

# *Scaling Peaks in Medical Science*



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## FOREWORD

Chairman Mao's proletarian line has guided China's medical and health workers to amazing achievement. Shortly after nation-wide liberation in 1949 many endemic and infectious diseases that undermined the people's health and endangered their lives were brought under control or stamped out altogether, thus ending the miserable situation in old China as described in Chairman Mao's poem:

**Weeds choked hundreds of villages, men wasted away:  
Thousands of households dwindled, phantoms sang  
with glee.**

Making medical science serve the people is the core of Chairman Mao's proletarian line on health work. However, Liu Shao-chi and his agents in health departments pushed a counter-revolutionary revisionist line which centred medical and health work in cities, to serve the few, to the neglect of the health of the vast masses of the labouring people. They spread as hard as they could "the philosophy of servility to things foreign" and "the doctrine of trailing behind at a snail's pace", preaching "technique first" and inducing medical workers to seek a name and career for themselves. They led medical science up a blind alley by divorcing it from proletarian politics, from practice and from the masses, and thus placed serious obstacles in the way of developing China's medical and health work.

The storm of the Great Proletarian Cultural Revolution smashed Liu Shao-chi's counter-revolutionary revisionist line, and Chairman Mao issued the great call "**In medical and health work, put the stress on the rural areas.**"

Inspired by Chairman Mao's instruction, medical workers went to the countryside and mountain areas, deep into basic units, to serve the workers, peasants and soldiers. Since the Cultural Revolution, 300,000 urban medical workers and medical school or college graduates have settled down in the countryside or frontier areas. Rough figures show a total of 400,000 person-trips to the countryside made by city medical workers, and a great number of "barefoot doctors" (medical trainees selected from among peasants without being taken away from farm work) have risen to help. Some provinces, municipalities and autonomous regions have on the average two or three "barefoot doctors" in every production brigade. The system of cooperative medical service is catching on in the rural areas, being initiated in half of the country's production brigades. A mass movement of combining Chinese traditional and Western medicine and using medicinal herbs to prevent and cure common and recurrent diseases is developing fast. Medical and health work has undergone tremendous changes in the vast rural areas.

Within only a few years, medical workers and masses together have done amazing things. Patients can be anaesthetized by inserting one or several needles into certain points of the body, making surgical operations possible. Insertion of an acupuncture needle restored the hearing and speech of deaf-mutes and enabled the blind to see, and paralytics to stand up and walk. A limb completely separated from the body for twenty-four hours

and another with multiple amputation were rejoined. With simple facilities and little experience, medical workers removed a tumour weighing ninety *jin* (forty-five kgs.) for a patient pronounced incurable by bourgeois "authorities". A worker with serious burns over 98 per cent of his body and a Red Guard whose heart had stopped beating for twenty-five minutes were saved.

These new and amazing events in the medical field are great victories of Chairman Mao's proletarian line in medicine and of following the orientation of medical science serving the people. Only when medical workers persist in this fundamental orientation will they dismiss ideas of personal fame and gain, fear neither hardship nor death, and steadily improve their skill so as to scale new peaks in medical science.

These achievements have resulted from the medical workers' study and application of Chairman Mao's philosophic thinking. Materialist dialectics is a powerful ideological weapon in developing China's medical science, its application enabling the medical workers to ward off constantly the influence of metaphysics. Thus, in poor conditions, the medical workers have cured many difficult diseases declared incurable by bourgeois "authorities" and broken through many "limits" in medical science.

These achievements are at the same time the result of combining Chinese traditional and Western medicine — the only way for developing China's medical science. The present mass movement of combining Chinese traditional and Western medicine and using medicinal herbs is of far-reaching significance. To treat patients with a needle or a handful of medicinal herbs is simple, convenient and economical. With these, many common and recurrent diseases have been cured, and a great contribution made

to protecting the lives and health of the working people. Continued development along this line will surely bring new splendour to China's medical science.

To acquaint the reader with some of these new achievements we have selected several reports telling how China's medical workers are guided by Mao Tsetung Thought in their efforts to scale peaks in medical science.

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## *Non-Surgical Treatment of Acute Abdominal Conditions*

Chung Hsi

CHINA'S medical workers have cured many patients suffering from acute abdominal conditions without operating. They have done this by combining Chinese traditional and Western medicine and by exploring the treasure house of Chinese medicine and pharmacology.

