lend any financial help. China loses more citizens through this than through the war.

New life - The New Life Movement - New Life for Ancient China! The obstetrician is the person whose hand is on this New Life Movement. We may be saving china's Saviour and who knows but China's Saviour is going to be the decisive factor in the world of tomorrow.

GLADYS STOREY CUNNINGHAM.

November 1943.

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W.C.U.U.

Graduates of Medical

School

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UNIVERSITIES
APR 14 1944
JOINT OFFICE

PRESENT STATUS OF THE GRADUATES OF THE COLLEGE OF MEDICINE AND DENTISTRY WEST CHINA UNION UNIVERSITY

	GRADUATES IN MEDICINE				GRADUATES IN DENTISTRY				COMBINED TOTALS	
	Men	Women	Total	Per Cent	Men	Women	Total	Per Cent	Total	Per Cent
Government Hospitals	50	8	58	27.0	26	3	29	31.5	87	28.3
Mission Hospitals	65	16	81	37.7	24	8	32	34.8	113	36.8
Private Practice	45	14	59	27.4	17	2	19	20.6	78	25.4
Graduate Study	0	0	0	0.0	2	0	2	2.2	2	0.7
Sick	3	1	4	1.9	1	0	1	1.1	5	1.7
Deceased	10	1	11	5.1	1	2	3	3.3	14	4.6
Unknown	2	0	2	0.9	6	0	6	6.5	8	2.5
	175	40	215	100.0	77	15	92	100.0	307	100.0

For the 192 Students who graduated during the war years, the percentages in the first three categories are significantly different:

Government Hospitals	35.4%
Mission Hospitals	42.7%
Private Practice	12.5%

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WEST CHINA UNION UNIVERSITY

THE COLLEGE OF MEDICINE AND DENTISTRY

PRESENT STATUS OF THE GRADUATES OF

	GRADUATES IN MEDICINE				GRADUATES IN DENTISTRY				COMBINED TOTALS	
	Men	Women	Total	Per Cent	Men	Women	Total	Per Cent	Total	Per Cent
Government Hospitals	50	8	58	27.0	29	3	29	31.5	87	28.3
Mission Hospitals	65	16	81	37.7	24	8	32	34.8	113	36.8
Private Practice	45	14	59	27.4	17	2	19	20.6	78	25.4
Graduate Study	0	0	0	0.0	2	0	2	2.2	2	0.7
Sick	3	1	4	1.6	1	0	1	1.1	5	1.7
Deceased	10	1	11	5.1	1	2	3	3.3	14	4.6
Unknown	2	0	2	0.9	9	0	9	9.5	8	2.5
	175	40	215	100.0	77	15	92	100.0	307	100.0

For the 192 students who graduated during the war years, the percentages in the first three categories are significantly different:

Government Hospitals	35.4%
Mission Hospitals	42.7%
Private Practice	12.5%

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WEST CHINA UNION UNIVERSITY GRADUATES

College of Medicine & Dentistry

G. -- Government Hospital
M. -- Mission Hospital
P. -- Private Practice

Name	Sex	Year	Course	Present Occupation
1 Liu Yue-tin	M	1920	Medicine	P. (Yang Hsien)
2 Hu Chen-hsien	M	1920	Medicine	G. (Pi Hsien)
3 Li Ni-min	M	1920	Medicine	P. (Chungking)
4 Yen Hsiang-ho	M	1920	Medicine	G. (Ih-Pin)
5 Wang Kai-gi	M	1921	Medicine	P. (Tsao Tung)
6 Chien Gia-hung	M	1921	Medicine	M. (Chungking)
7 Chen Hung-hsin	M	1921	Medicine	P. (Chengtu)
8 Whang Tien-chi	M	1921	Dentistry	M. (Chengtu)
9 Gen Hsiang-yün	M	1922	Medicine	Deceased
10 Dzen Gi-dzi	M	1922	Medicine	P. (Lan Pu)
11 Djao Shu-yuen	M	1922	Medicine	P. (Chungking)
12 Hwang Dao-chin	M	1922	Medicine	G. (Chengtu)
13 ~~Hwang Dao-chin~~ Djang Hsiao-Shi	M	1922	Medicine	Deceased
14 Chen Yün-hwai	M	1923	Medicine	Deceased
15 Hsiao Li-shen	M	1923	Medicine	P. (Chengtu)
16 Yang Dsi-kao	M	1924	Medicine	M. (Kiating)
17 Fei Chen-djung	M	1926	Medicine	P. (Chengtu)
18 Chen Li-hwai	M	1926	Medicine	P. (Chengtu)
19 Yuen Djung-djou	M	1926	Medicine	P. (Chungking)
20 Lo Gwang-bi	M	1926	Medicine	M. (Chengtu)
21 Du Shun-deh	M	1926	Medicine	M. (Chengtu)
22 Hsi Yun-di	M	1927	Medicine	Deceased
23 Yün Sheo	M	1927	Medicine	P. (Ngan Hsien)
24 Yoh Ih-tsi	M	1927	Medicine	P. (Kiating)
25 Li Dsi-yoh	M	1927	Medicine	M. (Chungking)
26 Hsü Lung-gwang	M	1927	Medicine	P. (Chengtu)
27 Chen Wu-hsiang	M	1927	Dentistry	P. (Chungking)
28 Chen Hwa-chin	M	1927	Dentistry	P. (Chungking)
29 Den Kwe-chuen	M	1928	Medicine	P. (Chengtu)
30 Lü Djung-lin	M	1928	Medicine	P. (Chungking)
31 Liu Yün-hwai	M	1928	Medicine	P. (Chiang-Gin)
32 Hsiao Li-shen	M	1928	Medicine	P. (Chengtu)
33 Lu Tseh-ren	M	1928	Medicine	Deceased
34 Chwang Deh-min	M	1929	Medicine	M. (Shifu)
35 Dzen Djung-ni	M	1929	Medicine	P. (Lu-Hsien)
36 Wang Dzen	M	1929	Medicine	P. (Tze-Liu-Chin)
37 Tsao Bin	M	1929	Medicine	P. (Tze-Liu-Chin)
38 Wu Hsin-hsue	M	1929	Medicine	P. (Tsao-tung)
39 Nie Hwang-tin	M	1929	Medicine	P. (Tsao-tung)
40 Chen Wen-gwei	M	1929	Medicine	G. (Kweiyang)
41 Shiang Bi-kwang	M	1929	Dentistry	P. (Chungking)
42 Ngan Chi-li	M	1930	Dentistry	?
43 Hsi Yin-djang	M	1930	Dentistry	Postgraduate study, Boston, Ma
44. Chen Hwa	M	1930	Dentistry	G. (Chengtu)
45 Yoh I-hsuen	M	1930	Dentistry	G. (Peiping)
46 Mao Hsueh-gin	M	1930	Dentistry	P. (Peiping)
47 Chiang Fu-ngan	M	1930	Dentistry	G. (Chungking)
48 Giang Shao-djung	M	1931	Medicine	P. (Ni-Ling)
49 Giang Mu-chin	M	1931	Medicine	G. (Tsao-Tung)
50 Yü Chin-ho	M	1931	Medicine	G. (Yung-Chong)
51 Djou Dsi-gün	M	1931	Medicine	Deceased
52 Hsie Hsi-shu	M	1931	Medicine	M. (Chengtu)
53 Gia Gün	M	1931	Medicine	G. (Wen-Kiang)

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#	Name	Sex	Year	Course	Present Occupation
54	Yang Dgen-hsuen	M	1931	Medicine	G. (Wen-kiang)
55	Wu Yueh-dju	M	1931	Medicine	P. (Chungking)
56	Li Shi-hsi	M	1931	Medicine	P. (Chungking)
57	Wang Kwenpei	M	1931	Medicine	G. (Kang-Tin)
58	Fay Chen-hsien	M	1931	Dentistry	P. (Chengtu)
59	Tao Yiu-yüen	M	1932	Medicine	M. (Fu-lin)
60	Wang Chuen-fu	M	1932	Medicine	P. (Lu-Hsien)
61	Gao Chen-hsuen	M	1932	Medicine	M. (Chung Hsien)
62	Yoh Ih-chen	M	1932	Medicine	M. (Chengtu)
63.	Li Yün-gwang	M	1932	Medicine	P. (Kwang Han)
64	Yoh Tung-li	M	1932	Medicine	P. (Chengtu)
65	Chen Hsi-chang	M	1932	Dentistry	P. (Chungking)
66	Hsiao Cho-ran	M	1932	Dentistry	G. (Chungking)
67	Baronoff, Alex.	M	1932	Dentistry	P. (Peiping)
68	Djang Gwang-lan	M	1933	Medicine	Deceased
69	Hsung Hsio-hwei	M	1933	Medicine	M. (Chungking)
70	Liu Tsao-chin	M	1933	Medicine	P. (Chungking)
71	Djo Gun	M	1933	Medicine	Deceased
72	Ho Yui-hsiun	M	1933	Medicine	G.
73	Hsü Min-yuen	M	1933	Medicine	P. (Chungking)
74	Lung Chi-san	M	1933	Dentistry	P. (Foochow)
75	Djou Lu	M	1933	Dentistry	G.
76	Wu Yün-gwang	M	1934	Medicine	P. (Chong-Pa)
77	Tsao Djung-liang	M	1934	Medicine	M. (Chengtu)
78	Nien Hsi-kwe	M	1934	Medicine	Deceased
79	Dso Li-lieng	M	1934	Medicine	M. (Chungking)
80	Yen Yin	M	1934	Medicine	M. (Chengtu)
81	Din Hsiang-chin	M	1934	Medicine	M. (Chungking)
82	D u Min-li	M	1934	Medicine	G. (Lan-Chung)
83	Hsia Chu	M	1934	Dentistry	P. (Chungking)
84	Dai Shu-gu	M	1934	Dentistry	M. (Chengtu)
85	Yuan Chang-lin	M	1934	Dentistry	P. (Kweiyang)
86	Djou Yiu-deh	M	1934	Dentistry	M. (Chungking)
87	Hsung Bi-swang	F	1935	Medicine	M. (Chengtu)
88	Lü Yung-djen	F	1935	Medicine	P. (Chengtu)
89	Beh Yin-tsai	M	1935	Medicine	M. (Chengtu)
90	Tang Yün-sung	M	1935	Medicine	P. (Chungking)
91	Lo Ren-yün	M	1935	Medicine	P. (Chengtu)
92	Hsi Chen-hsien	M	1935	Medicine	M. (Pen-Hsien)
93	Yang Gia-liang	M	1935	Medicine	M. (Chengtu)
94	Lin Mung-hsun	M	1935	Medicine	M. (Nda-Kiang)
95	Pen Oi-ren	M	1935	Medicine	M. (Chengtu)
96	Yang Hsien-gin	M	1935	Medicine	P. (Chengtu)
97	Wen Fu-yang	M	1935	Medicine	P. (Chungking)
98	Wei Chin-gung	M	1935	Medicine	P. (Chingking)
99	Lü Yui-lin	M	1935	Dentistry	Deceased
100	Cheo Fu-pei	M	1935	Dentistry	G. (Wanhsien, Sze)
101	Wu Ho-gwang	M	1936	Medicine	M. (Chengtu
102	Pan Yün-hsuen	M	1036	Medicine	P.
103.	Djou Hsü -deh	M	1936	Medicine	M. (Chengtu)
104	Hsiao Shu-min	F	1936	Medicine	P. (Chengtu)
105.	Wu Hsiu-djen	F	1936	Medicine	P. (Chengtu)
106	Lo Lin-yün	F	1936	Medicine	M. (Nei-Kiang)
107	Pen Dzi-lan	F	1036	Medicine	P. (Chengtu)
108	Chai Dzi-hsien	F	1936	Medicine	P. (Tze-Liu-Ching)
109	Hwang Hung-gü	M	1936	Medicine	M. (Kiang-Ting)
110	Li Gwang-dju	M	1936	Medicine	G.
111	Mrs. Lenox	F	1936	Medicine	M. (Chengtu
112	Chang Chuin-hsien	F	1936	Medicine	P. (Chengtu)

	Name	Sex	Year	Course	Present Occupation
113	Hwang Dwen-fang	F	1936	Dentistry	M. (Chengtu)
114	Chang Shu-lin	M	1936	Dentistry	G. (Kweiyang)
115	Chang Hong-chuin	M	1936	Dentistry	M. (Peiping)
116	Hsia Yao-shen	M	1936	Dentistry	P. (Chungking)
117	Scharevitch,E.	F	1936	Dentistry	M. (Tsinan)
118	Du Swen-fu	M	1937	Medicine	M. (Suining)
119	Djang Dai-min	M	1937	Medicine	P. (Sinkiang)
120	Mao Wen-shu	F	1937	Medicine	M. (Chengtu)
121	Djang Yu-yin	F	1937	Medicine	P. (Chungking)
122	Dwan Yu-chin	F	1937	Medicine	M. (Chengtu)
123	Giang Liang-yin	F	1937	Medicine	G. (Chengtu)
124	Lo Shen-djao	M	1937	Medicine	G.
125	Wu Djo-kai	M	1937	Medicine	G. (Kiang-Chin)
126	Wang Ru-ngan	M	1937	Medicine	P. (Chengtu)
127	Tang Wen-kwei	M	1937	Medicine	M. (Chengtu)
128	Wang Li-tsu	M	1937	Medicine	M. (Chengtu)
129	Djang Gun-ru	F	1937	Medicine	M. (Chengtu)
130	Wang Dsai-min	M	1937	Medicine	P. (Chungking)
131	Hsia Liang-tsai	M	1937	Dentistry	M. (Chengtu)
132	Chen Ih-Gwei	F	1937	Dentistry	Deceased
133	Wang Tsen-suei	M	1937	Dentistry	P. (Chengtu)
134	Pen Gien-lung	M	1937	Dentistry	M. (Kiating,Sze)
135	Djou Hai-fan	M	1937	Dentistry	M. (Chengtu)
136	Yü Deh-min	F	1937	Dentistry	G. (Chengtu)
137	Chen Kwei-hwa	F	1937	Dentistry	P. (Tegal, Java)
138	Liao Wen-yü	F	1937	Dentistry	M. (Chengtu)
140	Ih Min-dsi	M	1938	Medicine	P. (Chungking)
139	Chen Yü-yu	F	1938	Medicine	M. (Sui-Lin)
141	Chen Dju	M	1938	Medicine	G. (Kang-Tin)
142	Fu Tin-pi	M	1938	Medicine	P. (Mien-Yang)
143	Wang Wen-yü	F	1938	Medicine	M. (Chungking)
144	Yoh Ih-yung	F	1938	Medicine	P. (Chungking)
145	Chen Chin-tsei	M	1938	Medicine	M. (Chengtu)
146	Wu Chung-fu	M	1938	Medicine	?
147	Liu Chang-yün	M	1938	Medicine	M. (Chengtu)
148	Chen Len-gin	M	1938	Medicine	M. (Ya-An)
149	Dzen Deh-yün	M	1938	Medicine	M. (Chungking)
150	Yang Dzen-hwa	M	1938	Medicine	M. (Chengtu)
151	Djung Gwang-yen	M	1938	Medicine	G. (Chengtu)
152	Tong Tso-hai	M	1938	Dentistry	P.
153	Wang Yün-nieh	M	1938	Dentistry	G. (Chungking)
154	Wei Tze-tung	F	1938	Dentistry	M. (Chengtu)
155	Liang Pei-fang	F	1938	Dentistry	G. (Kweilin)
156	Cheo Shao-wu	M	1938	Dentistry	M. (Chengtu)
157	Tsen Chao-ming	M	1938	Dentistry	G. (Kweilin)
158	Hsieh Chin-hsuin	M	1938	Dentistry	P. (Luchow)
159	Chen Hsi-sung	M	1938	Dentistry	P. (Tegal,Java)
160	Chen Hsi-ho	M	1938	Dentistry	? Shanghai
161	Chen Bin	M	1939	Medicine	G. (Tze-Tung)
162	Yün Hung-fu	M	1939	Medicine	G. (Gan-Tze)
163	Djang Wan-dsun	M	1939	Medicine	G. (Tien-Pa)
164	Liu Chuen-hsiang	F	1939	Medicine	P. (Chung-Lin)
165	Gu Shin-djou	M	1939	Medicine	M. (Chengtu)
166	Hsü Kwe-chin	M	1939	Medicine	M. (Chengtu)
167	Wu Yoh-tsai	M	1939	Medicine	G. (Shih-Fong)
168	Yuen Yün -su	M	1939	Medicine	G. (Sui-lin)
169	Hu Tin-swei	M	1939	Medicine	M. (Chengtu)
170	Tao Li-si	F.	1939	Medicine	M. (Tze-Liu-Chin)
171	Djang Tseh-hao	M	1939	Medicine	P. (Beh-Pa)
172	Djao Bang-hw i	M	1939	Medicine	M. (Chungking)

#	Name	Sex	Year	Course	Present Occupation
173	Ho Gwang-tsi	M	1939	Medicine	M. (Chengtu)
174	Djau Yün-deh	F	1939	Medicine	M. (Chungking)
175	Yoh Ih-swen	F	1939	Medicine	P. (Chengtu)
176	Yang Gun-min	M	1939	Medicine	M. (Lu-Hsien)
177	Djang Djung-suen	M	1939	Medicine	M. (Chungking)
178	Fung Chuan-ren	M	1939	Medicine	P. (Ching-Lin)
179	Tsai En-fen	F	1939	Medicine	P. (Chengtu)
180	Chen Kwan-hsi	M	1939	Medicine	M. (Chengtu)
181	Shen Li-chen	F	1939	Medicine	P. (Yuan-Chwan)
182	Chau Yün-hsi	M	1939	Medicine	G. (Chungking)
183	Gan Dai-pu	F	1939	Medicine	P. (Chungking)
184	Tsan Lung-dan	M	1939	Dentistry	M. (Chungking)
185	Ngeo Yang-kwan	M	1939	Dentistry	G. (Chengtu)
186	Lin Beh-kang	F	1939	Dentistry	M. (Chengtu)
187	Hsi Tsen-fen	F	1939	Dentistry	P. (Luchou)
188	Fu Dsi-ru	F	1939	Dentistry	Deceased
189	Dai Tse-An	M	1939	Dentistry	G. (Anshun,Kweichow)
190	Yo Ih-ho	M.	1939	Dentistry	M. (Suifu,Sze)
191	Hsü Lo-chuen	M	1939	Dentistry	M. (Chengtu)
192	Tien Ni-hsiao	M	1939	Dentistry	P. (Luchou)
193	Chang Hsi-tseh	M	1939	Dentistry	G. (Anshun,Kweichow)
194	Yang Shen-shu	M	1939	Dentistry	M. (Chengtu)
195	Sung Ru-yao	M	1939	Dentistry	Post-graduate study, Rochester,N.Y.
196	Li Shu-yuen	F	1940	Medicine	Deceased
197	Hu Pin-hsiu	F	1940	Medicine	M. (Chengtu)
198	Liu Yün-ru	F	1940	Medicine	M. (Chengtu)
199	Ho Djung-wen	M	1940	Medicine	M. (Wen-Chiang)
200	Shen Djo-she	M	1940	Medicine	M. (Chengtu)
201	Lo Kwei-hsi	M	1940	Medicine	Deceased
202	Lan Gün -hsiang	M	1940	Medicine	G. (Long-chong)
203	Wu Deh-chen	M	1940	Medicine	M. (Chengtu)
204	Djang Yin-Chien	M	1940	Medicine	G. (Sui-Lin)
205	Ho Dsen-fu	M	1940	Medicine	G. (Sui-Yuan)
206	Dzen Dsi-yao)	M	1940	Medicine	M. (Chengtu)
207	Lu Tang-ngan	M	1940	Medicine	M. (Nea-Chiang)
208	Dju Hsin-tien	M	1940	Medicine	M. (Chengtu) Dentistry WCUU
209	Chui Dsen-wen	M	1940	Medicine	G. (Suifu)
210	Li Sung	M	1940	Medicine	M. (Chungking)
211	Go Dsen-hwa	F	1940	Medicine	M. (Kwei-Min)
212	Wang Chiao-djang	F	1940	Dentistry	M. (Chengtu)
213	Wang Yün-kwang	M	1940	Dentistry	G. (Kweiyan)
214	Djang Er-tsang2	M	1940	Dentistry	G. (Sian)
215	Fong Chong-[illegible]in	M	1940	Dentistry	P. (Chengtu)
216	Sung Min-yuan	M	1940	Dentistry	P. (Chengtu)
217	Chang Gwang-pu	M	1940	Dentistry	M. (Chengtu)
218	Hu Yan-bin	M	1940	Dentistry	M. (Chengtu)
219	Li Gin-yang	M	1941	Medicine	G. (Chengtu)
220	Li Dsi-hsin	M	1941	Medicine	M. (Chengtu)
221	Wang Chen-ngen	M	1941	Medicine	M. (Chengtu)
222	Yang Gin-fei	M.	1941	Medicine	M. (Chengtu)
223	Wu Yü-pin	M	1941	Medicine	G. (Ho-Chwan)
224	Lin Chang-hwa	M	1941	Medicine	G. (Lang-Chung)
225	Djang Pu-chen	M.	1941	Medicine	G. (Lan-Pu)
226	Hsü Gin-shen	M	1941	Medicine	M. (Yuan-Hsien)
227	Djang Gin-yuen	M	1941	Medicine	? ?
228	Ho Djung-fu	M	1941	Medicine	M. (Chengtu)
229	Wang Gwei-shen	M	1941	Medicine	M. (Chengtu)
230	Wang Wen-li	M	1941	Medicine	M. (Chengtu)

