

AN EXAMPLE OF COOPERATION
WITH THE CHINESE IN MEDICAL
EDUCATION *F. C. YEN, M.D., D.T.M.
CHANGSHA, CHINA

The leaders in medical science in China to-day are agreed that in medical education lies the strategic basis for future development. In order to accomplish the most for China and to confer a permanent blessing on her people, they realize the necessity of conserving the comparatively insufficient resources of men and money, and of utilizing to the best advantage all available energy and effort in the training of Chinese doctors. With the limited supply of men and money from foreign sources, it is suicidal to spread out over the whole field waiting to be occupied. As Dr. Gillison said, "Plant all the hospitals and all the doctors in civil and military practice in Great Britain and Ireland in the one province of Szechuen, and provide for the rest of China in the same proportion, and you have some idea of the goal to be reached." And this leaves out of account the entire field of medical education, which is to supply the doctors needed.

The present opportunity is superb for medical men to do educational work, and thereby shape the medical situation for China. Delay now means permanent loss, for when China has organized her own medical institutions, the opportunity will be forever gone. The need of uniting all available forces in establishing union medical schools in strategic centers, in order that the limited foreign funds and men may be fully conserved, has already been sufficiently urged, and several such schools are now in operation. The purpose of this paper is to invite serious attention to a working example of cooperation with the Chinese in medical education on a new basis.

The advantages of such cooperation are:

1. The good will of the Chinese is enlisted. When they are made partners, opposing forces are changed into promoting ones.

2. Suspicion is removed. Cooperation brings closer touch with the Chinese and a truer understanding of the real purpose of missionaries in China, thus averting the besetting dread of the Chinese of foreign aggression in educational work. The result is increased confidence in foreigners and their activities and motives.

3. The advice and practical aid of the Chinese workers is indispensable in adapting such institutions to Chinese requirements. Only a Chinese can fully understand the Chinese point of view.

4. Cooperation with the Chinese gives the work more permanency. In medical as in other lines, foreigners are merely laying foundations on which the Chinese themselves must build. By cooperation alone is the work made continuous and lasting.

5. Through cooperation the Chinese learn the best methods of conducting schools, and foreign educators are enabled to direct the proper expenditure of funds.

6. With government recognition, the work is viewed with favor by the Chinese.

There are, to be sure, certain disadvantages, but the merits of cooperation vastly overbalance these, and in most cases the difficulties are easily overcome. Having enumerated the advantages of cooperation with the Chinese, let me describe to you a cooperative agreement at Changsha between the Chinese and Yale which is now in full operation. Those who are seeking examples of such cooperation may, perhaps, profit from the recital of an actual experience.

This movement took a practical form in the summer of 1913, but Yale had been patiently and carefully paving the way since 1906. During these years the one aim was to cultivate friendship and good will with the Chinese, and to win Chinese interest and confidence in the Yale work. To this end, every effort was made to give practical assistance to the Chinese in such affairs as Red Cross work, combating epidemics, and in making effective sanitary reforms. So in 1913, when a large gift was secured in America for the erection of a new Yale hospital, the Chinese were at once interested, and appreciated the opportunity. On their own initiative, over eighty of the prominent gentry of Hunan, led by provincial officials, sent a joint petition to the governor, requesting him, in the name of the Hunan government, to enter into a working agreement with Yale for the immediate establishment of a medical school. This request was granted, and the agreement was signed in July, 1913, between Yale on the one side and the governor, representing the Hunan government, on the other. Thus was born the Hunan Yale Medical School.

I wish again to emphasize the fact that the cooperative agreement was developed at the initiative of the Chinese, but that the way was paved by a steadfast and definite policy on the part of Yale extending over seven years. In addition to opening a new medical school, with standards similar to those in the West, the cooperation also undertook to maintain two nursing schools for men and women, respectively, a hospital and a research department for the investigation of public health problems and diseases peculiar to China. By the agreement, the Hunan government is to provide the necessary school buildings, costing \$156,000 (Mexican), nine acres of land, amounting to \$50,000, and an annual sum of \$50,000 (Mexican) for the maintenance of the school and hospital. Yale undertook to furnish a hospital costing \$150,000 gold, and the salaries of fifteen doctors.