Acute abdominal conditions include acute appendicitis, intestinal obstruction, pancreatitis, perforated ulcer, cholecystitis, gall-stones, biliary ascariasis and extra-uterine pregnancy. Such disorders occur suddenly and develop quickly, causing acute abdominal pain. They may endanger the patient's life if not treated promptly. Formerly patients with such disorders usually had to undergo surgery. Now, by applying Mao Tsetung Thought in medical practice, doctors have broken through the use of surgery, mainly, to treat acute abdominal disorders. By combining Chinese traditional and Western medicine, they have relieved many sufferers from such disorders without operating, opening up new prospects in this field. Abundant clinical practice shows that the combined Chinese traditional-Western method obviates surgery in many

cases, deals effectively with the disorder and reduces the mortality rate. Workers, peasants and soldiers like this new method because it frees the patient from surgery, is simple and inexpensive, and adaptable everywhere.

Western medicine generally prescribes surgery for acute abdominal disorders. Although an operation often solves the local problem and may save the patient's life, it involves the dangers of infection and abdominal adhesions, and in some cases the disorder recurs after the operation. To cure these disorders without surgery and prevent side-effects, Chinese medical workers have for many years been seeking new methods in line with Chairman Mao's teaching: **"Chinese medicine and pharmacology are a great treasure house, and efforts should be made to explore them and raise them to a higher level."** In the provinces of Liaoning, Shansi, Hupeh, Fukien, Hunan and Shantung, the municipalities of Peking, Tientsin and Shanghai, and other places, medical workers gained insight in using Chinese and Western medicine in combination to treat acute abdominal disorders. They treated many patients in the revolutionary spirit of daring to think and act, and the scientific approach of seeking truth from facts.

In April 1971, the former poor peasant Yao Ching-lu, who lived on Tientsin's western outskirts, suffered from acute appendicitis with diffuse peritonitis. He was rushed to Nankai Hospital in Tientsin in critical condition due to intestinal paralysis. Emergency surgery would have seemed indicated, but this time no operation was done. Instead, acupuncture treatment was given to reduce the intra-abdominal pressure. The doctors administered Chinese medicine, applied anti-inflammation powder externally, and gave infusions. Yao Ching-lu felt less pain the

same day, while on the next, he felt his abdomen relaxed. He began to eat on the fourth day and was discharged, without any symptoms, on the tenth.

In Western medicine, gall-stones are generally removed surgically, but there is a high rate of recurrence and repeated operations are not uncommon. At Tsunyi Medical College in Kweichow Province and some other places, doctors treat the disease by a combination of Chinese traditional and Western medicine methods. The patient is given a "stone-removing mixture" and some Western drugs which stimulate contraction and dilation of the gall-bladder sphincter. This method, applied in combination with other therapies allows the stones to pass out through the intestine. When the stones are large or the bile duct narrow, they combine surgery with administration of the "stone-removing mixture", so as to remove not only large stones, but clear out tiny ones that might be missed at operation.

A veteran cadre in the Anshun area, Kweichow Province, had suffered from gall-stones for many years. Some hospitals insisted on surgery, but he was too weak to undergo the operation. Then he was sent to the hospital attached to the Tsunyi Medical College and treated by the combined method. He began passing his gall-stones five days after starting treatment, and over a period, passed more than a hundred stones, the largest with a diameter of one centimetre, and the smallest the size of a grain of sand. The patient has fully recovered and gone back to work.

Extended clinical practice shows the new non-surgical method widely applicable in treating various acute abdominal disorders. Since 1962, Tientsin Nankai Hospital has treated more than 5,700 patients with encouraging re-

sults. Over 80 per cent of the cases of acute appendicitis including those complicated with peritonitis, over 90 per cent of the acute pancreatitis or acute biliary ascariasis cases, over 70 per cent of acute cases with perforation of ulcer, and over 50 per cent of the acute intestinal obstruction cases were handled with this new method, without operation. In 1958, Tsunyi Medical College in Kweichow Province began using combined Chinese traditional and Western medicine in acute abdominal disorders. In the past two years they have used the combined method in more than 1,500 cases of eight kinds of common acute abdominal disorders, such as acute appendicitis and gallstones, with success in about 90 per cent. The mortality rate was lower than when surgery alone was used, and the expense less. For over ten years medical workers at the First Hospital attached to Shansi Medical College have followed the road of integrating Chinese traditional and Western medicine. Without operation, they treated 520 cases of various kinds of extra-uterine pregnancy, saved the patients' lives and preserved their ability to have children.