#	Name	Sex	Year	Course	Present occupation
231	Liu Chen-dsi	M	1941	Medicine	M. (Chengtu)
232	Yü-Da-kwei	M	1941	Medicine	G. (Deh-yang)
233	Liao Chung-kwei	M	1941	Medicine	M. (Chengtu)
234	Wang Yoh-hwa	F	1941	Medicine	M. (Chengtu)
235	Li Peng-min	F	1941	Medicine	M. (Chengtu)
236	Lo Deh-fen	F	1941	Medicine	M. (Chengtu)
237	Liang Shao-ren	M	1941	Dentistry	G. (Wenkiang, Sze)
238	Liu Tsen-hen	M	1941	Dentistry	M. (Chengtu)
239	Djoh Dju	M	1941	Dentistry	G. (Kunming)
240	Wu Ting-chuin	M	1941	Dentistry	G. (Lanchow)
241	Liu Chang-yuin	M	1941	Dentistry	? (sick)
242	Lien Swei-hwa	M	1941	Dentistry	M. (Chengtu)
243	Li Hsio-hsiang	M	1941	Dentistry	M. (Chengtu)
244	Wang Min-fan	M	1941	Dentistry	M. (Chengtu)
245	Yu Ih-gai	M	1941	Dentistry	? ?
246	Mo Dsen-hsi	M	1941	Dentistry	G. (Chungking)
247	Djang Gwang-pu	M	1941	Dentistry	M. (Chengtu)
248	Kohn, Kalman	M	1941	Dentistry	M. (Chengtu)
249	Den Kwang-ih	F	1941	Dentistry	M. (Chengtu)
250	Gan Tien-yui	M	1942	Medicine	M. (Chengtu)
251	Fu Gin-shang	F	1942	Medicine	G. (Yuan-chung)
252	Dju Ting-liang	M	1942	Medicine	M. (Chengtu)
253	Hwang Deh-djang	M	1942	Medicine	G. (Kwan-Hsien)
254	Yang Yün-shu	F	1942	Medicine	G. (Chengtu)
255	Hu Shang-yung	M	1942	Medicine	G. (Gen-Yang)
256	Djang Gwang-ru	M	1942	Medicine	M. (Chengtu)
257	Dsen Wen-ging	M	1942	Medicine	G. (Hsia-Gin)
258	Nio Beh-shung	M	1942	Medicine	M. (Chengtu)
259	Liu Gin-ko	M	1942	Medicine	M. (Chengtu)
260	Djang Hsiang-gi	M	1942	Medicine	P. (Chengtu)
261	Ran Swei-tu	M	1942	Medicine	M. (Chengtu)
262	Djang Yün-han	M.	1942	Medicine	G. (Chengtu)
263	Tang Pei-chin	M.	1942	Medicine	G. (Chengtu)
264	Li Bao-hsin	F	1942	Medicine	P. (Beh-Chie-Hsien)
265	Nien Ren-hwa	M	1942	Medicine	G. (Chungking)
266	Dzen Cho-sen	F	1942	Medicine	G. (Chungking)
267	Wu Dsi-san	M	1942	Medicine	G. (Chungking)
268	Ma Gün-Mu	M	1942	Medicine	G. (Chengtu)
269	Hsü Ih-dsi	M	1942	Medicine	M. (Chengtu)
270	Djang Djung-yang	M	1942	Medicine	G. (Kwan-Hsien)
271	Shan Sao-chien	M	1942	Medicine	G. (Chengtu)
272	Lu Min	F	1942	Medicine	G. (Kangting)
273	Wang Suen-chin	M	1942	Dentistry	M. (Chengtu)
274	Liu Chen-lu	M	1942	Dentistry	?
275	Djan Sho-li	F	1942	Dentistry	G. (Lanchow)
276	Wang Beh-lin	M	1942	Dentistry	G. (Kweilin)
277	Lo Tsung-lai	M	1942	Dentistry	G. (Lanchow)
278	Dju Hsi-tao	M	1942	Dentistry	M. (Chengtu)
279	Yeh Bang-liang	M	1943	Medicine	G. (Chungking)
280	Yoh Tin-ben	F	1943	Medicine	G. (Chengtu)
281	Dsen Chen-fu	M	1943	Medicine	Sick (Pul.T.B.)
282	Dai Hen-fang	F	1943	Medicine	G. (Tsü Fei)
283	Li Hwei-dju	M	1943	Medicine	G. (Chang-Sie)
284	Pen Min-chuen	M	1943	Medicine	G. (Chengtu)
285	Giang Dsi-yü	M	1943	Medicine	G. (Wenkiang)
286	Ho Chuen-yün	F	1943	Medicine	M. (Chengtu
287	Ren Chung-bi	F	1943	Medicine	Sick (Pul.T.B.)
288	Djang Tsao-len	M	1943	Medicine	Sick (Pul.T.B.
289	Lo Wen-bin	M	1943	Medicine	G. (Chungiang)

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	Name	Sex	Year	Course	Present Occupation
290	Ho Gwei-li	M	1943	Medicine	G. (Kaingting)
291	Shen Gi-gao	M	1943	Medicine	Sick (Pul.T.B.)
292	Li Chang-lin	M	1943	Medicine	M. (Chengtu)
293	Din Yün-teh	M	1943	Medicine	G. (Kweiyang)
294	Go Pin	M	1943	Medicine	G. (Kaingting)
295	Ma Swei-dsen	M	1943	Medicine	M. (Chengtu)
296	Giang Dsen-djung	M	1943	Medicine	G. (Chungking)
297	Chien Wei-shuen	F	1943	Medicine	G. (Chungking)
298	Shan Yiu-len	M	1943	Medicine	M. (Chengtu)
299	Hwang Ho-fen	F	1943	Dentistry	G. (Kiating) ?
300	Hwang Da-bin	M	1943	Dentistry	G. Kwangsi
301	Hsiung Da-chang	M	1943	Dentistry	G. (Anshun, Kweichow)
302	Hsieh Chung-da	M	1943	Dentistry	G. (Hunan)
303	Den Shu-kao	M	1943	Dentistry	G. (Sikang)
304	Chang Ning-sen	M	1943	Dentistry	Lost
305	Wei Chi-hsiang	M	1943	Dentistry	P. (Chengtu)
306 396	Lu Min-deh	M	1943	Dentistry	?
307 397	Liao Chen-gin	M	1943	Dentistry	M. (Chengtu)

Medical	215	(Women 40)
Dental	98	(Women 15)

Chengtu
October 1943

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To Dr Crawford from T.A.

A Brief and Preliminary Report on the Work of the West China Union University Hospital

March 15 to August 31, 1944 **1944**

Changes in Hospital Staff.

Dr. A. E. Best resigned as Superintendent on March 15, 1944. Dr. S. H. Liljestrand, Dr. Wallace Crawford, Dr. E. B. Struthers and Dr. Jessie Parfit returned to America on furlough. The nursing supervisor, Miss Gertrude Pao, resigned and went on a government mission to the United States. The following are among the important members that have been added during the period under review:- Dr. T. A. Li, the Superintendent; Dr. Stephen Yang, the Vice-Superintendent; Mr. Stanley Wang, the Business Manager; Mr. Stephen Wang, the Secretary and Custodian of Medical Records; Dr. P. J. Laube, Visiting Surgeon from the Cheeloo University; Dr. F. Fisher, Physician from the Methodist Episcopal Mission; Miss Wang Loh-loh, the Nursing Supervisor; Dr. Jean Chiang, Physician in Charge of the Child Health Clinic; Miss W. Y. Fang and Miss K. H. Hou, both trained Dietitians.

Provision of Hospital Space for the A.A.F. Station Hospital.

At the request of the A.A.F., the Hospital provided enough rooms for 140 beds, a machine shop, a malaria research laboratory and a garage for the use of its Station Hospital in Chengtu. The cooperation with the latter has been satisfactory. In return, the A.A.F. paid a rental to the Hospital.

Building Alternations.

Because of the provision of space to the A.A.F., some alternations and additions of the buildings were made. These include (1) construction of a roofed porch at the new entrance to the Hospital, (2) partition in the O.P.D. and Pharmacy, (3) construction or remodelling of four septic tanks, (4) construction of a diet kitchen, (5) completion of the delouser, and (6) flooring of the upper flats of the water tower. The last item approximately costed NC$400,000, of which $250,000 was contributed by the China Medical Board with the understanding that the W.U.M.C. School of Nursing uses the additional rooms till the end of war without rentals.

Additional Equipments and Supplies.

Considerable amount of equipments and supplies have recently been purchased including blankets, cotton quilts, drugs, beds, stools, chairs, nursing supplies, surgical instruments, etc. Two small laboratories have been added to the wards.

Medical Services.

There has been an average of about 120 out-patients daily; the average number of in-patients is about 70, the number being on a steady increase.

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A special patient's diet kitchen has been established with two well-trained dietitians in charge in order to improve the patient's diet.

Subsequent to the departure of Dr. Jessie Parfit, the Child Health Clinic was discontinued. Effort is being made to re-open it soon with Dr. Jean Chiang in charge.

Hospital Finance.

Because of the high cost of living and the large sums of money required for building alternations and additional equipments, the hospital expenditure has been large. The A.A.F. rental, which has been majorly used for remodellings and additional equipments, has been helpful. The hospital budget has not suffered a deficit.

Teaching Functions.

The hospital has been providing facilities for practical work for practical work for the medical and dental students of the West China Union University and the Cheeloo University. Six technicians of the Szechuen Provincial Government have been studying in the hospital clinical laboratory. Two nursing schools are utilizing the hospital facilities for instruction. The first is the Jen Chi School of Nursing which has been sending about ten pupil nurses at a time to get practical training in obstetrics and gynecology. The second is the P.U.M.C. School of Nursing.

The P.U.M.C. School of Nursing has been re-opened in this Hospital about a year ago. The faculty consists of about 12 full time well-trained nurses. They are responsible for the nursing service of the Hospital. The first class of students was admitted a year ago with an enrollment of about 20 students. A second class is being admitted this September. It is gratifying to record that the nursing service rendered has been of high quality and highly appreciated by both the patients and the hospital staff.

Problems and Future.

It is probably needless to state that many war-time problems are constantly facing us; many of these are hard to solve. In order to provide more teaching facilities and to secure better income to maintain the Hospital, plan is being made to increase the hospital capacity to the maximum of 130 beds with the space now available. There is indication that there shall be enough in-patients; the difficulty lies in that the hospital has not been able to secure enough nurses. In order to enlist the latter, the increase of subsidy seems to be necessary, since they are comparatively underpaid in this Hospital.

The operation of a new hospital at this critical time is an added difficulty. Thanks to the General Superintendent, Dr. E. C. Wilford, for his guidance and support, as well as to the Hospital staff for their devotion and cooperation. most of these difficulties have been overcome. Although war has its uncertainties, the Hospital is enjoying a steady progress in its important task to provide teaching facilities and to render valuable services to mankind.

Respectfully submitted, 1944

Li Ting-an, M.D., Dr.P.H.
Superintendent

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trained dietitians in charge in order to improve the hospital's diet.

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DC. team charge in charge.

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which has been sending about ten pupils yearly to a five of two years
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School of Nursing.

The U.C.M. School of Nursing has been re-opened in this hospital
about a year ago. The faculty consists of about 15 full time well-
trained nurses. They are responsible for the nursing services, the
hospital. The first class of students now admitted a year ago in
entrollment of about 25 students. A second class is being admitted this
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dered has been of high quality and highly appreciated by both the
patients and the hospital staff.

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If is properly needless to state that many new-it e proplems are coun-
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hospital, plan is being made to increase the present capacity of the
maximum of 150 beds with the above mentioned. There is indication
that there shall be enough in-patients: the difficulty lies in that the
hospital has not been able to secure enough nurses. In order to enlarge
the latter, the increase of supply needs to be necessary, other steps
are comparatively urgently in this hospital.

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qualify. Thanks to the General Superintendent, Mr. E. C. Millard,
for his guidance and support, as well as of the hospital staff in
friendly relation and cooperation. Most of these difficulties have need
overcome. Although new and efficient hospital is enjoy-
ing a prosperous condition at present, there is important fact-
ors of problems to meet.

Affiliated with Yenching University
Received, July 19, 1946
U.S.C.U.J.

DENTAL EDUCATION IN POSTWAR CHINA

R. Gordon Agnew

B.A., M.Sc., L.D.S., D.D.S., Ph.D., F.I.C.D.

Acting-Dean of Dentistry and Professor of Pathology,
West China Union University; Head of Department
of Oral Histology and Pathology; Head of
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in Dentistry, College of Medicine and
Dentistry, W.C.U.U.

Published by
National Dental Health Board of the Ministry of Health,
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DENTAL EDUCATION IN POSTWAR CHINA

a) INTRODUCTION.

Education in the science and art of Dentistry has had a relatively short history in China, little over a quarter of a century. It was inaugurated shortly after the Revolution; had its early development in the turbulent years which saw the unification of China; in common with all educational enterprises it endured the upheaval, disruption and handicaps of the eight year war with Japan; and now, again in common with all higher education movements, it faces the serious, yet immensely stimulating problems of the reconstruction period in this great country.

During this quarter of a century of pioneering, of slow growth and development, the achievements of Dentistry, while not dramatic or startling, have been such as to furnish convincing proof, to the leaders of the country and to that great and constantly increasing group of citizens who are keenly and intelligently aware of the inevitable future needs of China, that the field of oral disease, its complex etioliogy, its startling prevalence amongst all classes of society, its profound influences upon the health and well-being of the people and its highly exacting demands in therapy and prevention, constitute a national public health problem of major importance, and a field of higher education which merits most serious consideration in postwar educational planning and development.

It would be idle to suppose that widespread recognition is now being afforded this, one of the youngest of the professions in China, or to assume that the fundamental relation of dental and oral disease, therapy and prevention to the national wellbeing has already earned for Dentistry a firmly established place in health and educational councils throughout the country. It must be pointed out that Dentistry, as an organized profession, is relatively young even in those countries in which it has now achieved the greatest development. In America, for example, its history covers little more than a century. The centenary celebration of the

founding of the first College of Dentistry took place in 1940. Its history as a scientific and learned profession is likewise short in Europe, in such countries as prewar Germany and Austria where its growth and status have been most significant.

b) THE GROWTH OF DENTISTRY AS A PROFESSION- In view of the paucity of real understanding of the nature, scope and future of Dentistry, and especially in view of the frequent misconceptions of its relationships with its sister profession, Medicine, it is instructive to recall the early status of these callings, and their emergence into their present fields of usefulness as components of the health services. The historically inclined will readily recall the empiricism and the relative crudity and immaturity of both medical and dental diagnosis and therapy which characterized these services in the distant past. The era in which Surgery was the special privilege of the barber, and Dentistry a refinement of the goldsmith's art is not a particularly brilliant one (Only in 1743 was the surgeon finally separated from the barber in Europe). The discovery of the microscope and its epoch-making revelations which led to the concepts of sepsis and antisepsis revolutionized the practice of Medicine, and for a considerable time its effects were more directly and obviously felt in Medicine than in Dentistry. Emphases in Dentistry were still dominantly technical and prosthetic until the time of John Hunter, (1728 - 1793), when following his monumental publication in 1771 a new realization of the essentially biological nature of the problem of oral disease led to the slow revolution within Dentistry which has gained yearly in momentum until today the modern scientific nature of the profession bears little resemblance to it is prototype of the 18th. and 19th. centuries. The early stages of this metamorphosis, however, were slow. Before the turn of the century funds and facilities for research in Medicine far exceeded those available in Dentistry and the younger profession, except in technical progress, lagged markedly behind. Moreover, the conception current among many health workers at that time, that Dentistry could be categorized and organized as an offshoot or adjunct to Medicine, led to much retardation in the application of new knowledge to the problem of mouth disease, and restricted not

only the funds requisite for scientific research but the appeal, to personnel of high qualifications, inherent in the study and practice of Dentistry.

Within recent decades, however, the situation has changed with almost startling rapidity and thoroughness. In 1910 Sir William Hunter opened the eyes of the dental and medical professions to the profound effects upon health of oral sepsis. Now in United States, in Canada, and in most of Europe, Dentistry has been accorded a high position among the health sciences, and is assuming its logical position among the learned professions. Educationally, it has made great streat strides in recent years. In many European countries it has become a graduate course following Medicine as a prerequisite. In United States, and in Canada, and elsewhere, it ranks with Medicine as among the longest, most exacting, and, incidentally, most expensive courses open to the undergraduate. Requirements, both prerequisite and curricular, have steadily increased, keeping pace with the striking developments of the various sciences contributory to the training of the dentist. In recent years public recognition, as well as academic recognition of Dentistry has led to large research endowments, and has focussed the attention of outstanding scholars teachers and scientists, who have contributed largely to the present status of the dental profession.

c) EVOLUTION OF DENTAL TRAINING IN AMERICA - To illustrate the evolutionary process in dental training let us consider the past and present condition in America in this regard. Formal dental education in U.S.A. commenced in 1840 with a curriculum of six months' duration. In 1870 this was raised to two years. From 1891 to 1917 the course in most schools was three years in duration, the prerequisites rising to high school graduation. In 1917 the undergraduate course was increased to four years; and since that time the prerequisite training has been raised to two years of college training, thus making a total of six years work of university grade. Furthermore, there has, in recent years, been a sharp increase in the number of applicants for dental training who have completed a college curriculum in Arts or Science. In 1944, 29% of dental

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graduates had taken a degree before commencing their dental studies, and 49% had taken more than the minimum predental training. A study of the above figures indicates clearly the marked rise in professional standards and the quality of the students attracted to this profession.