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Control is vested in a board of managers of twenty members, ten Chinese and ten from Yale. The board, when formed, is self-perpetuating, but undesirable members may be removed by a three-fourths vote of the board. In case of vacancy, the board has the right to elect new members, but such elections require a three-fourths vote of the members to become valid. Current business is in the hands of an executive committee, elected by and from the managers. The agreement provides for a probationary period of ten years, and is subject to indefinite continuation, if proved successful. Land costing 80,000 taels has been purchased adjoining the Yale campus. Of this sum Yale gave 20,000 taels, the Hunan government 50,000 taels, and the land owners 10,000 taels. A medical preparatory department and two nurses' training schools were opened in the fall of 1913.

Before the agreement was put to a practical test, it was feared by Yale that certain delicate matters would present practical difficulties. One of these problems was in connection with religious instruction, but the difficulty was easily met by a clause insisting on the importance to the society that physicians should be men of moral character, and providing that, while students were to have entire religious freedom, teachers were also to be free to give religious instruction. With a board whose Chinese representatives were chiefly non-medical men, it was feared that unreasonable interference on technical matters might impair the efficiency of the school; but it was soon found to be quite otherwise. The Chinese members voluntarily placed the entire responsibility in all technical matters in the hands of the Yale medical staff. Besides, the rules of the Hunan Yale Medical Association provide that professional management of the hospital and school shall be left with the two medical members on the committee.

The appointment and dismissal of teachers, it was feared, might become another serious difficulty. The Chinese might introduce their own friends, regardless of qualifications. But this fear was removed by leaving nomination for appointments entirely in the hands of the two medical members of the executive committee, and making dismissal of teachers require a three-fourths vote of the board of managers, on the recommendation of the medical faculty.

The difficulty of the language to be used as a teaching medium was also readily solved. The opinion of the Chinese managers was asked, and their decision was unanimous that English should be employed. It seemed evident to them that the difficulties in giving adequate medical instruction in Chinese, and the ideal of making this a first-class medical school, alike made the use of English imperative. Of course the pre-medical course, and perhaps part of the lower years of the medical course, would require more or less explanatory instruction in Chinese; but the opinion was unanimous and enthusiastic on the part of the Chinese that graduates should have a good working knowledge of English and that the more technical instruction should be in English.

In the midst of progress there came a serious setback. A small group of Chinese, claiming to represent the western medical profession of the province, from motives of jealousy and self-interest, attempted to wreck the Hunan-Yale scheme. At a time when Hunan was suffering from the effects of her declaration of independence from the central government (August, 1913), it seemed easy to ruin the scheme.

The governor who had put the agreement through lost favor at Peking and was removed. This gave the opposition its opportunity at Peking, and a decision of the cabinet ordered the Hunan-Yale agreement to be canceled. For a time difficult problems confronted Yale. Analysis of the situation resolved it into two propositions:

1. Was it worth while to revive the cooperation, if an agreement officially made with the Hunan government could be so easily canceled at Peking?

2. If worth reviving, should Yale bring diplomatic pressure to bear at Peking, or should the Chinese use their persuasive influence on their own cabinet?

Yale unanimously decided to adopt the latter policy in the belief that if the movement could not be revived by reasonable explanation, no real cooperation could take place.

After securing the approval of the new governor, who quickly became a warm friend of the movement, representatives were sent to Peking to ascertain the nature of the opposition. They found that the objections, which were largely misrepresentations by the opposing party, were easily explained. Only one real issue was raised by the Peking government. Since the movement was the first of its kind, representing the cooperation of a private foreign body with a provincial government, Peking feared that it might later be used as a precedent by other foreign organizations whose motives might not be so sincere as those of Yale. Consequently, the services of thirty leading Hunan officials resident in Peking were secured to organize an association known as the Hunan-Ru'chuen Educational Association, and an agreement similar to the original one was signed between it and Yale. The agreement met the formal approval and sanction of the cabinet, as well as of the Boards of Education, Finance, the Interior, and Foreign Affairs. The Ru'chuen Association thus acts as a technical intermediary between the government and Yale. All the financial undertakings called for in the agreement are, in reality, carried by the government.