In treating acute abdominal disorders with the new method, medical workers have followed Chairman Mao's instruction of **making the past serve the present and foreign things serve China**. They critically take over China's medical and pharmaceutical legacy, and absorb and apply the good points of modern medicine. Doctors of Chinese traditional medicine and of Western methods co-operate and learn from each other, which has helped place diagnosis and treatment of such disorders on a new level. Chinese traditional medicine is rich in clinical experience of treating abdominal disorders. For instance, appendicitis is called "gripping intestinal pains" by Chi-

nese traditional doctors, and there are many prescriptions for treating it in ancient medical literature. These prescriptions belong in the category of purgatives, which are forbidden in Western practice as spreading the inflammation and aggravating the patient's condition. However, from experiments on animals, medical workers find that some purgation improves circulation of the blood, stimulates peristalsis and builds general resistance. If other drugs are used simultaneously to eliminate poison and improve blood circulation, the inflammation will gradually subside. Good results have been achieved in treating acute appendicitis and peritonitis with combined Chinese traditional and Western medicine. For dehydrated patients with intestinal obstruction and peritonitis the medical workers gave infusions in addition to the purgatives, solving a problem which Chinese traditional medicine alone was unable to solve.

Still, China's medical workers feel that their successes in treating acute abdominal disorders by combining Chinese traditional and Western medicine should not stand in the way of further developing and popularizing the method, which is still in a preliminary stage. They will continue studying and practising.



## *Single-Needle Acupuncture Anaesthesia in Pulmonary Resection*

Peking Tuberculosis Research Institute

IN THE course of popularizing traditional Chinese acupuncture treatment, Chinese medical workers have created anaesthesia by acupuncture, a completely new method. Anaesthesia is induced by needling certain points on the patient's body making him insensible to pain while remaining fully conscious during a surgical operation. It does not require complicated apparatus or heavy doses of drugs. A few needles, or only one, are inserted at certain acupuncture points on the patient's limbs, ears, nose or neck. Analgesia follows a period of inducement and stimulation by twirling the needles in preparation for various surgical operations.

The Chinese labouring people from ancient times have used acupuncture to relieve pain and treat disease. The development of treatment to anaesthesia by needling is a leap forward in the science of acupuncture in China. This anaesthesia method is safe, effective, and easy to use. It is suitable in city and countryside, and on the battlefield. The patient does not suffer from post-operative dizziness, nausea, abdominal distention or other unfavourable side

reactions, and is especially suited to surgical patients with poor liver or kidney function, or who are over-sensitive to anaesthetics. The method is welcomed by worker, peasant and soldier patients because they can move about and take food soon or immediately after the operation and, in general, recover more rapidly.

By the end of 1970, 400,000 patients in different parts of China had undergone surgery with acupuncture anaesthesia.

Our research institute has a six-year history of using acupuncture anaesthesia in surgery, performing pulmonary resection for 450 patients, with success in 98 per cent. Guided by Mao Tsetung Thought, we have increased anaesthetic effect in the course of practice and reduced the number of needles required. The technique has been continuously improved.

Our first successes in pulmonary resection under acupuncture anaesthesia were in 1965, after we studied the experience of other hospitals. Since the start of the Great Proletarian Cultural Revolution in 1966 Chairman Mao's revolutionary line on health work has found wide popular acceptance, and our clinical application and scientific research in acupuncture anaesthesia have made rapid progress.

When we began using acupuncture anaesthesia in lung operations, we applied as many as forty needles on the patient's limbs, occupying four persons to twirl them. We had thought the more the needles, the better the anaesthesia. Practice showed, however, that this was not necessarily so. We reviewed the role of needling, which is mainly to bring into play positive factors in the human organism resisting external stimulation, so that pain is alleviated or stopped altogether. We also found that

needling at some points was not so effective, at other points, brought an opposite reaction, such as irritation, and at still other points, produced unfavourable side-effects. Needling at some auxiliary points often interfered with the effect of needling at major points and lessened the anaesthetic effect. So we omitted some of the auxiliary points, and got better results.

A patient who had surgery under general anaesthesia felt acute pain in the wound, which even morphine injections failed to alleviate. We treated the patient with acupuncture at a few selected points and the pain soon stopped. This showed that even severe pain could be controlled by needling at a very few points. We decided to reduce the number of insertions still further.

Also we tried twirling the needles on the upper and lower limbs of the affected side only, instead of twirling them on all four limbs simultaneously. The effect was about the same. So we reduced the number of needles by half, inserting sixteen. Then, after further elimination, we applied only twelve needles. The anaesthesia was improved, and just two acupuncturists were needed for one operation.

But we were not satisfied. We made further experiments in a mass campaign, involving our entire staff. We selected and verified the effect of acupuncture points, in groups and singly. After half a year's practice and continuous summing up of experience, we used only two needles to induce insensibility to pain for a lung operation, marking another step forward in acupuncture anaesthesia technique.

Later, drawing on a People's Liberation Army medical unit's experience in deep insertion, we explored the possibility of inducing insensibility to pain in a lung operation

by deep insertion of a single needle to stimulate two points at once.