In 1825 there were only 250 dentists in America (one dentist to 14000 people); in 1840—1200 dentists. In 1880 there was a ratio of one dentist to 8000 people; in 1900 a ratio of one to 2561 people; in 1940 one to approximately 1800 of the population. At the present time there are 39 schools of Dentistry in America practially all of which are integral units of a University. There are some 70,000 dental practitioners. In spite of these seemingly large figures it is pointed out that qualified dentists are far below the required minimum; that, in the recent conscription examinations for Army service it has been found that one of the greatest single factors leading to rejection of candidates on physical grounds was that of oral defects (20%); and that perhaps 25% of the oral disease actually prevalent in the country is being treated even under the favorable personnel conditions indicated above. Such figures, of course, cannot include or indicate the needs of the populace in the field of preventive service (In 1929 the average dentist treated little more than 400 patients yearly-see later comment on the newer emphasis upon prevention rather than therapy and replacement).

The direction of development of dental education in America is significantly indicated in the activities and statements of the Council on Dental Education of the American Dental Association. Since 1940 this Council has been working on a comprehensive study of Dental Education. In 1940 it published "Requirements for the Approval of a Dental School"; and visitation and appraisal of schools was commenced in October 1942. It is of interest to note the weighted values given to each of the divisions of the survey in order that accurate appraisal of the final rank of the school might be obtained (Administration-7; Library-7; Financial Management and Support-15; Clinical Teaching-20; Basic Science Teaching-20; Research-5; Hospital Relationship-5.

The Council urges that "all schools be identified with

approved universities or be conducted on the level of a university discipline" (of the 39 schools in USA 35 are integral units in State or privately-endowed universities; only one school remains completely detached from other institutions; and this one contemplates integration with a university).

Approved schools were classified as "approved" or "provisionally approved"; and the chief reason for the difference in listing lay in the fact of the still widespread lack of material support. Provisionally approved schools are forced to rely fundamentally on receipts from tuition, fees and clinic; and it is very obvious that such sources of income are inadequate for present-day requirements in dental education.

From the experience derived from dental educational history in other countries it would seem clear beyond controversy that dental schools must be generously and adequately supported by the society which they serve; they must operate upon the level of university discipline, connected, wherever feasible, with universities of high standards, or at least with health centres of unquestioned standing, academically and professionally.

Furthermore, in the building of the modern dental curriculum in the United States and in Canada it has been kept in mind that the dental practitioner must be qualified, by character, background and training, to be not only a skilled and scientific member of the health services, but must in addition take his place in society as an intelligent citizen and a leader in thought and civic development. Hence, efforts are made to supply, in so far as the limitations of time, demands of scientific subjects and economic possibilities will permit, such a background of general culture and social awareness as will permit the dentist to function adequately as a highly trained and educated member of society.

d) DOES CHINA NEED A HIGHLY ORGANIZED PROFESSION OF DENTISTRY? - In view of the situation as above briefly outlined it would be logical to seriously raise the question.—Does China need a highly organized profession of Dentistry? Is Dentistry to be regarded as a fundamental element in the health problem of this country; must this profession assume the responsibilities of

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a major unit in the national public health problem? This question is one which can readily be answered in view of available information from all parts of the republic.

e) DENTAL DISEASE IN CHINA—Surveys of dental and oral conditions have been made in several areas. Although no data are as yet available which might be considered to adequately express the incidence of oral disease in the country as a whole it is abundantly clear that, as in other parts of the world, the most common diseases affecting the population are dental caries and parodontal lesions (diseases of the investing tissues of the teeth). Prewar incidence of dental caries in West China approximated 45% of the adult population and up to 70% of children. Eight years of war, with resultant malnutrition and the physical and psychical damage following privation and suffering, have noticeably raised the incidence. Prior to the outbreak of war dietary changes, notably the increased consumption of refined foods and concentrated carbohydrates, had already been noted to accompany a trend toward increased dental caries (cf. urban and rural dietaries and disease incidence) which will probably constitute a factor requiring consideration in the postwar period, especially amongst the young. Parodontal disease, in one or more of its many forms, is almost universal amongst adults, and affects many children. Contributory etiological factors in this connection include both physical and chemical characters of food, widespread prevalence of dental malpositions, etc. Lesions of the oral mucosa are likewise very prevalent, varying in severity from mild forms of stomatitis to the deadly cancrum oris, which, failing early and vigorous treatment, is almost always fatal. Infections of the maxillae, ranging from dental granulomata, alveolar abscesses and cysts to extensive osteomyelitis, are encountered daily in dental clinics. Since the discovery of focal infection and the elective localization of organisms and toxins, it is obvious that untreated mouth infections must be held accountable for an incalculable amount of systemic derangement, varying from a general lowering of resistance to specific lesions affecting many organs of the body and constituting a menace, immediate or gradual, to life and health.

The serious situation outlined above is not alleviated but definitely accentuated by the existing state of affairs in which, especially in the larger cities and towns, unqualified dental "quacks" attempt, without either biological or scientifically technical training, to cope with diseases of the mouth and teeth. The consequences of this situation are that unskilled operations and gross lack of aseptic precautions lead to serious infections and constitute a menace to health. Moreover unskilled treatment leads, in many instances not only to functional inadequacy but to further breakdown of the mouth structures. Inability to carry out scientific diagnosis leads to disastrous results, as for example, the inability to diagnose malignant growths at stages which, in competent hands, are amenable to treatment and cure. Preventive measures, recognized as the paramount need of the country, are strictly impossible under such conditions.

Again, the field of the diseases of the mouth, their local significance, their profound influence upon the general health and their importance as indicators of systemic states, their alleviation, cure and prevention, constitute a specialty of such complexity, with ramifications into so many fields of biology, health sciences, metallurgy, engineering, etc., that general practitioners of medicine obviously are not in a position to cope with the needs in diagnosis, treatment or prevention. It is essential, moreover, to emphasize and to appreciate the fact that present-day procedure in the large majority of hospitals and clinics in China, where, due to lack of qualified personnel, dental service is not offered, is, of necessity, seriously inadequate because of the lack of expert oral and dental diagnosis and treatment, with the result that an incalculable amount of actual or potential disease must necessarily pass without recognition, treatment or prevention.

It is inevitable, therefore, that oral disease be recognized as a major health problem in China and that the educational and professional resources of the country be called upon without delay to cope with this situation by means of a training program and the organizatior of professional facilities adequate to the need. Obviously, in view of the enormous population of China and the paucity of qualified dental personnel, the extensive aspects of the

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national program must emphasize prevention and public oral health, while the intensive program will involve the training of large numbers of personnel as rapidly as thorough pedagogy will permi

f) PRESENT DENTAL PRACTICE IN CHINA—It is not within the scope of this presentation to discuss in detail the present status of dental services in China. Such details would include a discussion of the problem of unqualified practice, numbers and distribution of the so-called "quacks", the nature of their activities, the inadequacy of their diagnosis and treatment from every standpoint and the menace to public health inherent in their unrestricted freedom within the dental field. Also it would deal with the numbers and distribution of qualified practitioners operating in China, their distribution, etc. and the oral health problem as viewed from the standpoint of the government health agencies. For a discussion of these matters the reader is referred to an article published recently by Dr. David S.K. Dai, Secretary of the National Dental Health Board of the National Health Administration.

g) THE NATIONAL DENTAL HEALTH PROGRAM—The National Dental Health Board, to which reference has been made above, has been in existance for several years; and has formulated. a broad public oral health program of a comprehensive nature, based upon the fundamental premise of eventual state control of dental services in China, and including in its purview national and provincial measures covering ultimately the entire country. Again the organizational details of this program are not strictly pertinent to this present discussion of dental education per se; and the reader is again referred to the article by Dr. Dai and to a treatise by Dean A. W. Lindsay. (2)

The Ministry of Education and Ministry of Health of the Government of China have clearly indicated their recognition of the serious nature of the dental health problem in China and of their desire and intention to discover and to take such steps as will ensure adequate educational and professional provision for the solution of this problem.

h) OBJECTIVES OF DENTISTRY IN CHINA—Before a rational program for Dentistry can be adopted it is essential to clearly

visualize the objectives, the realization of which is desired. The training program must be, in every detail, correlated and integrated with the existing situation, with the desired ends, and with the essential fact of practicability. At first glance it might seem a relatively easy matter to catalogue the objectives of the profession of Dentistry. In actual fact, this is not easy. For many years the prosthetic and technical functions of Dentistry have been so prominently before the minds of the associated health professions, the public, and, to some extent, the dental profession itself, that it is necessary to stress the fact that Dentistry has firmly and irrevocably moved, during the past several decades, from its former emphasis upon surgical and technical skills to emphasis upon its responsibility as a specialty of Medicine in which technics, while important, cannot but play a role of minor importance. In other words, modern Dentistry is fundamentally biological in its basis and in its functions. The dentist of a quarter century ago may have achieved moderate professional success on a predominant basis of technical skill. The dentist of tomorrow cannot do so. He must be biologically trained; he must approach the problem of oral disease in precisely the manner of his medical colleague. He must be similarly grounded in the basic sciences and in the general bases of medicine and surgery. He must be competent to consider his patient as a biological entity. The consideration of the mouth and its structures apart from the rest of the human organism constitutes an absurdity intolerable in the light of modern scientific knowledge. It is only when such inescapable facts are realized that a rationale of dental training is feasible.

McCall (3) has recently proposed a listing of objectives for Dentistry, arranged in order of diminishing desirability and professional satisfaction that would seem equally applicable to post-war China as to other areas.

Objectives of Dentistry for the Future

1) *Prevention of dental disease and malocclusion*

a) Reduction of incidence where total prevention is not attained.

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2) *Early prophylactic or corrective care when disease or abnormality impends or occurs*
   a) Filling of carious teeth
   b) Treatment of periodontal conditions
   c) Treatment of malocclusion
   d) Effective therapeutic or surgical intervention in conditions having potential or actual systemic complications

3) *Replacement of individual missing teeth by:*
   a) Crowns
   b) Bridges

4) *Replacement of multiple missing teeth*
   a) Partial Dentures
   b) Full dentures

It cannot be overemphasized, that, in the above listing of objectives the most desirable, from the standpoint of the nation and of the far seeing dentist himself, is the first category—that of "Prevention of dental disease and of malocclusion". This must not be a theoretical appraisal of the dentist's functions, but must be implemented by careful training of the dentist himself and of the public. Hence the paramount need for the biological emphasis in dental training as contrasted with the dominantly technical emphasis of earlier generations.

Further, it must be noted that McCall's catalogue of objectives, based particularly upon the incidence of oral lesions in America, does not specifically refer to the early recognition and treatment of such serious conditions as osteomyelitis, cancrum oris, neoplasms, etc., which occur with such frequency in China as to constitute a health problem of significant proportions. Treatment of such lesions is classified under 2) d). Again, the oral aspects of plastic surgery will doubtless assume greater significance in the future and would merit inclusion under 4*j*.

i) TRAINING OF DENTAL PERSONNEL—In harmony with experience and development in many parts of the world, and with the particular needs of China in the postwar era it would seem therefore that the training of dental personnel for effective service must include the following minimal categories. It is not to be

expected that training of each of these groups is immediately feasible: but such training should be made available at the earliest possible time if a dental program commensurate with the existing needs is to be visualized:

a) The "dentist" group—
   1) The general practitioner
   2) The public oral health officer
   3) The professional specialist
   4) The dental teacher
   5) The state clinic director & supervisor

b) The Oral Hygienist group—1) Associated with the general practitioner or the state clinic
   2) Engaged in school or public institutional work

c) The Dental Technician — Associated with the general practitioner, the state clinic or hospital.

d) The Dental Assistant—(operating assistant or nurse)

The training of each of the above categories constitutes a separate problem of timely importance and significance. In the present treatise we shall deal specifically with the training of the "Dentist" category only.

j) THE TRAINING OF THE DENTIST

1) *Fundamental Principles*-At the outset let us again stress the fact that fundamentally the dentist is a "dental physician"; he is a medical specialist in odontology. The recoguition of this basic principle and of the professional parity of Medicine and Dentistry will, ipso facto, indicate the obvious direction to be taken in dental professional training. At this point those unfamiliar with the scope of modern dental training and the direction of medical-dental relationships may raise the question, "If the dentist is to be biologically qualified, and functioning on a professional par with his medical colleague, should not he be trained as a physician

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with subsequent training in the dental specialty?'' The answer to this question is partly academic, partly economic. Since dental disease is so widely prevalent and the need so great, if the dentist should be required to take full medical training followed by dental training, a situation would develop in which the general dental practioner would be on an academic parity not with the general medical practitioner but with the medical specialist. Economically this would automatically place him beyond the reach of the masses of the population, and he would not be able to render the extensive service required. Further, specialization in Dentistry is already inevitable in several major fields; the dental specialist would then be in the category of a ''super-specialist'' and would be still further remote from the mass needs of the population. Moreover, the investment of time and money would be so great as to discourage prospective workers in this field, thus limiting the personnel to be made available to the country at a time when such personnel is crucially needed.

From the standpoint of academic and clinical training it would also seem that the ''parallel'' system of medical and dental training is more efficient than that involving full medical preparation before specific dental training. What the dentist requires is a broad understanding of the body as a whole and of the bases of Medicine and Surgery. He needs an intelligent understanding of the various phases of the practice of Medicine, especially in closely related fields such as Eye, Ear, Nose, and Throat. He needs a thorough grasp of Physical Diagnosis and of Clinical Pathology. But he does not require drilling in the clinical applications of branches of Medicine which he will not be called upon to practise. For example, he requires no detailed experience in the technics of Obstetrics and Gynecology. Just as the physician will not need to acquire intraoral technics, so the dentist need not familiarize himself with technical procedures which do not provide him with additional fundamental understanding of body processes. Thus a logical and sane balance must be struck between the scope of training on the one hand and the demands of the community on the other.

Again at this point may be raised the proposal that, in order to supply the quantitative need of the country, why not

sacrifice quality for quantity, with the establishment of shorter courses and more simplified training? It should not require, however, much familiarity with the data already presented in this treatise, or with the dental situation in other countries to realize that a plan seeking to solve this major health problem through the lowering of standards to such a point that China's dental profession would operate upon a status inferior to that acceptable in the West would not only lower China's educational standing internationally, but would render impossible of achievement the fundamental purpose and objective of Dentistry. As already stated, it is that of seeking, through a biologically qualified body of workers the solution of a serious problem which in the scientific world is now recognized as beyond the possibility of achievement by any group of merely technically trained practitioners —— in other words the prevention of certain diseases attacking the tissues of the mouth but intimately related, in etiology and in ultimate results, with the body as a whole.

As above indicated, it is not to be expected that the quantitative needs of Dentistry will be or can be met by the dentist alone; rather that he, directing and supervising the activities of subsidiary categories of personnel, will be able to make available to the country dental services of a quality non-obtainable under lesser professional standards. (cf. articles on this phase of the subject by A.W. Lindsay and D.S.K. Dai and sections (f.g.) above.

2) *Organization of Dental Schools* - In the organization of dental training, the experience of Western countries is clear and unmistakable. Dental schools must operate on the level of a university discipline. Schools operated by private individuals or groups are undesirable from all standpoints. All schools should, if possible be integral with, or closely affiliated with, universities of good standing. Failing this, dental schools should be at least associated with high standard medical schools or ''health centres''; such association should be on a basis of acadamic parity and freedom for independent growth. When linked with university organizations, dental schools should also be, if possible, in intimate association with medical schools. Such intimate academic association would naturally involve joint academic functions in basic sciences,

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preclinical sciences and reciprocal clinical rotations. The requirements of dental and medical students are identical in the basic sciences, and so similar in the preclinial sciences that they may, with economy and advantage be taught in the same classes. Theoretically, fundamental subjects such as Anatomy, Biochemistry, Pathology, Bacteriology, Physical Diagnosis etc., might be offered to students of Dentistry in such a way as to especially stress dental applications. Practically, such distinction may lead to the mistaken idea that thorough grounding in these subjects is not essential to the dentist, with the result that abbreviated courses may ill prepare the dental student for the comprehensive understanding of body functions which will later be demanded of him.

The organization of "Colleges of Medicine and Dentistry" would seem to be a particularly desirable development, and one which is gaining favor in the West. In such a set-up there may be the closest of academic interrelation and the minimum of overlapping and duplication. Common departments simplify internal organization and promote economy. Departmental staff will include medical and dental members where appropriate. This creates understanding and cooperation. Student bodies are brought into close relationship and mutual regard, leading to future relations of a professionally satisfactory nature. Research and investigation may be organized on broad and comprehensive bases, with the "group" function so valuable in modern research.

Such intimate relationship must, however, be sufficiently flexible as to permit of independent growth and maturity of the schools. Control of the dental curriculum or scope of activities by Medicine has been historically detrimental to efficiency. Particularly opposed to modern developments in dental education is that organization in which Dentistry is structurally a department of a medical school. Under such conditions it has been repeatedly demonstrated in past years that normal growth and pedagogic adequacy is seriously impaired; and one of the most obvious lessons of the history of dental education is that the relationship with Medicine should be that of "maximum correlation and cooperation with independence of status."

The housing of medical and dental schools in one building

or in adjoining buildings is increasingly favored in the West and permits of a high degree of correlation and economy. It is of obvious advantage for advanced study in Medicine and Dentistry to be located in as intimate a relationship as possible. Dental clinical facilities should include accommodation for hospitalization, either in the dental building itself or in connection with an adjoining hospital. The latter arrangement is preferable since it favors ready consultation between dentist and physician as well as access to all diagnostic services. (In the West China Union University the bulk of the preclinical teaching in Medicine and Dentistry is given in one central building. Adjoining the building devoted to didactic work is the University Hospital, which, like the College of Medicine and Dentistry itself, is constituted of two units, a medical and a dental.)

Dental education is costly; and, from the outset it is essential to recognize, from a century of experience in other countries, that dental schools must be generously supported by the community which they seek to serve. It has already been pointed out, in reference to the appraisal of dental schools in America, that the largest single factor leading to unfitness for full approval as a class A institution is inadequacy of finance, which handicaps the institution concerned in the securing of high grade teachers in adequate numbers and fn the provision of sufficient equipment of modern type adapted to the stringent demands of modern pedagogy and research.

Academic standards, admission and promotion regulations etc., under such intimate relations as above described, are obviously similar. Due to practical identity of the courses during the early years of the curriculum, transfers from one school to the other, when carefully decided upon, are permissible up to the point of significant divergence of the two curricula, thus making possible a degree of adaptation to the aptitudes of the individual.