Thus the Hunan-Yale Medical School was revived. This time it has been placed on a still firmer basis because it has been registered with the central government as well as with the governor of the province. The cooperation is made stronger and more real because no foreign pressure was used in its revival. The movement has stood a severe testing. It was subjected to the scrutiny of the cabinet twice, was approved by three governors, and supported by two parties of opposite political views. The fact is significant that though at present the provincial treasury is depleted, and though the authorities are trying in every way to reduce expenses, educational and of other sorts, yet they are sincere in their desire to discharge their obligation to the Hunan-Yale Medical School. Two payments totaling \$20,000 have been made, and a large building worth \$50,000 has been reserved for the use of the school and hospital, pending the erection of permanent buildings.

The medical preparatory school with nineteen students, and the two nursing schools with thirty-five students, are now in full operation, and the Yale hospital is under the direction of the joint board. This represents the Hunan-Yale cooperation in medical education. It is taking place in Hunan, a province in which provincialism and local pride, to say nothing of nationalism, run high. If it is possible in Hunan, it must be possible in many other places in China. The time has

come when the Chinese look on cooperation with favor. Where it is sought it will be found; but progress must be patient and slow, if lasting results are to be obtained. The first essential is to remove all opposition, and to secure the friendship, good will and sympathy of the Chinese. To overcome opposition, the resources of Chinese friends must be sought. One man who has made friends out of opponents for the work in Changsha is an elderly Chinese doctor who has made both fame and fortune in the practice of Chinese medicine. When he was won over he gave up his lucrative practice and resigned the presidency of a Chinese medical school. Not only does he lend financial and moral aid to the Hunan-Yale school, but he sends many rich and influential patients to the hospital and on every occasion testifies to his conviction that Western medicine is better than Chinese.

When opposition is removed, indifference and apathy must be transformed into keen and proprietary interest. Indifferent cooperation is not productive of effective results. Unless the Chinese have an intense and vital interest aroused, cooperation is in name only. Here are needed those Chinese who command esteem and respect among their countrymen. Revival of the Hunan-Yale movement would have been difficult without such Chinese as General L. Chang, who from long contact with foreign institutions knew exactly what they stood for, and from his important official position as military adviser to the president, commanded the confidence of the people. Because of this, he was able to convert the previously uninterested officials in Peking into actual promoters of the movement. At Changsha Yale is fortunate in having another friend, the son of a governor, whose close connection with the gentry gives him great influence with his fellow provincials. Three principals of the three most important middle schools, as well as the commissioners of education and police, are among the members of the board of managers. Indeed, the strongest asset of the Hunan-Yale Medical School is the great and practical interest taken in its work by the Chinese members of the board. This interest has been worked up by this one man.

Hunan-Yale represents a thorough and wholesale cooperation in medical education with the Chinese. It is a brave attempt in that its success is yet to be proved. It is a risky enterprise in that the coalition has yet unforeseen difficulties to face. It means self-denial and sacrifice on the part of the foreigners concerned, but it is worthy of the most serious consideration. The time has come when cooperation with the Chinese is no longer an ideal dream but may be materialized in fact. The Chinese are getting to know the foreigners better, and to understand their real motives, and are prepared to unite with them in such movements as this. But the initiative must come from foreigners. Where cooperation is sought, it is given, but the degree of success must necessarily depend on the spirit in which it is entered. In proportion to the fairness, loyalty and enthusiasm of the foreign party will be the cordiality, interest and support of the Chinese.

DISADVANTAGEOUS PATHOLOGIC CONDITIONS

Moreover, an examination of the pathologic changes involved in the process, clearly demonstrates the difficulties of treatment and of cure without deformity. Poor general condition is always present, as tuberculosis of the bones and joints is usually secondary to infection elsewhere, bacteria and toxins being carried by the blood stream to the part. In children, the favorite site of the initial involvement in the knee is usually near the epiphyseal line of the femur or tibia at the edge of the reflection of the synovial membrane. Whether the latter is involved before the bone, is not usually demonstrable, but it suffices to state that in this well-established case of tuberculous knee, in children at least, an osteal involvement shown early as an epiphysitis and later by a distinct bone focus and bone destruction, is present. This destruction of bone, usually accompanied by a roughening and destruction of the joint surfaces with either primary or secondary synovial disease, often becomes progressive and with the tissue detritus and pus which are the usual concomitants of tuberculous osteal disease, forms the typical picture of a partially and sometimes wholly disintegrated joint—clearly a difficult and stubborn condition with which to contend. It would seem, in the light of our present knowledge of the essentially imperfect, if not generally poor results obtained by our usual treatment of this condition, that the quickest, safest, and indeed, most successful method of treatment would be excision of the entire joint, doing away at once with the dangerous and deleterious process. This, without question, is the treatment *par excellence* in adults, in whom speedy return to function is the chief consideration. But in children, unfortunately, this method cannot be employed except as a last resort, for here we are confronted by the problem of growth. Any destruction or interference with even a small part of either epiphyseal line will produce shortening of the leg, often so great that it offers an end-result worse than that for which it is substituted. The treatment of this condition in children must, then, be conservation—and all our treatment, both general in an attempt to raise bodily resistance, and local by absolute quiescence to nullify all possibilities of strain or trauma to the affected part, must be directed to this end. That we are, however, asking nature considerably to extend herself in restoring form and function to a partially destroyed joint, is apparent.