We compared the effect of stimulating the two points, one about one-third the distance between the wrist and elbow on the outer aspect of the forearm, and the other on its inner aspect. According to ancient medical literature, needling at the former point was effective in stopping pain, while clinical practice showed needling at the latter point produced good sedation. Considering anaesthesia to be the first consideration in operations, but that sedation was also necessary in chest surgery, we decided to insert at the point on the outer aspect of the forearm and direct the needle to touch the point on the inner aspect.

We revolutionary medical workers of the institute followed Chairman Mao's teaching: **"If you want to know the taste of a pear, you must change the pear by eating it yourself"**, and tried insertions on ourselves. A volunteer stepped forth without hesitation. The needle was inserted and twirled vigorously. The comrade turned pale and felt dizzy, which showed that the point was extremely sensitive. If the degree of stimulation could be properly controlled, would we be able to produce the anaesthetic effect without the dizziness? Finally, after many trials on ourselves, we found the appropriate degree of stimulation, and since June 1970 have performed more than a hundred lung operations with acupuncture anaesthesia produced by only one needle. Later, learning from the advanced experience of other hospitals, we performed lung operations after needling a point in the ear, on the neck or in the nose, to produce anaesthesia.

Though the single insertion to induce anaesthesia has many advantages, it does not produce complete insensibil-

ity to pain or avert the discomfort resulting from visceral traction, and medication is sometimes needed in addition. There are still gaps in our knowledge and experience, and we must further sum up our practice and results so as to raise our experience to a theoretical level and contribute more towards scaling new peaks in medical science.

*Into the "Forbidden Zone"  
of Deaf-Mutes*

Hsin Hua

*Withered for a thousand years the wistaria puts forth  
new sprouts,  
After ten thousand years the iron tree bursts into  
flower.  
Thanks to our great leader Chairman Mao,  
Deaf-mutes today regain their speaking power.*

**T**HIS IS the song sung by children who were once both deaf and mute in a school for deaf-mutes in Liaoyuan, Kirin Province.

"The iron tree bursts into flower, mutes regain their speaking power" is an old Chinese saying describing things that are impossible. But in the Great Proletarian Cultural Revolution new medical discoveries have enabled deaf-mutes to speak. Under the guidance of Mao Tsetung Thought this "impossible" was accomplished by a medical propaganda team of a Chinese People's Liberation Army unit under the Shenyang command.

In March 1968 the medical propaganda team came to the Liaoyuan deaf-mutes school to give acupuncture treatment. The team consisted of three doctors and five medi-



Medical team members and their cured deaf-mute patients sing revolutionary songs in chorus.

cal orderlies, one of whom had attended junior middle school, but the others had only completed senior class of primary school. None had studied in medical college.

The team was greeted by the children at the school gate, and surrounded by them. A girl named Wang Ya-chin was especially enthusiastic. She grasped the hand of Comrade Chao Pu-yu, one of the team members, and pointed to the portrait of Chairman Mao on the wall and then to her mouth as if to tell the team of her wish to shout "Long live Chairman Mao!" Then, pointing to the Chairman Mao badges the team members wore and touching her own ears, she tried to say she wanted to hear the voice of Chairman Mao. But she could neither hear nor speak. Wang Ya-chin wept, and the team members felt tears come to their eyes too. They would do everything they could to open up the "forbidden zone" of deaf-mutes and enable these pupils to know Chairman Mao's deep concern for them, and to hear Chairman Mao's teachings. These deaf-mute pupils must be enabled to speak, to say what they longed to say!

The news spread quickly throughout Liaoyuan that the P.L.A. men were treating deaf-mutes with acupuncture, and people were overjoyed. But some conservative doctors made remarks like, "I've studied medicine for decades, but I've never heard of using needle treatment for deaf-mutes." And, "There's nothing in foreign books about curing deaf-mutes," etc.

The medical propaganda team decided that the best way to refute this kind of talk was practical examples of curing patients. They started out by investigating, and went to the home of Wang Ya-chin. Her father, Wang Yu-hai, was a miner who knew the suffering from ruthless oppression in the old society. Too poor to marry until he was over forty, Ya-chin was an only child. She had become deaf after a serious illness when she was three. Wang Yu-hai had taken his daughter to one hos-

pital after another but always got the same answer: Nothing could be done to restore her speech and hearing; she was "incurable".

In several days of house-to-house visits, the medical propaganda team comrades saw many deaf-mute children with experiences similar to Wang Ya-chin's, and in the local hospital they found no record of a deaf-mute receiving treatment. They recalled Chairman Mao's teaching: **"The people with real personal knowledge are those engaged in practice the wide world over."** Wasn't this so? But some so-called "authorities" had pronounced this illness "incurable" without ever diagnosing and treating specific cases. They showed only their own ignorance and pretence. These "incurable cases" should rightly be classified as "cases refused treatment". They thought, and were quite sure they could do something in this field, so long viewed as a "forbidden zone".