3) *Choice of Teaching Personnel*—It is a truism to state that the quality of any educational institution rests largely upon the capacity and character of its teachers. Great care must be selected in the choice of instructors in dental training. As has been repeatedly stressed in this article, technical skill alone is

not adequate. There must be a minimal level of scholarship maintaining the strict university level of instruction; teachers must have achieved a thoroughly scientific attitude of mind and a comprehensive grasp of the scientific bases of Dentistry. It is not be expected that all members of a dental school shall be, on the hand, skilled in pedagogy and, on the other, adapted for scientific research; but the well-balanced staff will include adequate numbers of both types, ensuring, for the student, efficient teaching and also stimulation to scientific achievement. Professional schools have, historically, been constituted of a lesser number of full time teachers and a larger number of part- time instructors. Generally speaking, there would seem to be a trend toward emphasis upon the full-time teacher where possible; such complete concentration upon the problems and opportunities of instruction and creative study obviously is productive of much finer results than in cases where the interest of the teacher is necessarily divided between the classroom and the laboratory on the one hand and private practice upon the other.

Inseparably related to the matter of teaching efficiency is, of course, the remuneration of teacher groups. The teacher has, in the past, in many parts of the world, been notoriously underremunerated in terms of his investment of time, preparation and resources, and of his actual value to his community. No teacher can be expected to give his maximum mental effort if he is beset with financial worries and the fear of economic insecurity. It is very essential that standards of pecuniary reward for teachers be commensurate with reasonable requirements for healthful and cultured living. Those responsible for the establishment of teachers' salaries must remember that, in the professions, a very real sacrifice is made by the teacher who renounces the attractions and relatively lavish returns of private practice and devotes his life to the propagation and expansion of human knowledge. Remuneration of teachers should include not only adequate provision for immediate needs but should also provide for sick benefits, retirement pensions, etc.

In addition to adequacy of financial support of teaching personnel it is especially desirable in fields such as Dentistry, where

growth and change are taking place with great rapidity, that teachers of proven merit be given opportunities for advanced study in other centres. In some instances this will take the form of organized graduate study in one institution; in others postgraduate study and observation in one or more centres: others will benefit most from the study of teaching methods and the contact with other teachers in a variety of institutions.

4) There is another aspect of professional and vocational training which demands serious and practical consideration. Vocational training, even of the most efficient nature, is not per se adequate to equip young men and women for the demands of modern society. In a report of the Planning Committee of the Associated Boards for Christian Colleges in China it is emphasized that scientific and technical training alone is not only insufficient but potentially dangerous in terms of the needs of today—Western nations "have tended to conceive of vocational training too narrowly. They have been blind to the dangers of professional skill divorced from liberal and humane objectives. This failure is in large measure the cause of our social unrest and of the cataclysm into which the whole world has now been plunged". The committee emphasizes that all vocational training must be set in the context of human needs and spiritual ends; that professional competence must stand in intimate relation to moral character. If such can be achieved much can be done "to protect China from that spirit of ruthless exploitation of nature and man and from that blind worship of power which is causing the whole world such misery today—to help China to avoid a misuse of science and technology and to develop her natural resources for the genuine welfare of her own people and of the peoples of other lands and nations." In short, liberal education must be conceived "in organic relation to professional pursuits and the business of human living—to the opportunities and responsibilities of citizenship in a free society."

Over many centuries, ancient China has vested in the teaching profession the high responsibility for the inculcation of moral virtues and ideals, without which the highest skill may be meaningless in terms of social value and worth.

5) *Length of Curriculum*—This is a problem of immediate

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significance in China. Reference has been made to the basic philosophy involved. Should dentists be given abbreviated courses and turned out in large numbers so that they themselves may quantitatively attack the problem of dental disease in China? or, should they be given comprehensively scientific training, and, fewer in number, achieve the desired result through the employment of subsidiary personnel under their expert guidance and supervision in carefully organized state clinics and health centres? Assuming that the latter course is more in harmony with modern trends in education and health service, and more conducive to the public welfare, there remains the problem as to length and content of curriculum.

A dogmatic statement as to the optimum length of training in Dentistry would be ill-advised. In harmony with the basic principle above enunciated, that training should be similar to and on a parity with that of the physician, it would seem that the six—year curriculum already approved by the Ministry of Education for Medicine would, at the present time, be most appropriate for the training of the dentist. This is also in harmony with the present development in America in which the six-year course has become the standard. This will include the basic sciences of university grade, courses in the humanities and the more strictly professional studies.

The six-year curriculum presupposes that students accepted for entrance are prepared to take work of strictly university grade. In some parts of China, particularly during the upset years of war, middle school preparation has fallen below accepted minimal standards for university entrance, with the result that the first year of college work cannot rate as beiug of strictly university level. In consequence of this situation, for example, the courses in Medicine and Dentistry of the West China Union University are organized as one year of premedical or predental work and six years of professional study, making a total of seven years study offered by the University. It is to be hoped that, in the postwar period which we are now entering, educational standards in all middle schools will be raised to a minimal level compatible with widely accepted standards of university entrance. When such is

the case, the courses refered to above may be, without loss, reduced, by the elimination of the first year of substandard work, and appropriate reorganization of the curriculum, to a maximum of six years of university study.

6) *Departmental Organization*—Departmental organization, in institutions where Medicine and Dentistry are correlated, involves two groupings—1) Those departments common to both Medicine and Dentistry; 2) Departments relating solely to dental instruction. (Departmental organization in the basic sciences, i.e., Biology, Physics, Chemistry, Mathematics, Languages, the Humanities, etc., need not be discussed in this connection). In the West China Union University tne departmental structure is as follows:

(a) Joint Medical-Dental-1) Department of Anatomy
2) Department of Physiology and Pharmacology
3) Department of Biochemistry
4) Department of Pathology
5) Department of Bacteriology
6) Department of Medicine
7) Department of Surgery
8) Department of Neuropsychiatry
9) Department of Public Health

(b) Dental Departments - 1) Odontal Morphology and Physiology
2) Oral Histology and Pathology
3) Odontology
4) Periodontology
5) Prosthodontology
6) Oral Surgery
7) Clinical Dentistry

(*Note* - (1) Under b) it would be possible, if desired, to organize Odontal Morphology and Oral Histology under the Joint Department of Anatomy; Oral Physiology under the Joint Department of Physiology and Oral Pathology under the Joint Department of Pathology. The listed organization

however, is sometimes desirable to provide closer correlation and integration of the strictly dental courses and the dental preclinical and clinical instruction.

(4) Preventive Dentistry is, in some schools organized as a separate department. In other schools, as in W.C.U.U. it constitutes a division of the Department of Clinical Dentistry; in this division the preventive teaching, already stressed in all of the earlier dental courses, is summarized and directed toward practical clinical and public health applications.

(2) The Department of Prosthodontology may logically include in its scope courses in Applied Physics, Dental Materials, General Laboratory Technology, etc.

(3) The Department of Clinical Dentistry may again with advantage be organized into the following divisions in order to secure the maximum benefits of specialized instruction and service:

a) Division of Diagnosis
b) Division of Preventive Dentistry
c) Division of Periodontia
d) Division of Odontology (frequently known as "Operative Dentistry")
e) Division of Oral Surgery
f) Divison of Prosthodontia

7) *The Curriculum in Dentistry*

1) *Introductory Note* - For purposes of ilustration, the curriculum in Dentistry of the West China Union University is here given. It must be recalled that in this University the course consists of a Freshman or Predental year and six years of the course "proper"; and that, as the quality of middle school instruction improves, it will doubtless be possible to later organize the curriculum within a total of six years of undergraduate instruction.

Further, in the study of this curriculum it must be remembered that the course in Dentistry is given in parallel with that in Medicine, and that not only the basic sciences and humanities are given in common, but the basic preclinical courses are identical.

Considering the hour schedules it may be felt that such an arrangement, while economical of departmental staff and time, yet demands more student time in some of the preclinical sciences than might be considered absolutely necessary, with the result that less hours are available for the strictly dental subjects. Reference has already been made to the possibility of offering preclinical courses designed in each case for dental students only, and to the advantages and disadvantages of such specialization. It is true that in some Western schools, less hours are devoted to biological subjects and more to subjects such a Prosthodontology; on the other hand, as previously mentioned, the directional trend in dental pedagogy is unmistakably in favor of the emphasis upon the biological. Such a trend does not indicate lack of appreciation of technical skills; but it is obvious that such skills may be acquired cumulatively, in the years following graduation, much more effectively than is the case with the more theoretical branches of dental training; whereas the latter not only is vital to modern practice but must be acquired as an undergraduate discipline.

2) *Preliminary Instruction* - It is obvious that in the basic training of the dental student Chemistry, Biology, Physics ana Mathematics must receive dominant attention. In America some authorities favor the offering of such subjects as part of the dental curriculum; others are in favor of accepting standing in these subjects as secured from any accredited college. The natural advantage of including them in the dental curriculum is that they can be taught with the special needs of the dental student in mind, whereas, when taught otherwise, industrial or other applications may be stressed. This may be particularly true of the teaching of Physics and of Organic Chemistry.

In general, there is agreement as to the desirability of requiring a period of general education corresponding to the completion of the sophomore year in college, preliminary to the commencement of strictly professional subjects. The methods of organization of the curriculum to accomplish the desired end result will vary considerably; and a certain degree of experimentation may be desirable and inevitable in China before the optimal arrangement is discovered. The American Curriculum Survey Committee

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in USA favors "placing such sciences as Biology, General Physics and perhaps Mathematics in a predental year to be taken by the student after he has completed his general education (through the sophomore year of college) and organizing a four-year course of study in Dentistry to be pursued by the student after he has completed his predental year in the university in which the dental school is located". This arrangement has been widely used with success in pre-war Europe. However much will depend upon the ultimate postwar organization of teaching in science and Arts, and upon the efficiency of instruction in the basic sciences in middle schools.

As to be non-scientific subjects requisite to preliminary training for the dentist, there cannot be unanimity as to the branches of the "humanities" to be included; but it is scarcely controversial to state that the curriculum must include a minimum study of such fields of thought as will promote a general cultural development commensurate with the obligations and opportunities of citizenship open to the professional man or woman. In the West China Union University the dental student studies Ethics (ethics being here broadly interpreted as the moral sciences, and including religious philosophy etc.), Psychology, Mental Hygiene (an elective available in the First Year proper following completion of two terms of Ethics in the Predental Year), Chinese History and Literature, English, Party Principles and Physical Education. English is inevitably stressed, since the bulk of the professional literature is still in languages other than Chinese, especially in English, and also since graduate and postgraduate work abroad is taken usually in English-speaking countries. Other fields of the humanities, such as Sociology, World History etc., are very desirable in the building of a broad cultural background; but offer difficulties as to inclusion in a curriculum already making heavy demands upon the student.

3) *Curriculum of the West China Union University*

a) Total curriculum b) Term divisions of curriculum

c) Total hour schedule (See charts)

4) *Discussion of speenimen Curriculum presented* -

Predental Year - Reference has already been made to the necessity of adjusting the curriculum to matriculation standards

WEST CHINA UNION UNIVERSITY

CURRICULUM OF SCHOOL OF DENTISTRY (a)

for 1945 - 1946 38 WEEKS

COURSES	Lect Hrs. F	Lect Hrs. S	Lab. F	Lab. S
FRESHMAN YEAR				
Biology	2	2	6	6
Inorganic Chemistry	3	3	6	6
Mathematics	3	3		
Chinese	3	3		
English Grammar	3	3		
English Reader	3	3		
Ethics	2	2		
Party Principles	1	1		
Physical Education	1	1		
SECOND YEAR				
Biochemistry	3	3	6	4
Anatomy (gross)	1	1	9	9
Osteology	1	1		
Histology	2		6	
Embryology		2		2
English	2	2		
Technical English (Med & Dent)	2	2		
Neuro-Anatomy		2		2
Physical Education	1	1		
FOURTH YEAR				
Medicine	4	2		
Prosthodontology (D. Mats)	1	2	2	4
Applied Oral Anatomy	2	3		2
Surgery	3		1	
Comparative Oral Anatomy		2		1
Oral Histology	3		5	
Oral Physiology		3		2
Neuro-Psychiatry	2		1	
Oral Pathology		3		5
Preventive Dentistry	2	4		
Dermatology	1			
Odontology		1		3
Special Lects; Demonstration				
Clinical Pathological Conference		1		
SIXTH YEAR				
Interneship Rotations				
a) Dentistry: Diagnosis				
Oral Surgery				
Odontology				
Prosthodontology				
Periodontology				
Preventive Dentistry				
b) Medicine: Medicine				
Surgery				
E.N.T.				

COURSES	Lect Hrs. F	Lect Hrs. S	Lab. F	Lab. S
FIRST YEAR				
Physical Chemistry	5		3	
Organic Chemis ry		3		3
Comparative Anatomy	2		6	
Vertebrate Zoology		2		6
Physics	3	4	4	3
Psychology	2	2		
Technical English (Dental)	1	1		
Chinese	3	3		
Ethics	2	2		
English	3	3		
Techical Drawing			1	1
Mental Hygiene	2	2		
Physical Education	1	1		
THIRD YEAR				
Physiology	5		9	
Bacteriology	3		6	
Odontal Morphology	1	1	2	2
English	2	2		
Technical English	2	2		
Pharmacy	2			
Pharmacology		5		6
Pathology		3		6
Clinical Pathology		2		4
Physical Diagnosis		1		3
Physical Education	1	1		
FIFTH YEAR				
Odontology	1	1	3	3
Prosthodontology-A	2	1	4	2
Prosthodontology-B	1	1	3	3
Applied Oral Anatomy	2	2	1	2
Oral Physiology	2	2	1	1
Parodontology	2		2	
Oral Clinical Pathology	1			1
Pedodontology	1			
Orthodontology		1		
Public Health	5			
Dental History		1		
Preventive Dentistry (& P.O.H.)	2	3		
Oral Surg. & Med.:				
1) Principles Surg.	1	1		
2) Fractures	1			
3) Tumors	1			
4) Root Canal Thera.		1		
5) Diagnosis	1			
6) Exodontology	2			
7) X-Ray		1		
8) Anesthesia	1			
9) Oral Mat. Thera.	1			
10) E.N.T.		2		
Dentral Practice Management		1		
Dental Ethics		1		
Dental Jurisprudence		1		
Clinical Clerkship				
Special Lects; Demonstrations				
C P.C.	1	1		

F—— Fall term
S——Spring term
C.P.C.—— Clinical Pathological Conference
E.N.T.——Eye, Ear, Nose, and Throat

Fall Term-circa 17 weeks; spring term circa 15 weeks

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WEST CHINA UNION UNIVERSITY
CURRICULUM OF SCHOOL OF DENTISTRY (b)
for 1945 - 1946

FALL TERM COURSES	*Lect. Hrs.*	*Lab.*	*SPRING TERM COURSES*	*Lect. Hrs.*	*Lab.*
FRESHMAN YEAR					
Biology	2	6	* Biology	2	6
Inorganic Chemistry	3	6	* Inorganic Chemistry	3	6
Mathematics	3		* Mathematics	3	
Chinese	3		* Chinese	3	
Engtish Grammar	3		* English Grgmmar	3	
English Reader	3		* English Reader	3	
Ethics	2		* Ethics	2	
Party Principles	1		* Party Principles	1	
Physical Education	1		* Physical Education	1	
FIRST YEAR					
Physical Chemistry	5	3	* Organic Chemistry	3	3
Comparative Anatomy	2	6	* Vertebrate Zoology	2	6
Physics	3	4	* Physics	4	3
Psyahology	2		* Psychology	2	
Technical English (Dental)	1		* Technical English (Dental)	1	
Chinese	3		* Chinese	3	
Ethics	2		* Ethics	2	
Technical Drawing		1	* Technical Drawing		1
Mental Hygience	2		* Mental Hygiene	2	
Physical Education	1		* Physical Education	1	
English	3		* English	3	
SECOND YEAR					
Biochemistry	3	6	* Biochemistry	3	4
Anatomy & Osteology	2	9	* Anatomy & Osteology	2	9
Histology	2	6	* Embryology	2	2
English	2		* English	2	
Technical English (Med & Dent)	2		* Technical English (Med & Dent)	2	
			* Neuro-Anatomy	2	2
Physical Education	1		* Physical Education	1	
THIRD YEAR					
Physiology	5	9	* Pathology	3	6
Pharmacy	2		* Pharmacology	5	6
Bacteriology	3	6	* Clinical Pathology	2	4
Odonral Morphology	1	2	* Odontal Morphology	1	2
English	2		* English	2	
Technical English	2		* Technical English	2	
Physical Education	1		* Physical Diagnosis	1	3
			* Physical Education	1	

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CURRICULUM OF SCHOOL OF DENTISTRY

for 1945 - 1946 (ctd.)

FALL TERM COURSES	*Lect. Hrs.*	*Lab.*	*SPRING TERM COURSES*	*Lect. Hrs.*	*Lab.*
			FOURTH YEAR		
Medicine	4		* Medicine	2	
Prosthodontology (D. Mats.)	1	2	* Prosthodontology (D. Mats.)	2	4
Applied Oral Anatomy	2		* Applied Oral Anatomy	3	2
Surgery	3	1	* Comparative Oral Anatomy	2	1
Oral Histology	3	5	* Oral Physiology	3	2
Neuro-Psychiatry	2	1	* Oral Pathology	3	5
Preventive Dentistry	2		* Preventive Dentistry	4	
Dermatology	1		* Odontology	1	3
Special Lects; Demonstrations			* Special Lects; * Demonstrations * Clinical Pathological * Conference	1	
			FIFTH YEAR		
Odontology	1	3	* Odontology	1	3
Prosthodontology-A	2	4	* Prosthodontology-A	1	2
Prosthodontology-B	1	3	* Prosthodontology-B	1	3
Applied Oral Anatomy	2	1	* Applied Oral Anatomy	2	2
Oral Physiology	2	1	* Oral Physiology	2	1
Parodontology	3	2	* Oral Clinical * Pathology	1	1
Pedodontology	1		* Orthodontology	1	
Public Health	5		* Dental History	1	
Preventive Dentistry (& P.O.H.)	2		* Preventive Dentistry * (incl. P.O.H.)	3	
Oral Surg. and Med			* Oral Surg. Med.		
1) Principles Surg.	1		* 1) Principles Surg.	1	
2) Fractures	1		* 4) Root Canal Thera.	1	
3) Tumors	1		* 5) Diagnosis	1	
5) Diagnosis	1		* 7) X-Ray	1	
6) Exodontology	2		* 10) E.N.T.	2	
8) Anesthesia	1		* Dentral Practice * Management		
9) Oral Mat. Thera.	1		* Dental Ethics	1	
Special Lects.; Demonstrations			* Dental Jurisprudence	1	
C.P.C.	1		* Clinical Clerkship		
			* Special Lects. Demonstrations		
			C.P.C.	1	

SIXTH YEAR

Interneship
Rotations

a) *Deutistry :* Diagnosis
Oral Surgery
Odontology
Prosthodontology
Periodontology
Preventive Dentistry

b) *Medicine :* Medicine
Surgery
E.N.T.