SELECTION OF TREATMENT

Of equal importance with the foregoing in the determination of result, is the form of treatment employed. Before treatment can be instituted, however, a correct diagnosis must be made. There are certain positive facts which, taken in combination, point definitely to tuberculosis of the knee. These are, briefly, a history of long duration of limp and pain; trauma (in about a third of the cases); family predisposition or exposure to tuberculosis; exacerbations; loss of appetite, sleep, and weight; night cries; slight, but not marked, fever; a knee which is hot, swollen, tender, and held in flexion with spasm, boggy, rather than filled with frank fluid, with a synovial and often a bony thickening apparent; atrophy of calf and thigh; a positive tuberculin (von Pirquet) reaction with a relatively low leukocytosis; and an appearance by Roentgen ray which early shows in addition to fluid in the joint, a rarefaction and enlargement of

the epiphyses of both bones with a squaring of their corners (as seen anteroposteriorly) and a deepening and squaring of the intercondylar notch, with later a focus of bone destruction becoming apparent. The early diagnosis of tuberculous knee is often very difficult. Only fragments of the complete picture may be obtained, the local conditions may be obscure or confusing, and the roentgenogram is frequently negative. For this reason much valuable time may be lost before the true character of the disease is manifest, time during which the destructive process is rapidly progressing. It is also evident that the result of incorrect diagnosis may greatly influence prognosis, even though it be quickly revoked. Syphilis, scurvy, hemophilia, acute synovitis, osteomyelitis, toxic or infectious arthritis may all receive their appropriate treatment, none of which is beneficial, and many of which are distinctly prejudicial to the real condition. The mere neglect of the immediate inception of immobilization of the knee is deleterious, but the institution of treatment for, say, an acute pyogenic infection, that is, prompt incision and drainage, is distinctly contraindicated in an early tuberculosis. Indeed, the number and variety of operations to be attempted on a tuberculous knee in a child are distinctly limited. Secondary infections of long-draining sinuses or unhealed incisions may be expected with the possibility of a severe general, or occasionally fatal, infection following. Attempts at the eradication of the focus unless it is very definitely localized, or of diseased tissue, very rarely favor the course of the disease. Absolute rest and non-interference are our best weapons for combating the local condition.

GENERAL TREATMENT

That the non-operative treatment is the method of choice, to be employed so far as possible throughout the course of the disease, the results of the following cases treated at the Children's Hospital amply attest. These comprise all cases of tuberculous knees admitted to the clinic during a period of thirty years, from 1880 to 1910, inclusive, on which a satisfactory diagnosis and record have been obtained, and the end result of the treatment known. No case treated in the last three years has been reported, in order that a fair length of time might have elapsed before results were noted. The original number of cases has therefore been reduced from about seven hundred to two hundred and fifty-one, which latter number furnishes the data for the following study of end-result in relation to treatment in this affection.

The general treatment of these cases has varied but little during the time covered by the series, and as a rule was as conservative as conditions would permit. In brief, the usual treatment consisted of protection from motion and weight-bearing by fixation in a plaster cast in combination with a Thomas knee-splint, with or without traction, a high sole on the unaffected leg and crutches being supplied. The cast and splint were kept on and the child allowed to go about with crutches until marked improvement was shown, as evinced by lack of local heat and spasm. The cast was then gradually omitted and the splint altered to a convalescent form and later omitted altogether. In the acute cases in which there was much muscular spasm, pain and flexion deformity, rest in bed with traction to counteract the spasm and reduce the deformity was considered essential until the most acute symptoms subsided. Whenever possible,