To protect the patients against even one wrong insertion, the team members practised applying the needles to themselves at the points indicated in acupuncture books as stimulating hearing and speech. They inserted the needles for each other, and some applied them to themselves with the aid of a mirror. When they had finally mastered the procedure, they began treating the children. One day after a period of treatment Chao Pu-yu clapped his hands behind Wang Ya-chin's back. She turned, nodded, smiled and touched her ears. She had heard! Heartened, the team members gave the same treatment to the other pupils with the result that most of them regained their hearing.

Next was the problem of speech. These pupils wanted very much to speak, and expressed their wish by placing their hands over their hearts and weeping. Where was

the key that would unlock their speech? The medical workers reviewed their work so far. They had only had good results with deafness when the needle was inserted rather deep at the appropriate point near the ear. But they had not made deep insertions at the *ya men* point, and the patients felt little effect. They thought: The *ya men* point may be the "door" for curing deafness. Might not insertions too shallow to open the "door" be the reason for the failure of the treatment?

They sought reference material for an answer to this question, but all they could learn from the ancient *Compendium of Acupuncture and Moxibustion* to recent acupuncture books was the rule that the needle should not be inserted at the *ya men* point deeper than 5 *fen*.\* Some articles claimed that an insertion of 1 *cun* would damage a normal person's power of speech, while one of 1.5 *cun* might be fatal.

They questioned again and again: Is 5 *fen* really the limit beyond which an insertion must not be made at the *ya men* point?

At one discussion, they denounced such rigid and pessimistic thinking, realizing that their very early predecessors had over-stepped this limit with serious results. These early medical workers were limited by the low level of scientific development of their time and did not find the cause of their failure so as to start anew. The members of the medical propaganda team said: "We pro-

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\* In acupuncture, the depth to which the needle is inserted varies according to the patient's size. The terms *cun* and *fen* are used to measure this depth. When the patient forms a ring by joining his middle finger to his thumb, the inside distance between the second and third joints of the middle finger is one *cun*, or ten *fen*.

letarian revolutionaries want to relieve our class brothers of their suffering; we must go forward, and not be stopped by the 5 *fen* limit.”

After the discussion, the comrades studied the anatomy diagram of the human body for the location of the *ya men* point in relation to the cerebral nerve, and they consulted how to ensure safety.

Chao Pu-yu first tried inserting the needle into his own *ya men* point. At 5 *fen*, he did not feel much; at 1 *cun*, the sensation was stronger, and at 1.5 *cun*, the stimulus was so powerful that his hands became numb and he found it hard to manipulate the needle. Should he stop there, or should he go on? He knew that if he inserted the needle still deeper the stimulus might be greater, but it might also endanger his life. Facing this crucial test, Chao thought to himself: If I lose my power of speech, it would be worthwhile; if I lose my life, it would not be in vain, as it would be in the interest of serving the people in medical and health work. Revolutionary fighters who follow the road charted by Chairman Mao have always been fearless. With great resolution Chao inserted the needle still deeper into his own *ya men* point. His neck was suddenly congested and his throat burned, while his limbs went numb as if by electric shock. The sensation was what he had hoped for. He withdrew the needle and noted that it had penetrated 2.5 *cun*. He had broken down the limit of the ancients by a good margin!

The team members repeated the new insertion so that all got first-hand experience, then they treated Wang Ya-chin with it. After a series of insertions in three days this girl, deaf and mute for fifteen years, was able to call out: “Long live Chairman Mao!”



Comrade Chao Pu-yu inserts the needle deep at his own *ya men* point.

Deep insertion at the *ya men* point developed into a campaign and, of the 168 pupils at the deaf-mutes school in Liaoyuan, 157 regained their hearing; among these 149

were able to speak. Their once "silent world" was filled with sound.

The medical propaganda team's experience in opening up this "forbidden zone" spread all over the country. But the comrades are neither complacent nor passive. Quite on the contrary, after summing up their successful experience and drawing lessons from failure, they go on to developing further cures for the people.

## *Overcoming the After-Effects of Infantile Paralysis*

Hsieh Chun

**G**UIDED by Chairman Mao's philosophic thinking, medical workers of the Chinese People's Liberation Army No. 208 Hospital have succeeded in alleviating the after-effects of infantile paralysis, long regarded as incurable. Over the past few years amazing improvement has resulted in over 90 per cent of the patients treated. Cripples and paralytics who suffered for several or even a dozen years can stand erect.