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CURRICULUM OF SCHOOL OF DENTISTRY (c)

Total HOUR Schedule

WEST CHINA UNION UNIVERSITY

1945 - 1946

COURSES	HOURS		
	Lect. Hrs.	Lab.	Total
Biology	64	192	256
Inorganic Chemistry	96	192	288
Mathematics	96		96
Chinese	96		96
English	416		416
Ethics	64		
	(+elective 64)		64(128)
Party Principles	32		32
Physical Education	128		128
Physical Chemistry	85	51	136
Organic Chemistry	45	45	90
Comparative Anatomy	34	102	136
Vertebrate Zoology	30	90	120
Physics	111	113	224
Psychology	64		64
Technical English	160		160
Technical Drawing		32	32
Mental Hygiene	64		64
Biochemistry	96	162	258
Anatomy (gross)	32	288	320
Osteology	32		32
Histology	34	102	136
Embryology	30	30	60
Neuro-Anatomy	30	30	60
Physiology	85	153	238
Bacteriology	51	102	153
Odontal Morphology	32	64	96
Pharmacy	34		34
Pharmacology	75	90	165
Pathology	45	90	135
Clinical Pathology	30	60	90
Physical Diagnosis	15	45	60
Medicine	98		98
Prosthodontology(D.Mats)	47	94	141
Applied Oral Anatomy	143	77	220
Clinical Clerkship			
Special Lect; Demonstrations C.P.C.	47		47

COURSES	HOURS		
	Lect. Hrs.	Lab.	Total
Surgery	51	17	68
Comparative Oral Anatomy	30	15	45
Oral Histology	51	85	136
Oral Physiology	64	62	126
Neuro-Psychiatry	34	17	51
Oral Pathology	45	75	120
Preventive Dentistry	173		173
Dermatology	17		17
Odontology	47	143	190
Prosthodontology-A	49	98	147
Prosthodontology-B	32	96	128
Parodontology	34	34	68
Oral Clinical Pathology	15	15	30
Pedodontology	17		17
Orthodontology	30		30
Public Health	85		85
Dental History	15		15
Oral Surg. & Med.:			
1) Principles Surg.	32		32
2) Fractures	17		17
3) Tumors	17		17
4) Root Canal Thera.	15		15
5) Diagnosis	32		32
6) Exodontology	34		34
7) X-Ray	15		15
8) Anesthesia	17		17
9) Oral Mat. Thera.	17		17
10) E.N.T.	30		30
Dental Practice Management	15		15
Dental Ethics	15		15
Dental Jurisprudence	15		15

Interne Year	*Clinic Hours*	*Clin. Lab Hours*
Oral Diagnosis and Clerkship	180	
Parodontal Surgery	180	
Oral Surgery	360	
Prosthodontal Surgery	180	180
Odontal Surgery	360	180
Preventive Dentistry (including Dental Pediatrics)	180	
General Medicine and Surgery	120	
Eye, Ear Nose & Throat	60	

which, especially during the war years, are seriously below generally accepted minimal standards for university entrance. Especially in the sciences and in English is such adjustment essential. It is anticipated that marked improvement in middle school standards will take place during the reconstruction period. There is, of course, a definite sequence in scientific courses. *Biology* (General) of the Predental Year is followed, in the First Year by Comparative Anatomy and Vertebrate Zoology, leading to Human Anatomy in the Second Year. *General Chemistry* (Inorganic) of the Predental Year is followed, by Physical Chemistry and Organic Chemistry of the First Year, leading to Biochemistry of the Second Year. *Mathematics* is obviously basic to the other sciences. Religious andmoral instruction may conveniently be included in the course in *Ethics*.

First Year - The principles of *Physics* are of vital importance in the training of the dentist in almost every phase of his and work, both biological and restorative. Some schools have organized, in addition to the basic work in Physics, an advanced course in Applied Physics, adapted to the peculiar needs of dental practice. This is of definite value in placing restorative services on a strictly scientific basis; and it is sometimes given toward the end of the curriculum, correlating many principles acquired during the earlier years of the course. Thus it will be seen that instruction in Physics is essential not only to enable the student to understand the principles involved in the various subjects of the curriculum; but to enable him to visnalize the technical aspects of his clinical and laboratory work from the standpoint of the practical physicist. Further, such a foundation is of the highest value in research and original investigation.

Technical English (Dental) may be usefully introduced at this time. The student has, as yet, had no direct contact with Dentistry as such, except for the Orientation lectures and demonstrations which should be given to the entering class. The study, ai this time, of Dental Technical English not only aids the general study of English but gives the student a vocabulary which opens the way for a gradual understanding of the professional career which he has chosen.

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Technical Drawing has, in recent years, been widely introduced in the early years of the course. It sharpens the student's powers of observation; develops his capacity for visualizing and reproducing design and structure; and; if skillfully taught, may develop his aesthetic faculties.

The study of normal and abnormal *psychology* is of such obvious value to the dentist or physician as to require little explanation of its inclusion in the curriculum. *Chinese* studies are continued in the first year so that the student may have a comprehensive grasp of the cultural heritage of ancient and modern China. *Physical Education* is a recognized essential of modern University training.

Second Yeary - Anatomy - There is no unanimity in dental schools as to the optimum amount of time to be devoted to this vital subject, nor as to the relative time for classroom instruction and for dissection. More time is usually devoted to Anatomy than to any other basic subject. Where Anatomy is taught to dental students alone and not in combined classes with medical students there is diversity of opinion as to the extent of dissection required. Dissection of head, neck, thorax and abdomen is generally required. In some cases the brain is dissected; in others not. Most schools require dissection of at least one extremity. In some schools the entire body is dissected. Where classes are jointly taken by Medical and Dental students the content of the course is, naturally, identical. Where feasible, it is desirable to follow a sequence from the "general and introductory to the specific, and finally to the detailed", that is, from an extremity, to the thorax and abdomen, and finally to the head and neck. The Curriculum Survey Committee of U.S.A. sums up the objectives of a course in Anatomy as follow:

1) To obtain (a) a general knowledge of the anatomy of the human body; (b) a specific knowledge of the anatomy of the respiratory, digestive, circulatory, excretory and endocrine systems, and (c) a detailed knowledge of the anatomy of the face, jaws and structures directly associated with them.
2) To observe and understand the relationship of structure and function in the human body.
3) To appreciate the importance of certain biological principles involved in the normal structure and function of the human body.

Biochemistry has, in recent years, enormously increased in importance in the dental curriculum. If the dictum of outstanding leaders in Dentistry is accepted, namely that the dentist of the future must be trained to prevent disease and to maintain health rather than to dominantly repair anc cure, it is obvious that he must be thoroughly conversant with the field of physiological chemistry and capable of applying it, with understanding, to the problems of oral disease Hence this subject occupies deservedly a considerable amount of time in the modern curriculum. Again, this subject may be taught in joint classes with medical students, or may be given separately for dental students. In the latter case, oral clinical applications may be stressed, and, through skilful organization of the course, total hour requirements might be reduced without eliminating material of fundamental nature.

The other components of the Course in Anatomy, *Osteology*, *Histology* and *Embroyology* follow the basic principles as outlined and require no special discussion.

At this point the course in *English* may be usefully supplemented with a course in *Technical English*, comprising general terms in common use in the medical sciences and equally necessary to medical and dental students.

Third Year - As in the case of Biochemistry, the practice of modern Dental Medicine and Surgery demands a thorough understanding of *General Physiology*. Such training is basic to the study of Pharmacology and of Pathology, and is essential preparation for subsequent training in Diagnosis, Anesthesia, and many aspects of clinical practice. Newer concepts of the etiology of oral disease depend for their proper understanding upon a practical grasp of modern Physiology and of the behaviour of living tissues. Moreover, the dentist needs such training to equip him for effective collaboration with medical colleagues, and for his own personal life. In some dental schools this course is organized in conjunction with the training of medical students; in others it is especially

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adapted for the needs of dental students alone. Where taken jointly the course should be so arranged as to adequately present oral relationships and dental applications. On no account should the course in Physiology consist of class-work and demonstrations alone. Practical laboratory work is essential to effective teaching.

Bacteriology must be taught with thoroughness and with sufficient detail to enable the student to understand the chemical and biological mechanisms of the production of disease by bacteria and other plant and animal parasites; also the mechanisms of defence against such attack. It is an essential background for the study of Pathology; and, since bacterial activity enters so largely into the problems of oral disease and of asepsis, it constitutes an important feature in the curriculum. If, as in W.C.U.U., the course is given in conjunction with Medicine, the study of the normal flora of the mouth and pathogenic organisms which may attack the oral tissues may be included in the joint course; or, later, in conjunction with instruction in Oral Pathology a short period may be devoted to special aspects of Oral Microbiology supplementing and building upon the foundation laid in the general course.

Pharmacology, in all of its phases, Materia Medica, Pharmacognosy, Pharmacodynamics and Pharmacodynamics and Pharmacy is valuable to the dentist. Although the applications to his later work are quantitatively less than in Medicine, the intelligent choice and use of drugs demands, on his part, familiarity with the action of drugs on vital tissues, and the merits of the pharmaceutical preparations available for his use. Moreover, the dentist is entitled and qualified to prescribe medicinal substances for diseases and hence requires thorough training in prescription writing. Finally, he must intelligently appreciate the pharmacological aspects of dental research and investigation. In some institutions, Materia Medica is taught separately from *Pharmacology*. In W.C.U.U., *Pharmacy* is taught separately inasmuch as a School of Pharmacy is an integral part of the "Health Centre" in this University, providing facilities not always available in medical and dental schools. Moreover, in the dental school of this university a short additional course in *Oral Materia Medica and Therapeutics* is given in the fifth or last preclinical year (q. v.) in which practical applications

are stressed and material acquired throughout the earlier years is correlated in preparation for the clinical year to follow.

Pathology occupies a position of extreme importance in the dental curriculum. Unless the student is well grounded in the causes and essential nature of disease, in the functional and structural changes resultant from disease and in the nature of the natural defenses of the body, he will be incompetent to correlate his previous studies with those that are to follow or to understand the nature of the processes which he will later be required to prevent, to diagnose, to cure or to repair. Pathology is a composite subject inseparably linked with gross and microscopic Anatomy and Embryology, with Physiological Chemistry and with Pharmacology. It forms the foundation for subsequent courses in Periodontia, Orthodontia, Odontology, etc. It is commonly divided into two sections, general and special, the former dealing with basic principles and processes, the latter treating of the application of these principles to the various systems or regions of the body. Pathology is usually taught, in dental schools, in two courses. The first, General Pathology, may be given in conjunction with medical training (as in the curriculum illustrated) or may be given by the dental school alone. Each arrangement has its advantages and disadvantages. When taught jointly the dental student will, from the wider fields of examples used to illustrate basic morbid processes, receive a more comprehensive picture of body disease. When taught separately, there can be a closer correlation of general principles and dental applications and the necessarily indistinct boundary between the "general" and the "special" can be treated with advantage to the student. Laboratory procedures are highly essential and adequate gross and microscopic material should be provided. The dental student should attend autopsies and should be familiar, in a general way, with autopsy diagnosis, with the methods of securing and preparing material for examination etc. The course in Oral Pathology will be discussed in connection with the courses of the Fourth Year.

Clinical Pathology - is of value and importance in the training of the dentist in China. While it is not expected that he will ordinarily conduct laboratory tests covering hematology,

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urinalysis, gastric analysis; tests of sputum, liver function, feces, cerebrospinal fluid; bacteriological and serological examinations, etc., yet, if he is to meet the demands of modern dental diagnosis, and if he is to collaborate intelligently and effectively with his medical colleagues in the systemic study of his patients he must understand the significance of the major aspects of clinical pathology. In some instances, where he finds himself in a locality in which routine diagnostic services are not available he may find it advantageous to perform certain of the tests himself. It is true that not all of the material which may be present in this course is of strictly fundamental value to the prospective dentist; and it may well be argued that, instead of the dental student taking a course identical with that given to medical students, a modified course covering routine general tests, examination of oral fluids and tissues, and special tests, such as calcium and phosphorus estimation of blood, ascorbic acid adequacy tests, bacteriologic examinations, etc., with emphasis upon oral applications, might be offered. In W.C.U.U. a short course in Oral Clinical Pathology in the Fifth Year supplements the work of the general course and emphasizes dental applications; if given alone it would lack the background of understanding afforded by the general course and would require considerable expansion.

Physical Diagnosis has, within recent years, occupied a place of increasing importance in dental training along with related studies grouped under the general head of Medicine. This is in harmony with the present-day recognition of the interrelationship of oral and systemic conditions, both from the standpoint of etiology and of end-result. There is, as yet, no general agreement among dental educators as to the content and scope of instruction. For efficiency, actual "ward work" must be made available, as well as classroom teaching and demonstrations. This is best accomplished when the dental school is in close affiliation, either with a medical school and hospital or with a health centre of high standards. As in the cases of other fundamental courses, instruction may be given in conjunction with medical training or separately for dental students alone. The advantages and disadvantages have been discussed and need no repetition at this point. It might be added,

however, that a special course for dental students may readily be so organized as to provide such cursory or abbreviated treatment of applied Physical Diagnosis that the student, failing to become familiar with the actual procedures involved, finds himself, in his clinical year and later in his practice, handicapped in essential diagnosis, in collaboration with medical colleagues and in advanced study. (see also comment under Medicine of the Fourth Year.)

Odontal Morphology is, in most schools, included in the course entitled "Oral Anatomy". In W.C.U.U. it has been considered pedagogically advisable to teach, under four course headings, the material that is often grouped under Oral Anatomy, i.e., Odontal Morphology, Comparative Oral Anatomy, Applied Oral Anatomy and OralPhysiology (q.v.). Odontal Morphology deals with the external and internal form, position and interrelation of the human teeth, the relation of the arches, etc.

Fourth Year - Medicine - The comment on Physical Diagnosis of the Third Year (q.v.) is similarly applicable to other aspects of Medicine included in the dental curriculum. In the organization of dental curricula it must be anticipated that there may, at first, not be full recognition, upon the part of medical educators, of the applicability of instruction in Medicine to dental training, except in summary or outline of principles. However, those responsible for the development of dental education will need only to refer to the unmistakable trend of development in the acknowledged centres of dental and medical education to indicate the rationale of its inclusion in the preparation of men and women upon whom will rest obligations and demands not assumed by earlier generations of dental practitioners. In the W.C.U.U. the course in Medicine as given to the Fourth Year is jointly taken by medical and dental students. Subsequently, of course, medical students will spend much time upon practical application of the bases provided; while the dental student will, in his interne year, spend a limited period in "rotation" in Medicine in hospital.

The course in *General Surgery* fulfils a function comparable to that of Medicine, and supplies an invaluable basis for subsequent teaching in Oral Surgery. Surgery of the oral tissues, in some form, comprises such a large part of oral treatment that

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thorough grounding in general surgical science is essential. Skill, understanding and "finesse" in surgery are no less requisite in mouth surgery than in any other branch. In fact, while consequences of error or misjudgment may not, ordinarily, be as immediately disastrous in oral as in general surgical practice, there is, for example, probably no operation in the whole field of surgery demanding greater delicacy and more rigid precision and faultlessness of technique than the treatment of dental pulp canals. It is highly desirable, therefore, that the student familiarize himself, not only with general principles, as illustrated in various parts of the body, but with routine surgical and operating-room procedure. Again, this may or may not be given in joint medical-dental classes.

A working knowledge of Neuropsychiatry is of practical value to students of Dentistry and in the W.C.U.U. the course in the Fourth Year is taken jointly with medical students. Similarly a grasp of the fundamentals of Dermatology is necessary in the diagnosis of lesions of the face, lips, oral mucosa, etc., and joint instruction is given.

Comments upon the sample curriculum presented have, so far, with the exception of one or two subjects, dealt with courses of instruction of common value to medical and dental curricula. Inasmuch as the rationale of inclusion of some of these courses in dental training might be, at first, questioned, as new Schools of Dentistry are established in China, some explanation has been given. Subsequent courses of the curriculum, with the exception of Public Health, Medical, Surgical and E.N.T. interne rotations and clinical pathological conferences, are more or less strictly dental components of the curriculum. They are widely recognized as indispensable elements in dental training and the "raison d'etre" of their inclusion will be but briefly discussed. Nor will any attempt be made at this time to elucidate, in detail, the material covered. The content of the strictly dental courses will be treated in a subsequent presentation.

Oral Histology constitutes a field of great complexity and importance. Its status as a strikingly involved and difficult branch of Histology is appreciated only when one considers the wide variety of tissues comprising the mouth and the unique characters

of such structures as enamel and dentine which have no parallel in other body tissues. Further, the extreme hardness of enamel (ninth in hardness of all natural substances) and its juxtaposition with dentine and with the dental pulp, (one of the softest of all body tissues, comparable only to the substance of the umbilical cord) create problems in the preparation of material for histological and histopathological study not encountered in any other field. These difficulties can, however, be successfully overcome; and no school can adequately teach this subject unless it makes available, through skilful technical services, an abundance of human and comparative animal material for microscopic study covering dental, periodontal and general oral tissues. (In this connection, it may be mentioned that the Department of Histology and Pathology of the W.C.U.U. Dental School is preparing a quantity of extra histological material, normal and pathologic, to be held available for other schools opening in China and having need of such teaching aids.)

Oral Pathology, which advisedly is taught immediately upon the conclusion of the course in Oral Histology and Embryology, is built upon general pathology (q.v.) and, is, itself, the foundation of all future courses in diagnosis and treatment. It is of great importance that the teaching staff in this field maintain, on the one hand, familiarity with the basic and other preclinical sciences, and, on the other, a close contact with oral disease in all of its manifestations, so that instruction in Oral Pathology does not remain academically isolated, but is brought into constant touch and integral relationship with its clinical applications. Oral Pathology thus stands midway between, and inseparably associated with, both the preclinical and the clinical courses of instruction. Extensive gross and microscopic museum and teaching material are essential for effectiveness. Constant collaboration with medical colleagues in Pathology is desirable so that teaching in borderline fields such as those of tumors, blood dyscrasias, etc., may receive optimal attention. It has, historically, been difficult, in China, to obtain fresh autopsy material in adequate quantity. Especially in the oral field has this handicap been felt, since frequently hospitals are permitted to make such autopsy investigations as are necessary to establish the immediate cause of death; and since the damaging

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effects of oral disease are not usually immediately lethal, such restrictions, and the widespread reluctance to permit autopsy procedures, create difficulties in the obtaining of diagnostic, research and teaching material. This is a problem which demands public education and close medical and dental cooperation; it should be attacked with vigor upon the establishment of any dental school.

Oral Physio'ogy as a specialized course following general Physiology has now assumed greater significance in the curriculum than was formerly the case. Modern demands have made it essential that the student should gain a comprehensive and thorough conception of oral function, its development and maintenance. Recent research has markedly widened the scope of this study. Its content, which is quantitatively beyond the capacity of the general course to include. and its intimate application to other preclinical and clinical studies justify its separate presentation; and, for fullest correlation, there is advantage in offering this material partly in the Fourth and partly in the Fifth Year.

The study of *Comparative Cral Anatomy* has been found conducive to a much more thorough and practical grasp of the bases of Oral Anatomy than is afforded by the study of human Oral Anatomy alone; it is logically introduced at this point in the sequence of courses.

Applied Oral Anatomy is of the highest practical value in linking associated preclinical and later clinical studies with the form, structure and relationships of the oral tissues. Emphasis upon the manifold applications of this subject helps to prevent the tendency, so common in medical and dental training, to dissociate the didactic and the theoretical from later practical uses. This course is likewise advantageously divided between Fourth and Fifth Years.