### **There's No Disease That Can't Be Cured**

After-effects of infantile paralysis, a common disease, have long been regarded by bourgeois medical "authorities" in China and other countries as "incurable". Is this so? Medical workers of the P.L.A. No. 208 Hospital applied materialist dialectics in making a thorough and systematic analysis of this condition and are of the opinion that it is not. They found some of the damaged motor nerve cells in most of the patients functioning to some degree, and even if partially impaired, the greater part of them as well as the whole nervous system remained

alive. In the human body as a whole, the greater part is still healthy though certain limbs may be paralyzed. The part and the whole are interrelated, affecting and controlling each other. The part can influence the whole but, more important, the whole can activate the part. Therefore, if a way is found to give full play to the role of the motor nerve cells and restore the function of partially impaired cells, given the patient's will power, it is possible to restore varying degrees of function of paralyzed limbs.

Basing on this understanding, they tried with needling to treat the after-effects of infantile paralysis. Practice had shown that ordinary needling had some effect, but

Many children who suffered from the after-effects of infantile paralysis have been cured by No. 208 Hospital.



it was not lasting. It caused temporary changes which indicated some internal stimulation of paralyzed limbs but was not strong enough to cause qualitative changes. The stimulus should be increased. They continued experimenting, gaining accuracy in needling the points that gave stimulus, applied their method in clinical practice, and got fairly good results.

### Treating Each Case on Its Merits

However, though the method they used gave quite satisfactory results in the great majority of cases, some did not respond well or at all, even to protracted treatment.

The medical workers studied carefully Chairman Mao's teaching: **"Qualitatively different contradictions can only be resolved by qualitatively different methods"**, and realized that the after-effects of infantile paralysis differ widely from case to case because of differences in the degree of damage to the spinal motor nerve cells, site of the damage, duration, treatment received, age, physical and mental condition, etc., each case presenting not only universality of contradiction but also its particularity. Only by specific analysis of specific cases, serious study of the particularity of the contradiction and grasping its special law can one find the right method of treatment.

On the basis of clinical observation they first classified the condition into three kinds: relaxed, spastic and mixed. Each of these was of three grades: light, intermediate and severe. Treatment must be made on the basis of specific analysis of each case. When this was done, good results soon followed. A patient afflicted with the intermediate type of the mixed kind of this condition



had a paralyzed right lower limb and seriously deformed right foot for five years, the affected limb showing some relaxation as well as spasticity. The first two treatments were quite unrewarding. Investigation revealed that while the foot deformity was generally in the form of bakers' leg, bandy leg or drop foot, the right foot was completely turned round, sole up and instep touching the ground, which made walking extremely difficult. The foot deformity had its own particularity, which had escaped attention at the two previous treatments, so that the general method was used with no appreciable results. The medical workers, therefore, while treating the relaxation and spasticity, fixed the foot in position to change the habit of walking. After several treatments, the function of the lower limb was in the main restored to normal and the serious deformity of the right foot was completely corrected.

### **Grasping the Principal Contradiction**

The key to treating the after-effects of infantile paralysis is to grasp the principal contradiction and concentrate all efforts on resolving it.

In early 1970 the hospital admitted a worker's daughter with extensive paralysis of many parts of the body. Where should the treatment begin? Her terribly bowed legs drew the medical workers' attention most, as the main cause of her crippling. They concentrated on treating the legs, and the paralysis of her waist and buttocks muscles. Two treatments resulted in her legs becoming a little straighter, but still she could not stand, and soon they were bent as before. The medical workers analysed carefully and studied her case. In a normal person, the

movement of the upper limbs depends mainly on the shoulders, which move the upper arms and in turn the forearms; while the movement of the lower limbs depends mainly on the hipbone, which moves the upper legs and in turn the lower legs, while the waist muscles are closely connected with the hipbone. They believed that the contraction of the buttocks muscles and the laxity of the hipbone joints formed the principal contradiction. They revised their treatment formula accordingly, at first concentrating on stretching the muscles around the joints of the hipbone to tighten the joints. After that the patient no longer needed a crutch, and could stand and walk. Her waist muscles were still weak, however, so that her gait was not steady.

Chairman Mao teaches that in a given condition **the principal and the non-principal aspects of a contradiction transform themselves into each other**. This convinced them that after the principal contradiction, which was relaxation of the hipbone joints, was basically resolved, the paralysis of the waist muscles came to the fore as the principal contradiction. Concentration was then shifted to treating this area, at the same time treating the buttocks muscle contraction and the bowed legs. Then, when the waist no longer caused trouble, they turned their main attention to treating the bowed legs and drop foot, at the same time continuing the treatment of the waist to consolidate the results already gained. Finally these defects were corrected and the girl could go to school by herself.

### **Fully Arouse the Patient's Initiative**

Chairman Mao teaches us: **"It [materialist dialectics] holds that external causes are the condition of change and internal causes are the basis of change, and that external**



Careful treatment by the medical workers of No. 208 Hospital has enabled Li Hsiu-chuan to stand and walk. She had been badly crippled for six years from the after-effects of infantile paralysis.

**causes become operative through internal causes.”** Treatment only provides favourable conditions for the development of the contradictions within the patient’s body, be-

coming operative only through internal causes. In the course of the treatment, therefore, it is necessary to arouse the patient’s initiative so as to give full play to the internal causes. A patient of poor peasant origin afflicted with the after-effects of infantile paralysis had both legs paralyzed so that he could not stand or walk, but for fifteen years had crawled on all fours. After he was admitted to the hospital, the medical workers had deep proletarian feeling for him and determined to enable him to stand erect. After a few treatments his right leg showed great improvement, providing conditions for training to stand up. He tried standing, but his legs shook and he perspired so that he threw away the crutches and went on crawling. Studying the situation, the medical workers saw at the bottom of it not only lack of hard training but of courage and confidence as well. They had focussed attention mainly on physical therapy to the neglect of raising his spirit. After that they studied Chairman Mao’s works together with him to strengthen his confidence in the treatment and his resolve to steel himself and get well in order to serve the cause of revolution. From then on, despite the pain, he persisted in daily exercise with a pair of crutches, so as to bring about new changes in his limbs. Gradually they grew thicker and stronger, and finally he stood up.

Through treating this patient the medical workers understood better the relationship between external and internal causes. While striving to give suitable treatment, greater attention should be paid to giving full play to the patient’s subjective initiative, increasing his resistance and speeding the transformation of the contradictions in a favourable direction, so as to enable him to conquer his disease.

## *Revolution in Fracture Treatment*

Hung Yi

**G**UIDED BY Chairman Mao's philosophic thinking, we medical workers of the orthopaedics department of Tientsin People's Hospital, have applied modern scientific knowledge and methods in the study of Chinese traditional orthopaedic experience and made advances in treating fractures.

Through clinical practice in more than 13,000 cases over the past thirteen years, the hospital has worked out a set of new methods for treating fractures. The methods can be applied in various common cases, and many patients have been relieved from plaster casts, traction and surgery. The union of fractures was speeded, cutting the time of treatment, with better functional recovery of the injured limbs. Moreover, these methods cost less and caused the patients less suffering.

Formerly, using the usual methods of Western medicine to treat fractures, we reduced the fracture when possible and immobilized the limb in plaster or applied traction. If the fracture could not be reduced or the reduction was unstable, we would operate and fix the fracture with stainless steel plates and screws to obtain "anatomical reduction" or "firm fixation". In some

cases plaster immobilization was added, which would last two or three months. If this yielded no result, the immobilization and traction were prolonged, often causing bed sores or stiffening of the joints. Doctors were aware of this situation but few dared try to alter it owing to the influence of the renegade, hidden traitor and scab Liu Shao-chi's "slavish comprador philosophy" and his "doctrine of trailing behind at a snail's pace".

In 1958, under the guidance of the general line for building socialism, we conscientiously studied Chairman Mao's teachings on combining Western and Chinese traditional medicine and invited Chinese traditional orthopaedists to the hospital, starting a movement for doctors of the Western school to learn Chinese traditional medicine.

Practice over a period of time showed Chinese traditional orthopaedic methods to have the advantage of being simple, convenient, inexpensive and effective. The experience of Chinese traditional orthopaedists in treating fractures of the upper arm (humerus) and of the wrist (lower end of the radius) was promptly summed up and for the first time defied the principle of the Western school of "complete rest and extensive immobilization" in treating fractures.

After 1958, however, a period of stagnation followed, when no further progress was made. Some doctors stepped back. They said that Chinese traditional orthopaedists could handle only simple breaks, and that surgery and immobilization in plaster were still required in treating multiple or complicated fractures.

Under Party leadership the medical workers strengthened their revolutionary spirit of self-reliance and hard work. They continued to invite Chinese traditional or-

thopaedists to the hospital to demonstrate their skill, while the doctors of Western medicine were sent out to learn from Chinese traditional orthopaedists, combining the good features of both schools. For example, the small splints used in Chinese traditional orthopaedics were adopted in place of the plaster immobilization of Western medicine. Of the various kinds of splints used, those made of willow wood were selected for their elasticity and strength. And, in reducing fractures, Chinese traditional reduction methods were synthesized and combined with the advantages of Western medicine, including X-ray diagnosis, anaesthesia and traction, instead of relying solely on Western methods of traction, operative reduction, nailing and internal fixation with plates and screws, etc. In the course of practice, Chinese traditional methods have also been continually investigated and improved upon. Initial steps in extensively combining Western medicine with Chinese traditional practice have been taken, and many problems in treatment are being solved one after another.