Prosthodontology is that division of Dentistry which is concerned with substitution of coronal portions of teeth lost through disease, accident or wear, and of one or more lost natural teeth (or all of the teeth) in order to restore function, health, comfort and esthetic appearance. It constitutes a major technical element in the dental curriculum. It is commonly divided into two main divisions, "Partial and Full Dentures", (In W.C.U.U. known as *Prosthodontology-A*) and "Crown and Bridgework" (*Prosthodontology-B*) (Removable appliances replacing one or more, but not all of the teeth, are most conveniently classified as "partial dentures", although sometimes referred to as "removable bridges"; non-removable or "fixed" appliances are listed under "Crown and Bridgework") In addition, general preliminary instruction in technology, dental materials and applied physics is frequently included under Prosthodontology. In West China an introductory course, covering dental materials, general technology, etc., is given in the Fourth Year; and work in the two main divisions of the field is given in the Fifth and Interne Years. Although dominantly technical, there is an important biological aspect to this division of the curriculum. Since appliances must restore biological function which has been impaired or lost, the operator must have a competent understanding of the Anatomy, Physiology and Pathology of the mouth as well as of the physical and mechanical factors involved, so that constant adaptation to changing biological conditions may be assured.

Odontology is a further major division of Dentistry dealing with the understanding and treatment of lesions affecting the hard tissues of the teeth, the damage resultant from dental caries, abrasions, erosions, hypoplasias, coronal fractures, etc. In restoring normal anatomic form and function through fillings and restorations it performs important biological and aesthetic functions and constitutes a preventive factor of great significance in the mouths of caries-susceptible individuals, frequently, through restorative extension or design, protecting susceptible areas from further carious or other attack. Earlier biologic studies, physics and chemistry, as well as metallurgy and engineering combine, as in Prosthodontology, to form the basis for this important bio-technical division of the curriculum. In W.C.U.U., work in this field commences in the Fourth Year and is continued in the Fifth and Interne Years.

It should be clear, from earlier references, that "*Preventive Dentistry*" is not an isolated subject. Since prevention is the ideal to be held before all phases of professional study, all divisions of the dental field must be, to a greater or less extent, preventive in character. (Especially in China, the enormous population and

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extent of oral disease create a situation which demands a dominant emphasis upon public oral health and prevention). However, there is need for a course which correlates the general field of hygiene and disease-prevention with similar aspects of dental teaching. and which directs all of this instruction into practical and practicable procedures adapted to the individual and collective needs of the country. Various terms have been used in different schools for courses of this nature, Public Oral Health, Oral Hygiene, etc., and the term "*Preventive Dentistry*" represents an optional term which may be appropriately inclusive. The course is advantageously given over two years and Interne service, and covers the individual home care of the mouth by the patient, preventive procedures in practice and the broader public health measures, responsibility for which must be assumed by provincial and national authorities.

Fifth Year - Comments have already been made, under the Fourth Year, with regard to Odontology, Prosthodontology A and B, Applied Oral Anatomy, Oral Physiology and Preventive Dentistry, and under the Third Year regarding Oral Clinical Pathology.

Parodontology constitutes one of the most important divisions of Dentistry. It is concerned with the etiology, diagnosis, treatment and prevention of that group of diseases affecting the tissues surrounding and supporting the teeth, i.e., the alveolar and supporting bone, the gingivae and periodontal membrane. These diseases have been, in the past, erroneously grouped under the general term "pyorrhea alveolaris". Prevalence of parodontal lesions, of single or fusion type, is so prevalent in China as to constitute, without doubt, the most common type of disease affecting the population. (see section on Dental Disease in China). These diseases are progressive in nature; with the exception of certain conditions of dominantly bacterial origin, they are not amenable to spontaneous cure; and, unless appropriately treated, will progress gradually or rapidly to the stages of extreme local impairment of function, and ultimate loss of the involved teeth. Prior to this eventual partial or complete destruction of the masticating apparatus there is grave danger of systemic injury through absorption of organisms or toxins either through the gastro-intestinal or the circulatory routes. Periodontal disease, therefore, represents a

major public health problem; and since it is, to an impressive degree, preventable, the science of periodontology occupies a position of outstanding importance in the modern dental curriculum.

Pedodontology or Dentistry for Children correlates preclinical and clinical material relative to the treatment of the young patient, and applies psychological principles in this important field. It necessarily stands in close relation to the teaching in Preventive Dentistry. The dentist, skilled in the science and art of the treatment of children may do much to build that spirit of cooperation, appreciation and lack of fear which is essential to an effective popular understanding of the relation of oral to general health.

Orthodontology is essentially a branch of orthopedic surgery. Its field is the prevention and correction of anomalies of the mouth looking toward the development of, or restoration of, physiological oral function. Under "Objectives of Dentistry" it has been pointed out that malocclusion leads to consequences of such extensive and serious nature in the mouth that its prevention and treatment represent one of the major functions of the dental profession. The startling prevalence of malocclusion in Chinese mouths and its inevitable sequences of impaired function and periodontal damage make imperative its serious consideration in the dental training program. Several factors have tended to retard the proper development of this science in many parts of the world. Popular understanding of its importance is still far from being widespread. To the uninformed, the obvious aesthetic values of the correction of malocclusion have overshadowed its significance as a health measure. Further, the bio-technical procedures involved are of such complexity that there has been an unfortunate tendency in many dental schools to relegate this branch of Dentistry to the status of a specialty, with the result that general practitioners have been discouraged from attempting its inclusion in routine practice. Again, from the economic standpoint, orthodontic treatment, because of the involvements of time, costly materials and skill, has acquired something of the status of a luxury rather than that of an essential health measures. In China, as yet, there has been little public demand for orthodontic treatment, either on aesthetic or on health grounds. However, this state of affairs cannot, from the

standpoint of national health needs, be permitted to continue. Much preventive work in Orthodontology can be accomplished without extensive financial outlay. Appropriate public education in this field will gradually have prophylactic value and will create an enlightened demand for adequate treatment. State direction of dental services will gradually make available this heretofore expensive field of service on an increasingly wider scale. Naturally, when considering the population problem of China, one must view with restraint the possibilities, from the extensive point of view, in Orthodontics. However. dental curricula must provide for adequate training in this vital subject.

The general subject of *Public Health* is one with which the dental student should have more than a casual acquaintance. His responsibilities not only as a dentist but as a member of the "health" professions are such as to make advantageous the teaching of this subject jointly with Medicine. This is perhaps even more desirable in China at this time than in the West, since the dentist in China will be called upon to participate in this field more actively, in the postwar years, than is the case in countries with a longer history of public health activity. Studies in this course are intimately tied with those in Preventive Dentistry.

Under the general heading of Oral Surgery and Medicine, a number of courses are grouped in the W.C.U.U. curriculum. *Principles of Surgery* is a review of general surgery with special application to mouth conditions. *Fractures and Tumors* are self-explanatory divisions. *Exodontology* deals particularly with the extraction of teeth. *Anesthesia* deals in a general way with modern methods and particularly with regional or conduction anesthesia. *Root Canal Therapy* is concerned with conservation of teeth through appropriate treatment and removal or amputation of pulpal tissue, and the substitution of various materials within the pulp chamber and canals, restoring conditions within and surrounding the tooth which are compatible with its healthful retention in the mouth. Included also are such measures as surgical resection of root apices associated with root-canal treatment in the eradication of apical infection. The course in Diagnosis is a composite one, correlating basic material derived from preceding courses both

general and strictly dental, and instructing the student in the orderly and thorough procedures vital to modern practice. This includes careful drilling in the techniques of history-taking and record-keeping. Class instruction in this year is followed by supervised practical work in the Interne Year. As in Medicine, Radiography has become an indispensable aid to diagnosis and treatment. Accurate interpretation of intra-oral and extra-oral *X-Rays* requires careful training and mature grasp of fundamentals. *Oral Materia Medica* and *Therapeutics* is taught immediately prior to the commencement of clinical work and correlates earlier work in the study of drugs and prescription writing with practical procedures in clinical practice. The course in "E.E.N.T." is given by the medical staff in Eye, Ear, Nose and Throat, in order that the dental student may have an intelligent approach to the diseases of contiguous areas, which are frequently related, as to cause or effect, to oral lesions.

Finally, a group of short courses of obvious nature complete the formal didactic and laboratory work of the curriculum, *Dental History*, *Dental Practice Management*, *Dental Ethics* and *Dental Jurisprudence*.

Special lectures, open to medical and dental staff and senior students, and covering a wide range of subjects, are of great value in stimulating interest and broadening the professional horizon of the upper classes of students. *Clinical Pathological Conferences* should similarly be jointly attended by medical and dental personnel of the Fourth, Fifth and Interne Yeras.

A limited amount of time is advisedly set aside in Fifth year, in which the student is given his clinical clerkship or introduction to hospital procedures and routine. His program will include observation, demonstrations, etc.; after which he may be permitted to perform prophylactic operations in the mouth under strict supervision.

Sixth Year - The final year of the course should be given, as far as possible, exclusively to supervised clinical practice, and demonstrations. The student spends a specified period of time in rotation in each of the major clinical divisions in Dentistry—Diagnosis, Oral Surgery, Odontology, Prosthodontology, Periodon-

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tology and Preventive Dentistry (which includes Children's Dentistry) and in the following clinical services in Medicine - Medicine, Surgery, and Eye, Ear, Nose and Throat. Detailed minimal requirements in each Division are essential so that a comprehensive and balanced clinical experience is afforded to each student.

The scope of the clinical divisions has been discussed under the corresponding preclinical courses and needs little further may explanation. It be noted that such conditions as osteomyelitis, cysts, tumors, jaw resections, cancrum oris, etc., fall within the legitimate field of oral surgery. Many of such cases require hospitalization. Whether hospitalization is provided by the Department of Clinical Dentistry or by an affiliated general hospital, the dentist or dental specialist should take charge of the cases; he will, of course, avail himself of the opportunity for fullest consultation and cooperation with his general surgical colleagues. The treatment of cancrum oris may be handled by members of the Dental Pediatric service since such conditions are pre-eminently diseases of childhood and their treatment (preferably under strict hospitalization) involves surgery, drug therapy and nutritional care. The various forms of stomatitis, Vincent's infection (necrotic gingivitis), etc., may, according to the organization of clinical services, fall within the purview of Periodontia or of Dental Pediatrics or of both services.

10) *Orientation of Freshman Students* - This may advantageously be accomplished in a minimum of two periods; one devoted to a presentation of the purpose and content of the course in Dentistry; the second to a "conducted tour" of the college buildings, clinical department, etc. In the presentation of the nature of the profession and the curriculum it has been found to be of interest and value to have each department head briefly outline the functions of his department in the total undergraduate picture, while the Dean correlates this material into a coherent outline of the scope, the privilages and the obligations of the profession. This should be done in the early part of the fall term. In addition to the above, and in view of the fact that the aims and functions of the profession are as yet poorly understood even by the educated strata of society,

it is of distinct value to discuss this subject in a general way with all incoming university Freshmen. In the W.C.U.U. an "Orientation Week" is organized at the commencement of the term. At this time the Dean or other officer of each College lectures to the Freshman of all departments on the work of his college; this is followed by an inspection tour of the physical plant of the campus, preferably at a time when classrooms, laboratories and clinics are in full operation.

11) *Dental Clinical Conferences* - In addition to the general clinical-pathological conferences already mentioned, the Department of Clinical Dentistry, under which the Interne work is organized, should hold weekly Clinical Conferences, open to all staff members and to students of the Fifth Year (Clinical clerks) and of the Sixth Year (Internes). At these conferences lectures and demonstrations will be given by local staff members or by visiting medical or dental teachers or clinicians. Subjects of such presentations should be announced in advance and students required to acquaint themselves thoroughly with the subject to be discussed. Where the topic deals with unusually difficult problems of diagnosis, the revelant history of cases concerned should be indicated in advance of the meeting, and the students encouraged or required to study the material and bring their tentative conclusions to the conference.

12) *Theses*—A thesis should be submitted by each student in conformity with usual university regulations. In order that thesis preparation achieve its purpose, that of initiating the student into the orderly procedures of organizing of information and of creative investigation, it is essential that the subject of the thesis be chosen at least one year before the time set for its completion; that the student be carefully taught an approved sequence in the planning and conducting of experiments or observations and in the treatment of data. It is not to be expected that findings of significant research value will commonly be achieved by the undergraduate; but it is entirely legitimate to expect that the preparation of a thesis will serve as an invaluable introduction into the field of creative thought. Under the stimulus of teachers and advisors who are themselves imbued with a scientific attitude, the student will gain interest and insight; and occasionally will be found the man or

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woman who later will devote time and skill to the widening of our scientific horizons.

13) *Literary and Technical Composition and Public Delivery*—Historically, professional men and women have been frequently handicapped in the field of public expression, either in literature or on the platform, through their concentration on the more specialized aspects of their work to the exclusion of the arts of lucid and fluent speech and writing. Inasmuch as the progressive dentist will be called upon to share in the direction of public thought, it is advisable that appropriate assistance in this field be afforded him during his college training. Some dental schools offer courses in "Technical Composition" and "Public Speaking". Such instruction does not occupy a large amount of curricular time and, if given by competent teachers, will pay high dividends in making future dental leaders articulate and forceful members of society.

Advanced Study and Research—It is a truism today that a scientific school of Dentistry or of Medicine cannot fulfill the exacting demands of preparation for professional life unless it is actively and enthusiastically engaged in original investigation as well as in the utilization of knowledge gained from the past and from contemporary sources. The teacher who is earnestly engaged in scientific research will, other things being equal, prove to be a better teacher than the one who is content only to pass on to others the accumulated knowledge in his field. He will be more discriminating, more observant; he will be able to inspire the student to develop a truly enquiring mind and a "divine discontent" with the limitations of present intellectual attainments.

In Dentistry there are unlimited opportunities for research and advanced study along a wide variety of lines, preclinical and clinical, biological and bio-technical. Although there has been an impressive amount of research in Dentistry in many countries during the past fifty years, there remain vast areas of study, of an interest and complexity to challenge the most competent investigators. However, by no means all of the manifold problems awaiting careful study are of such a character as to demand the efforts of the professional ressarcher. There is a wealth of work

which may be done by the average well-qualified teacher in every phase of dental theory and practice. However, it is a common experience in dental (and other schools) that unless such research work is carefully organized and correlated, and unless specific periods of time are set aside for such purposes, the best of intentions and plans may end in frustration and futility.

In the W.C.U.U. there has been organized a Division of Advanced Study and Research which seeks to organize, to correlate and to direct research activities carried on by the staff of the school. Central space and facilities are provided. Each member of the staff is expected to conduct one or more lines of investigation related to his main interest and activity.

The timetable of each teacher, preclinical and clinical, is so arranged as to include two half-day periods per week to be exclusively devoted to advanced Study and Research. A special fund provides the necessary materials for animal experimentation or other laboratory or clinical investigation, as well as for publication of findings. This type of organization is recommended for other existing or proposed institutions. Above all, research must not be allowed to fall into the category of academic "luxuries", to be endorsed but left in abeyance until a future day when more time and greater facilities may be available. Periodic meetings with reports of projects and general discussion are essential to the sustaining of interest and efficiency. Publication of complete or "progress" reports in local bulletins and in national and international journals can appropriately be the responsibility of the Division.

k) *Postgraduate and Graduate Training*—A limited number of institutions will need to provide facilities for postgraduate and graduate study in Dentistry. Obviously it should not be necessary for all graduates who seek advanced study or specialization to go abroad for such work. The great bulk of such training must be made available in China. Most demands for advanced study fall into one of the following categories:

a) Short or long postgraduate "refresher" courses, primarily aimed to bring up to date practitioners

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who have, for some time, been out of touch with academic circles and professional developments.

b) Short or long postgraduate courses intended to provide advanced work in special fields, but not of such a nature or extent as to fulfill requirements for an advanced degree.

c) Graduate work, leeding to advanced degrees or certificates in such fields as the following:

a. Specialization in—Public Dental Health, Oral Surgery, Periodontia, Orthodontia.
b. Dental Teaching (in various fields)
c. Research

At the present time only one institution (W.C.U.U.) is in a position to carry on in the field of advanced training; and it will require strengthening in personnel and physical equipment before it can adequately attempt all prases of this work. It would seem desirable that, in the near future, at least one institution in East China and one in West China serve as centres of advanced study in Dentistry.

Synchronously with development in the academic field there will be needed corresponding development in the organization of professional service throughout the country, with the establishment of legislation governing practice, minimal standards controlling specialization etc. These professional problems are now under consideration by the National Dental Health Board under the National Health Administration. Close cooperation between educational and professional authorities, with adequate representation of dental educational and clinical bodies will, without doubt, clarify, in the postwar years many existing problems and difficulties.

Dental teacher training is a problem of the first magnitude. It is clear, from a study of the present National Dental Health Program, that any project envisioning national development is purely theoretical unless dental personnel, properly qualified, is made available in much larger numbers than is now possible. This postulates the opening of new schools in strategic parts of the country. Such expansion is impossible without numbers of

suitably trained teachers. Since it would be both undesirable and impracticable to attempt to secure the bulk of such teaching personnel from other countries, it is imperative that dental teacher training receive immediate and careful attention.

Militating against the attraction of dental teaching as a career is the fact that dental practice, at the present time, is, to a marked degree, lucrative, while teaching is, economically, in a vastly less favorable situation. The man or woman who faces the choice of practice or a teaching career, and who chooses the latter, makes a substantial financial sacrifice, affecting profoundly his scale of living during his active life and his security in old age. Compensations, both intellectual and material, for this sacrifice, must be made available to meet this situation.

Furthermore, there has, historically, been a discrepancy between the training of the professional teacher, and the teacher, for example, in the humanities. While other university teachers may frequently prepare themselves through some study of the philosophy and techniques of pedagogy, it has usually been considered sufficient if a medical or dental or other professional man or woman be eminently qualified in his particular field in order for him to assume the serious obligation of the teacher. In recent years this illogical state of affairs has received practical consideration in some professional schools; and it is becoming increasingly desirable for the dental teacher to take some organized studies in pedagogy in order that his qualifications in his special field may be coupled with skill in imparting knowledge and stimulating thought processes. It would seem, therefore, appropriate and timely for one or two institutions in China to offer courses in Dental Pedagogy leading to a graduate degree of B. Ped. (Dent) or M. Ped. (Dent) or equivalent. Such training would necessarily call for basic instruction from an affiliated College of Education and/or College of Arts and perhaps College of Science, with subsequent applications taught by the School of Dentistry. Such standing would raise the status of the teacher and would substantially enhance his usefulness and efficiency.

l) *Dental Educational Administration*—Administration in schools of Dentistry is basically similar to that of other component colleges in

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a university set-up, and requires little discussion. Its relation to the Ministry of Education through the central administration, to the President and other Administrative officers, Departments of Studies, of Discipline, of Business Management etc., is identical with other schools. General regulations regarding promotions, standards, discipline, etc., are likewise similar unless special factors in the organization of courses make modifications desirable.

Where schools of Medicine and of Dentistry are intimately associated, a Dean with associated staff should be appointed for each school to direct the activities of his departments, and to correlate the work of the two schools (possibly under one College Director). It is desirable to hold frequent general faculty meeting with a joint approach to the main policies and problems of the two schools. A small College Council representing medical and dental staffs is useful as an interim executive body. Standing committees should also be jointly constituted.

Successful administration along approved modern democratic lines postulates a keen and intelligent interest, on the part of the teaching staff, in the policies, problems and growth of the school. Only through such corporate study of, and participation in, the broader aspects of administration can the fullest harmony and community of interest be developed within a teaching staff, the optimal judicial wisdom be made available and the training and preparation of future administrators be assured.

In an attempt to appraise the standing and development of students in the broadest and most comprehensive way, the College of Medicine and Dentistry of the W.C.U.U. has established a Committee on Admissions, Promotions and Aptitude Tests. This committee consists of a nucleus of administrative officers which is augmented, according to the student year under consideration, by the co-option of department heads concerned in the work of that year. This committee appraises the work of each student at the close of each semester; and, through correlation of information supplied by each department as to the behaviour, capacities, growth or retrogression of the individual, is in a position to judicate upon promotion with an understanding which would be unattainable under more conventional methods of estimating students' grades.

Great care must be exercised in the admission of students; and minimal standards of qualification must be rigidly maintained. Suitability for the dental profession is by no means consonant with the choice of the student who has just completed higher middle school training; and a searching study of each student should be made in the first and second years, so that manifestly unsuitable candidates may be directed into other channels without unnecessary and sometimes tragic loss of time. It is felt by many medical and dental educators that a careful balance must be struck between the admission of men and of women, keeping in mind the likelihood that many women students will marry after graduation and may be lost to the profession.

Aptitude tests have been frequently applied to students offering themselves for the various professions, in the hope that a dependable correlation between such tests and subsequent findings might be established. To date the findings of such tests have not indicated a reliable correlation. However, new approaches are constantly being made in this study, and it would seem highly worthwhile that efforts be continued. Aptitude tests particularly adapted to the needs of Chinese students should be evolved and tested by appropriate committees in dental schools

m) *Distribution and Activities of Graduates*—Reference has been made to the National Dental Program and its plan for the gradual establishment of a form of State Dental Service as the logical answer to the problem of the vast population of China, the prevalence of oral disease, the paucity of dental personnel and the cost of dental service. It would seem beyond controversy that, in order to serve China most effectively, graduates, now and for years to come, should seek to offer their services predominantly through institutional connection—either through appointment in the State clinics now being gradually set up, or through government, mission or private hospitals. Such service will reach out, in both preventive and curative aspects, to the masses of the population in a way which is quite impossible in private practice. It is true that such institutional connection will mean a potential financial loss to the dentist. With the return of normal conditions after the disturbances of war it

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may be confidently expected that institutional service will receive reasonable compensation; but, of course, it will inevitably fall below the emoluments of private practice. However, the "health professions" have never s t before their members an ideal of wealth or of social exclusiveness based upon wealth. They have consistently set before students and graduates the concept of service based upon skill and character and public spirit. Such an ideal is vitally necesnary in China today.

n) *Dental Educational Facilities in Eastern China*—It was a matter of fortuitous circumstance that the first dental school in China should have been started in the western province of Szechwan (in the Mission-founded W.C.U.U.). Subsequently several short-lived ventures in dental education were begun at the coast. Later, a Government school was started at Nanking shortly before the outbreak of the Sino-Japanese war forced the withdrawal of coastal institutions to the interior. In the near future, when refugee schools and colleges have returned to their original sites, and widespread educational expansion has gotten under way, there will be an inescapable need for more dental educational facilities in northern, central and southern sections of the country. The major problem will, without doubt, be that of adequate teaching personnel. Physical plant and material needs will not constitute insuperable difficulties; but qualified teachers are few in number. To seek to establish, in the near future, multiple dental schools, under such circumstances, would seem to be incompatible with minimal demands of efficiency. The writer would suggest the possibility that, at some suitable point, one high standard institution be established, offering, under definitely favorable circumstances as to teaching staff and equipment, the final years in dental education; that a cooperative program be consummated with medical schools in various parts of coastal China by which limited numbers of students taking their preclinical studies in these institutions (along with medical students) be permitted to transfer, at an appropriate point in the curriculum corresponding approximately with the conclusion of the Third Year Proper in the W.C.U.U. curriculum (q.v.), to the dental school for the completion of training leading to a degree in Dentistry. With

the existing schools (those already mentioned, plus the Army Dental School now at Anshuen, and a school in Harbin) such a plan might meet the needs with such efficiency as is possible during the coming few years; as soon as additional teaching personnel becomes available the program would naturally be expanded to include additional schools to the limit of availability of staff and financial support.

o) *Conclusion*—The writer has attempted, in the above presentation, to outline, not a rigid or dogmatic system of education in Dentistry, but rather some of the basic principles slowly and experimentally developed during the past century of dental training in the West, and certain modifications which would seem to be functionally related to the conditions existing in, and the needs of, China. To a large extent, these principles and modifications have been employed in the development of the philosophy and curriculum of the School of Dentistry of the West China Union University, with, perhaps, some measure of success. Dental education in China is still in its "adolescent" or formative stages; and a considerable degree of flexibility in curricular planning must be observed until optimal adaptation to existing needs is attained. However, while a state of fluidity as to detail will inevitably accompany the search for the solution of the health problems of China, certain broad foundational principles derived from human experience stand out with a clarity that cannot be ignored. From the standpoint of the student, the objectives of higher education are multiple —To acquire knowledge; to develop the capacity for independent thought; to prepare and qualify for a career of value to society; and, most vital of all, to develop inner resources, awareness of values, comprehensiveness of interests and a soul-sustaining philosophy which will endure, giving dignity and usefulness and rich meaning to life. From the standpoint of the State, the objectives are likewise multiple—To develop, amongst educated men and women, a spirit of devotion, not to self-interest, but to the welfare of the community; to create an ever-increasing body of discerning and mature citizens who will, in the spirit of true democracy, demand the highest and noblest in, and will themselves participate in, the administration and organiza-

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tion of the country; to train talented and conscientious men and women for leadership and service in the various fields contributary to healthful and cultured living; to widen the horizons of science and culture regardless of the political and racial limitations imposed by less enlightened generations. If energized and directed by such motives there is little doubt that dental education in postwar China will reach high levels of scientific accomplishment and of social betterment which will be worthy of the genius and greatness of the Chinese people.

Chengtu, Szechwan
November 1945

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DENTISTRY IN CHINA

National Dental Health Board

The National Health Administration

Republic of China

Prepared by

David S. K. Dai, Secretary

June 20, 1945.

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DENTISTRY IN CHINA

Emperor Huang Ti (黃帝) (2693 B. C.) was probably the first Chinese to study dental disease. He divided oral diseases into three types: 1) Fong Ya, or inflammatory conditions; 2) Ya Kan, or diseases of the soft investing tissues; and 3) Chong Ya, or dental caries. According to him, oral diseases and pain were the result of an imbalance of body heat and cold, and mobility of the teeth resulted from inflammatory conditions. He believed that teeth were a type of skeletal tissue and, therefore, that anything beneficial to the formation of bone was helpful to them. Thus, the hornof the deer was considered an excellent medicament for diseased teeth.

Chong Ya (worm tooth), or dental caries, was attributed to the gnawing of worms and could be prevented by the removal of food debris from the mouth after eating. So widespread is this belief among presentday Chinese that the custom of rinsing the mouth is the common practice in China. Rampant caries of childhood, Chiao Ya (burned tooth), was considered to be the result of over indulgence in sweets, an opinion widely held by Chinese today.

Therapeutic measures were largely confined to prescribing internal draughts of drugs designed to combat abnormal changes of the body and to strengthen the internal organs. Local treatment included acupuncture, the use of the moxa (counter irritation), massage and application of medical plasters to reduce

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inflammatroy conditions and to relieve pain. Available records indicate that the Chinese people began to brush their teeth and rinse their mouths with saline solutions during the Tang Dynasty about 619 A .D. Unfortunately, no attempt was made by Chinese physicians to repair damaged teeth. There is no evidence of a restorative art and nothing concerning it can be found in Chinese medical literature.

Chinese proverbs and folklore contain much that is of interest to dentistry. The relationship of dental diseases to systemic health has been emphasized in proverbs, and Chinese people are mostly acquainted with the proverbial "Ten thousand diseases arise from the mouth." The ancient poets and story tellers thought a great deal about the teeth. They usually described the teeth of princesses as being regular and white, likening them to melon seeds or the heart of the cherry. Ghosts were mentioned as having teeth "as sharp as knives", "very long and irregular." Fortune tellers told a person's fortune, life and character by the appearance of the teeth and the development of the mandible.

A perspective of the changes and developments of dentistry in China can be obtained from a consideration of the country's dentalhistory in its evolutional phases.

Pre-professional Epoch

Until a few years ago, women who made their living by removing "tooth worms" were found in the rural districts of the interior provinces. With the aid of sleight-of-hand the "worm remover" presented to her client a worm, or worms, according to the fee agreed upon. The aching tooth was usually at least temporarily relieved by placing a lime cement in the cavity Ostensibly to prevent the entrance of more worms, but it appears that the power of suggestion was the only therapy considered

necessary to produce a cure.

The old style "tooth remover" flourished in rural China. Only those teeth that had been loosened by chronic or acute inflammatory conditions received his attention. Frequently, he was found in busy market places, with herb sellers, phrenologists, fortune tellers and the like. His stand could be identified by piles of strings of extracted teeth, which were supposed to attest his skill as an extractor.

There is also an interesting group made up of "tooth cleaners". They attend country fairs and, as a rule, their charge for dental cleaningis a very small one. Their technic, although crude, is rapid and seemingly quite effective, for the teeth are usually clean and white after thier treatment. The cleaning mixture is composed of a dilute solution of hydrochloric acid, which dissolve the outer enamel surface, leaving it rough and probably more susceptible to caries and the accumulation of stains.

Still another group consists of those persons who are ordinarily housed in rooms with windows opening directly on the street and who display signs announcing them to be "tooth fitters." They offer to restore lost teeth by full or partial denture, to cover decayed areas with a more or less toothshaped cap of gold, brass or silver, or to cater to the human desire for adornment by capping perfectly good anterior teeth. Some attempt to fill tooth cavities with a cement, gutta-percha or locally made silver alloy. It has been estimatedthat throughout China, they number at least 5,000. According to the survey of the writer, there were thirty-nine such dental shops in the city of Chengtu in 1934.

In the large and more up-to-date cities, there are to be found a group of men in practice who formerly served as chair and laboratory assistants to Japanese, European and Americ an dentists. These men offer a little better grade of practice than

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the last mentioned, they can do more than produce their treatments are based on unreasoned observations, they do no more than produce mechanical results without any consideration of the biologic factors involved. Therefore, their activities are at times a menace to the public welfare.

Introduction of Scientific Dentistry

There are in a number of the open ports of China, European, American and Chinese dentists who have been educated abroad. Unfortunately, these men confine their practice largely to the well-to-do and, as a result, have done little or nothing for the advancement of dental practice or the development of dental education in China.

Pioneer western dentists, including Anderson of Yale, Yates of Harvard, Halliday of Columbia, and Canadian dental teachers (Thompson, Lindsay, Agnew, Mullett, Anderson and Campbell), have succeeded in introducing modern dentistry into China. Several unsuccessful attempts to establish schools have been recorded. A group of foreign trained Chinese dentists opened a threeyear dental college in Shanghai in 1930. This school existed for only three years and graduated less than twenty men. The Peiping Methodist Hospital also conducted a three-year course in dentistry for an unmber of years after 1917.

The first successful dental school in China is that associated with West China Union University, located at Chengtu, Szechuan. The dental faculty was created in 1918 and in 1929 was united with the faculty of Medicine to form the College of Medicine and Dentistry. The founder of that school was Ashley W. Lindsay. The educational program has been increasingly promoted by Thompson, Agnew, Yates, Mullett, Campbell and

the Founder. The College offers an University-grade dental education through a curriculum that may be completed in seven years after high school graduation. This course because of different preliminary school standards is approximately equivalent to the six-year courses in Western Countries. The biological and medical sciences are tought to medical and dental students in the same classes and laboratories and by the same staff. Its graduates are granted the D. D. S. degree and are finding employment all over China. It is recognized that this school is the cradle of dental personnel in China and the graduates must assume responsibility for meeting the wide demand for leaders of dental education as well as Public Oral Health.

In the fall of 1935, the National Government established a Department of Dentistry in the National Central University at Nanking. The course is given in four years, including predental studies. This school was moved to Chengtu in 1937. On the recommendation of the Ministry of Education a six-year course in dentistry for the National Central Dental School was agreed upon. But the four-year course is still continued.

Under the Military Medical Administration, a small department of dentistry has been established, in the Army Medical Academy in 1941 at Anshun, Kweichow. The course is given in three years, including predental studies.

In the spring of 1937, the first meeting of the initial committee on dental education recommended that the Government base future dental practice on the principle of prevention; further, the committee recommended training of dental personnel that could put into operation the preventive principle. The necessity for this stand is obvious when China's tremendous population is compared with its extremely small number of adequately trained practitioners.

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Introduction of Public Health Dental Service

Public health activities in China have made rapid progress in recent years. It is an opportune time to demonstrate a system of state dental health service during the period that medical and public health services are being rapidly developed and extended throughout Free China. The public health and the dental educational authorities in China realize the importance of a coordination of efforts under a united program. This would aim at a set of definite objectives in order to bridge the usual gap between education and the supply of personnel on one hand, and the utilization of the personnel for service on the other hand.

Assisted by the American Bureau for Medical Aid to China, the National Health Administration in cooperation with the educational institutions concerned is ready to initiate a State Dental Program for the demonstration of "Protective Dentistry" as a State dental service.

The objectives of this Dental Health Program are:

1. The introduction and demonstration of a system of state dental health service.
2. The initiation of a system of training for the additional types of dental personnel that are needed in the State Dental Health Service.
3. The expansion and strengthening of the existing faculties for the training of dentists.
4. The provision of postgraduate courses in general dentistry and the inaugguration of certain special courses.
5. The demonstration of the importance of preventive dentistry.

The system of state dental service is to be incorporated into the system of state medicine.

(1) *National* There should be a national demonstration and training center in preventive dentistry to be attached to the National Institute of Health. This center should provide adequate facilities with an adequate number of teaching as well as staff dental personnel. In order to train dental health personnel to meet the immediate need in the National Dental Health Program, the work of such a demonstrative center should include: school hygiene, industrial hygiene, preventive service, adult service, exceptional service, training program, health education and statistical research.

A small sized dental center was established in Chungking in 1943. Unfortunately, due to the lack of facilities and shortage of personnel, the actual work of the center has been far from ideal.

Besides, there will be dental service attached to each of the national hospitals, such as Central Hospital in Chungking and Kweiyang and Lanchow in the Northwest.

(2) *Provincial* The provincial dental service will be attached to the provincial medical headquarters either with the provincial hospital or with the provincial health center.

(3) *Regional* The regional health center becomes the technical base and bears the supervisory responsibility for state medical service in an area covering acertain amount of population.

Recommendations have been made by David Dai, to harmonize with actual possibilities and probabilities within the period immediately following the war, a period of approximately five years, as follows :

1. It is obviously impossible to expect to have available fully qualified dentists to meet all the needs. It will therefore be necessary to train and have available subsidary personnel including, dental nurses, dental technicians and dental dressers.

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2. It is suggested that a 500-bed hospital should have at least 10 dentists, two dental supervising nurses, 3 technicians, 20 oral hygienists and ten beds for dental patients. A 250-bed hospital should have four dentists, 2 technicians, 2 nurses, 12 oral hygienists and five beds for dental patients. A 100-bed hospital should have two dentists, 1 technician, 4 oral hygienists and 2 beds for dental patients. A 50-bed hospital should have 1 dentist, 1 technician and 2 oral hygienists.

3. It is suggested that 500 bed hospitals should establish dental units which will not only meet the needs of the immediately concerned, both poor and well-to-do patients, but will also serve the smaller dental clinics of the area, supplying specialists and consultation service as needed.

4. Mobile dental units with portable dental equipment would be very useful in China to provide dental service in distant areas where otherwise no dentists would be available.

Organization for *Coordination* and *Technical Advice*: *National Dental Health Board*

By the organization of the National Health Administration, the National Dental Health Board was formed in 1942. The members include, J. C. K. Shen, C. K. Chu, A. W. Lindsay, Gordon Agnew, C. N. Cheer, C. H. Chinag, Chen-Hua and David Dai.

The functions of the Board:

1. Advice on the National Dental Health Program.

2. Coordination of work of the organizations participating in the National Dental Health Program.

3. Planning the different types of state dental service.

4. Supervision of the training and demonstration work involved in the National Dental Health Program.

5. Study of the needs of the State Dental Services and

advice regarding the supply of dental personnel and equipment.

6. Advice on the allocation of funds for the development of the state dental services.

7. The supply of a wide and more adequate service to the people.

A list of fundamental prerequisites perpared by David Dai has been accepted and confirmed at the Fourth Meeting of the Board at Chungking in 1944. These include:

1. Chinese deutistry should be practiced by two grades of practitioners, professional trained personnel will provide oral, medical and surgical care, but purely technical requirements, such as restoration of teeth, sanitation of the mouth and nursing assistance, must be supplied by those possessing only the technical background.

2. Because of the peculiar situation in China, state dental services should be utilized to solve existing problems and to develop the profession of dentistry in China to parity with that in other countries.

3. Dentistry in China should coordinate its activities with allied health professions in one public health service. However, as amply proved in the experience of other countries, dentistry must have its own internal orgrnization in order to develop efficiently.

4. National dental legislation must be studied carefally by experts, passed and impartially enforced throughout the whole country.

5. Social dental welfare should be secured without interference with progress toward the achievement of high professional standards of practice and the development of superior professional personnel.

6. The conservation of dental health must be recognized

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as a function of the government.

7. The benefits of the service must be assured to all classes of society and institutions.

8. The cost of maintenance of the service must be within the ability and means of society to pay.

9. Advisors, teachers and specialists of dentistry should be invited from abroad to aid in guiding and teaching, until an adequate number of fully competent Chinese dentists are prepared to take over these positions.

10. The plan under which a dental service operates must be flexible and adaptable enough to meet the needs of urban and rural populations, both civil and military.

11. The funds for the maintenance of the service shall be raised by taxation.

12. It is obvious that the Government will be unable to provide adequate funds and sufficient personnel for the care of adults. A national dental health service should, therefore, be based on preventive steps rather than on an attempt to eradicate the present accumulation of dental disease in China. It is evident that dental care for children, dental research and dental health education should be the keystone of the national dental health program. Year by year, such a service should definitely lessen the loss of teeth and other oral diseases among adults. Year by year, the cost of dental care would decline as fewer people would need extension reparative and restrictive reconstructive services.

13. Type of personnel for the State Service should be determined, namely (1) *Dentists* Dentists must be professionally and biologically trained, will provide oral medicine and surgical care, supervise and control the technic procedures of the subsidary personnel of groupppractice. (2) *Prosthesis technician* Prosthesis technicians will be trained only in technical procedure under the

supervisionof dentists. (3) *Dental Nnrses.* New Zealand has provided a good example through a distinctive feature its school dental service. Most of its personnel consists not of dental surgeons but of specially trained dental nurses, and in New Zealand this plan is already bearing fruit. This type of dental personnel not only undertakes the health education, prophylaxis, chair assistance, but also renders operative work for children. The same program, if applied in China, would seem to be the most economical and logical solution of China's immediate dental program.

14. Facilities should be granted for the present unqualified men to become qualified techniciane.

The fifth meeting of the National Dental Health Board was held in Chungking at the General Offices of the National Health Administratiom.

The reports of the dental schools were mostly encouraging. In the school of Dentistry of the National Central University, in accordance with the program of the Board, undergraduate admission in dentistry had been increased since the inauguration of the program. Fullest cooperation with the plans of the Board had been given by the school. Publication of a quarterly Dental Bulletin had been commenced.

The work of the year in the school of Dentistry of the West China Union University was presented to the meeting. In conformity with the program of the Board, undergraduate admissions in Dentistry had been approximately doubled. Post graduate instruction had been offered. Emphasis had been laid upon dental research, and under the Division of Advanced Study and Research, a comprehensive program involving all staff members had been inaugurated. A dental lexicon is now in the press. Texts on Periodontology and Public Health Dentistry are in preparation.

The program of the Board for the immediate future includes:

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Training of dental nurses:

The training of dental nurses is to be commenced in the autumn of 1945. It will be a two year course and one additional year for internship. This type of personnel will be trained to uudertake the following duties and responsibilities :

a. Health education for adults and children.

b. Assisting the clinical dentists. The clinical work will consist of :

a. Prophylaxis.

b. Dietary advice.

c. Tooth brushing demonstration.

d. Plastic filling for both primary and permanent teeth.

e. Simple extraction under local anesthesia.

f. Taking and processing of radiograms.

Chinese People Need Dental Care

A. W. Lindsay, Dean of the School of Dentistry of West China Union University has stated, "An oral health examination of Chinese population would present very similiar defective conditions to those found in such countries as England or the United States. A survey of these conditions and analysis of the compiled statistics would reveal unlimited disorders of the teeth themselves accompanied by numberless defects or diseases of their supporting tissues and structures."

It is generally agreed that Dean Lindsay's statement is correct.

It is true in most areas of China that the people can searcely secure adequate dental treatment. At times patients suffer not only from dental diseases but also from the treatment given by unqualified practitioners. Patients are attacked

by secondary infections because of osteomyelitis, or septicemia, following the extractions performed by quacks. Impacted third molars leading to serious pericoronal infection are very frequent. As a result of untreated teeth with exposed pulps, periapical infection is common. Extensive pyorrhea and gingivitis are found in all areas.

It may be true that the incidence of dental caries among Chinese people is considerably lower than among the western peoples. R. G. Agnew, Professor of Pathology at West China Union University, reported that the dental caries incidence in West China approximates 45 percent in adults and 70 percent in children. The incidence of caries in children apparently is increasing in urban areas where it is already higher than in rural areas. However, it should be remembered that since only the occlusal and proximal cavities, clinically observable without X-ray, were noted, the examination on which these statements were based must be considered to be only partially complete.

Dental examination, given by D. S. K. Dai of 1,250 children from 2 refugee primary schools in a small town of Wenkiang, 1940, showed that 1,001 children had dental defects. These defects included involvements of the teeth themselves as well as their supporting tissues.

There can be no doubt that the incidence of oral diseases among Chinese children,as well as adults,will be on the increase due to the war and the resultant movement of people from their home localities to other communities where changes in diet and environment are entailed. This increase in dental diseases will be a challenge to the Chinese national health program.

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Present Problems and Future Outlook

It is generally realized that a scientific doctor must not give any treatment to a patient unless a full picture of the case, based on careful examination and reliable diagnosis has been obtained, A community may be considered as a patient. Each community has its own syndromes. Therefore, a survey as well as a policy should be secured prior to the development of a program.

China, certainly, is a peculiar patient. She needs special treatment. Her dental health welfare problem is no exception.

The followlng conditions must influence all consideration of the Chinese dental problem :

1. The huge size of the country and its population,
2. Eighty five percent of the population living in rural areas virtually without any dental facilities.
3. The inadequate means of communication and the general illiteracy.
4. The inability of a very large proportion of people to pay for any dental service.
5. The faith which such a large proportion of the people have in unscientific medicine and dentistry.
6. The large number of unqualified dental practitioners.
7. The very limited number of college trained dental practitioners.
8. The rapidly expanding demand for sound dental care by the ever growing number of educated men and women.
9. The rapid growth of governmental or institutional dental health activities.

10. The urgent need of dental care in industry after the war while China is becoming industrialized.
11. The possible increase of oral defects due to the war catastrophies.
12. The lack of indigenous dental personnel to fill positions such as government dental health administrators, dental educators, clinical experts, writers, all of which demand trained people.

All of these factors and conditions emphasize urgent need for a careful organization of dental education and practice in China.

Lack of personnel probably is the most acute problem in China's development of a dental health program.

Dentistry in the United States has been considered the best in the world, measured by the member of dentists, over 70,000, by the number of dental schools, 39, by the ever-increasing number of dental hygienists and technicians or by access to the best restorative materials and modern equipment. Nevertheless, in spite of the excellent dental profession in the United States, there is no reduction in the amount of dental caries. The dental conditions of the selective service registrants and applicants for enlistment throughout the country have shocked the profession. It was found that 20 percent of the rejected men in the first draft for the army and navy was caused by dental deficiencies.

It is almost unbelievable that in China there are only two dental schools and a little over 300 qualified dental practitioners. If China should follow the steps of America and attempt to develop her dentistry on the same basis that one dentist is necessary for every thousand population served, an easy mathematical calculation should show that China will need 450,000 dentists.

To produce 450,000 dentists would require many dental

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schools and, should we agree that one thousand dentists can be graduated each year, it would take 450 years to produce that number, not taking into consideration death and all other unknown unexpected factors. Obviously there must be a different plan found for China, especially since it is a country of great size and with a large portion of population living at a low economic level.

Because of the very peculiar situation of China, it is generally agreed that State dentistry with group practice may be a logical solution of the country's great dental problem. However, it can be stated without fear of contradiction that such a social trend of dentistry certainly offers a critical challenge to the Chinese dental profession as well as to the provision of public welfare for the Chinese people.

In order to avoid possible dangers which may develop, otherwise, the State Dental Program should be attempted only under national dental legislation and careful management. Such a system of State Dental Service must be incorperated into the system of state public health in China. Certain fundamental and essential pre-requisites must be given special consideration. By law the auxillary dental personnel should be under the supervision of dentists. A national dental health program must be based on preventive steps rather than on the attempt to eradicate any present accumulation of dental disease.

The policies of the dental health program for the masses must be based on the supply of a wide and adequate dental service to all classes of society in the urban and rural areas, within the ability and means of China to pay.

Since a community should be considered as a whole the longterm solution of Chinese dental health problems, probably, will be dependent on a great number of other factors, viz, the raising

of the standard of living and the development of improved social and economic conditions.

It may be fortunate for China that there are, as yet, few vested interests to be considered in the organization of either dental education or practice. Therefore it should be possible, without fear or favor to elaborate a program to meet existing conditions. It should also be possible to avoid the faults and failures of dental legislation and organization in other countries.

Those interested in the academic aspects of dental education in China are referred to an article to be published shortly by the National Dental Health Board by R. C. Agnew, Acting Dean of Dentistry West China Union Univerrity.

The American Bureau for Medical Aid to China, the W. K. Kellogg Foundation, the American Dental Association, the American College of Dentists, the International College of Dentists, the American Association of Public Health Dentists, many dental schools, dental health institutions, and State Health Departments, the Medical Surgical Relief Committee of America, the Associated Boards for Christian Colleges in China, the United Church of Canada and Canadian Dental Association, all have manifested a friendly sympathy and keen interest in China's dental health program. It is believed sincerely that their aid to China at this time will be of strategic importance in enabling Dentistry to assume its proper place in the health and welfare program of China's post-war new social order.

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Activities of the Medical College of West China Union University in Recent Years

By Robert Chun Yu Lin

The Medical College of the WCUU is so far the only one of its kind in the great province of Szechuan with a population of over seventy millions. It was established in 1913. Even if we assume that the ability of the college is as great as some colleges in western countries, that is being able to train 50-100 doctors a year, the total number of its graduates would still be far from being adequate to meet the demand of the minimum medical service that is required by such a vast population. Actually because of the lack of sufficient financial support and being very short in teaching personnel and laboratory facilities, we have been able to train only 297 doctors in these thirty-two years. Since sixty-five out of this two hundred and ninety seven have had to stay with the college to participate in the teaching program, one can imagine how little has been done in supplying the number of doctors that are actually needed to serve in the country. Two hundred and thirty doctors in seventy million people means three hundred thousand people are sharing one. Comparing this with 800 to 1500 people to a doctor in western countries, one immediately notices the most urgent need of medical service in this part of China. In the past because of the interior geographical location of this province and inconvenience in transportation, practically no Chinese doctors have ever come from the east, the small number of our graduates was almost the only group in the field . Therefore, the ultimate purpose of this college has always been to speed up training as many competent medical doctors as possible to meet the civilian need in the country on the one hand, and to extend our service to the local people by providing as many hospital beds as possible on the other. The latter naturally would aid the former in offering a better opportunity for the teaching of clinical students. The result of our effort toward the first object is shown by the accompanying graph representing the number of our graduates each year since 1920. From the curve one can figure out the number of graduates in each five-year interval as follows:

Years	No. graduates for each 5-year interval
1920-25	15
1926-30	22
1931-35	41
1936-40	76
1941-45	143
Total.	297

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One can easily see that we have been nearly doubling our effort every five years and the number of graduates 46 for 1945 when compared to 11 for 1936 prior to the war, indicates a more than four-fold increase.

In the past, prior to 1941, our students had to obtain their internship in the Canadian mission hospitals and the E.N.T. hospital of the Methodist Episcopal Mission inside the city as the college had not got a teaching hospital of its own. This was certainly not convenient for the students on the one hand and denied the opportunity for the close cooperation of the various preclinical and clinical departments, on the other. However, with much help from both western and Chinese friends, we were able to build our own teaching New University Hospital adjacent to the medical-dental building inside the university campus and got it completed in the Spring of 1942. It has a maximum capacity of 250 beds and only since then have we been able to concentrate most of our teaching in a single locality and our efficiency has thus increased to quite a great extent.

Among the achievements that we have made toward our second object i.e. to extend the medical service to the local people, which may be mentioned are:

1. The contribution of more hospital beds for in-patients by our new university hospital.----Before the first municipal hospital of Chengtu was established in the spring of 1942 which maximum capacity was only a hundred beds, the city's civilian population of approximately half a million, depended for their medical service solely on the Canadian Mission hospitals for men and women and the E.N.T. hospital of the Methodist Episcopal Mission the total capacity of which was then only three hundred beds. The need for more hospital beds is certainly without any question. The big number of hospital beds (250) and spacious out-patient department with the help of our teaching staff and big number of interns provided by our new university hospital, have certainly helped to solve this urgent need of the city.

2. Contribution from the college T.B. Sanitorium----Although we have no statistical data as yet regarding the prevalence of tuberculosis in this part of China, we have reason to believe that the figure would not be low. Nevertheless, the first T.B. sanitorium of this great province was not established until 1939 under the auspices of our college. It has a capacity of only forty beds. However, it has benifited already over 700 patients since its opening. Such an important project needs certainly, to be greatly extended as soon as possible.

3. Contribution from the college Leper Hospital----Although the climate of Szechuam is not typically favorable for the development and spreading of leprosy, yet there have been quite a few cases seen around. Dr. Wallace Crawford, heading our department of public health and preventive medicine has been very keen on this problem. With his deep interest and capability he was very successful in raising funds from friends and erected the first Leper Hospital of its kind in Szechuan in 1939. The hospital could accommodate as many as thirty patients. Since its opening not less than a hundred cases have been received into the hospital and benifited by the treatment given.

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4. Contribution by our faculty members in the experimental public health work and in the isolation and treating of mental cases undertaken by the municipal government----In the past few years the members of our department of public health and our psychiatry specialist Dr. Y.L.Cheng, have been constantly supervising the work of the Wenkiang Experimental Public Health Station and the Municipal Mental Hospital respectively, without whose effort the carrying out of such projects would hardly be possible.

5. Planning of a college course of nursing----It's all too obvious that no hospital could function with doctors alone. In other words good and efficient nursing service is as equally indispensable as medical service. In the past, nursing training here in this province, has been undertaken chiefly by the Canadian Mission hospital. Unfortunately, the standing of the said nursing school is rather low for one reason or the other. We have long thought of raising the standard but because of the lack of well trained nursing instructors, we have to postpone our plan. Then in 1942, the Pacific war brought us a group of very highly educated and competent nurses from the Peiping Union Medical College to reopen their nursing school. We immediately invited them to collaborate with us in our new university hospital and made plans for a college course of nursing. We consider this to be a grand opportunity as while they are here, they may help us to make a good start and lay down a good fundation for this project that we have long had in mind. They have been here nearly three years and have already had three classes of students of college standing. Now the V-Day has come and soon they will be going back to their original school in Peiping. From then on, we shall take over what they have already built for us and continue the development of higher nursing education. We have high hopes that such college trained graduates shall be in a better position to act as nursing instructors and leaders whom we need very urgently for the expanding of nursing education in Szechuan in the near future.

6. Organization of the United Hospital----In order to speed up our program, the college undertook to bring forward close cooperation between the three mission hospitals where our students used to obtain their internship, the T.B. sanitorium, the Leper hospital and the new university hospital by organizing them into a United Hospital in the fall of 1942. The post of the general superintendent is held concurrently by one of our senior faculty members. Through such an organiation, division of service by the various hospital units was arranged. For instance, obstetrical and gynocological services are now concentrated in the new university hospital while all E.N.T. cases go to the E.N.T. hospital of the Methodist Mission, etc.. Our interns are assigned to rotate their service and learning and at the same time, our clinical staff members are serving as residents, visiting physicians and surgeon in these various hospitals mentioned above. It must be pointed out that it was this organization that made the training of our 46 graduates in 1945 possible. Otherwise, we could never hope to accommodate so many interns in a single hospital at one time.

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Perhaps it will not be out of place to point out that while the college has been trying very hard during these years to speed up our medical program and as a result, ~~the number of our medical graduates~~, the number of our graduates has been increased very markedly, the size of our faculty has however, remained small with little or no increase. For instance the total number of our faculty member in 1937 was 37 whereas that of this year is 46. In several of our departments, there is still only one professor with one assistant throughout these eight years. As a result, most of our senior members have been tied up with so much teaching and administrative duty that they just could not have time and energy for pursuing original research work which is recognized nowadays as of equal importance as teaching in promoting higher education.

Because of excessive consumption due to incorporating the Cheeloo Medical students in addition to a greater number of students taken in by ourselves on the one hand, and without an opportunity for replenishment on the other, our equipment had depreciated tremendously and our supplies have been used almost to the last drop. If there are friends interested in the affairs in this part of China, we wish they would look at these facts that we have thus presented. Help with medical specialists and equipment or supply are certainly most needed and would be deeply appreciated by the people as well as the medical workers here.

Nov. 27, 1945

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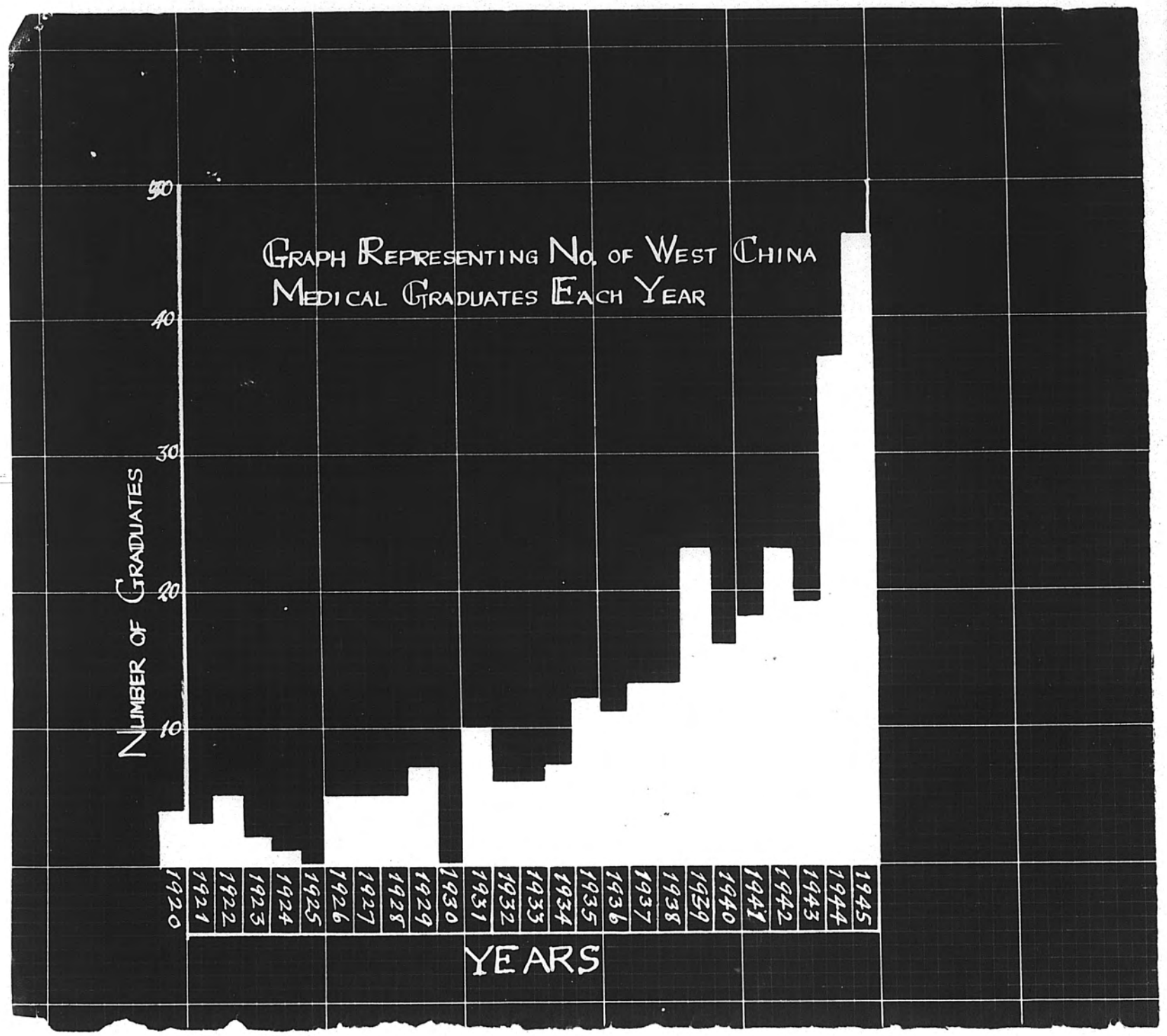
Graph Representing No. of West China
Medical Graduates Each Year
Number of Graduates
50
40
30
20
10
1920
1921
1922
1923
1924
1925
1926
1927
1928
1929
1930
1931
1932
1933
1934
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1936
1937
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