On the question of the advisability of moving the limb after reduction, Chinese traditional orthopaedists have consistently favoured immobilization coupled with appropriate movement. In rest there is movement, and in movement there is rest. But doctors of the Western school stress immobilization to the neglect of movement.

Chairman Mao teaches: **“There can be no differentiation without contrast.”** The two different ways of managing fractures and the results obtained from each have been compared on the basis of prolonged clinical practice. Before 1958, when the Western method was used exclusively, it took eighty-five days for a fracture of the shaft of the femur (thigh bone) to unite. After



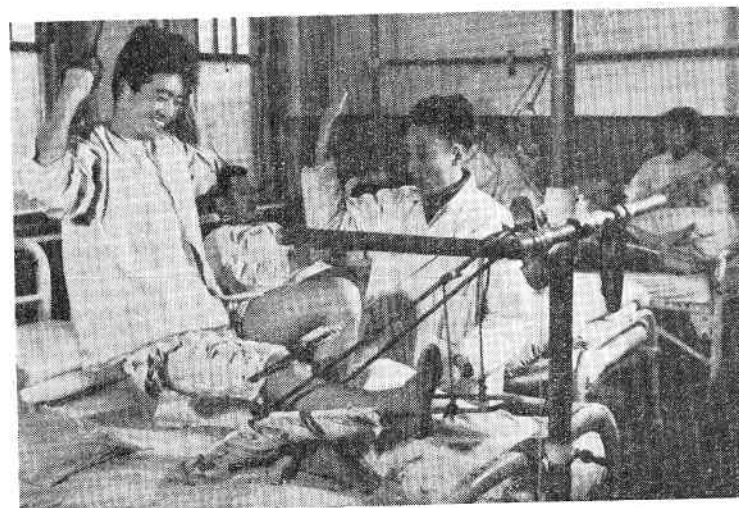
Doctors at Tientsin People's Hospital demonstrate the Chinese traditional method of using small splints in treating fractures.

1958, and the Great Leap Forward, such fractures, treated by a combination of Western and Chinese traditional methods, healed in an average of fifty-two days, in a third less time, with good therapeutic effect. Clinical practice showed that a patient bed-ridden for five to six

weeks lost one to two per cent of his total bone calcium, even with the best nutrition. If the immobilization was prolonged, rarefaction of the bone (osteoporosis) occurred and bony union delayed. With the assimilation of Chinese traditional orthopaedists' methods and summing-up of patients' individual experiences, functional exercises were formulated which have given very good results in facilitating early union of fractures.

Our great leader Chairman Mao says: "**Marxist philosophy holds that the law of the unity of opposites is the fundamental law of the universe.**" Applying Chairman Mao's philosophic thinking to guide medical practice in treating fractures, we recognized that the human body is always a unity of opposites. Complete rest and absolute immobilization in treating the local pathology of a fracture will certainly reduce movement of the whole body and weaken it, which in turn adversely affects healing of the part.

We have applied the dialectical materialist viewpoint in analysing the effect of immobilization and movement in treating fractures. Immobilization is needed to keep the fracture reduced, but irrational immobilization hinders bony union and recovery of function. Movement is beneficial to bony union and recovery of function, but irrational movement hinders immobilization and fracture reduction. Neither immobilization nor movement should be stressed to the neglect of the other. In handling this relationship, we must maintain fracture reduction simultaneously with movement of the limb, while movement should benefit immobilization. We first clarified the dialectical relationship of the unity of opposites between the two and then assimilated the good features of the



Medical workers direct patients with fractures in exercises to restore function.

Western school, which gave accurate reduction, and the Chinese traditional method of using small splints, appropriately utilizing the unity of opposites between "rest" and "movement". This combines to the maximum the favourable factors of immobilization and movement and reduces their unfavourable factors to the minimum. Thus conditions are provided for movement of the entire limb and the whole body while achieving effective immobilization, making possible suitable functional exercises of the limb during the healing period. New insight into the relationship between internal and external causes of fracture healing was gained, and we concluded that it was wrong to rely solely upon external force (plaster, traction, etc.) to immobilize the fracture

and ignore internal factors as seen in the patient's initiative.

The above-mentioned methods have given fairly good results in the treatment of most fractures. However, in more complicated cases, some problems remained to be solved. For instance, no remarkable result had been achieved with fracture of both bones of the forearm in adults. We analysed the problem and realized that we had not yet grasped the particularity of this type of fracture. The forearm has two bones, and this is its particular feature. When both bones are fractured, the four broken ends may cause multiple deformities. Normal function of the forearm can only be obtained after proper reduction of both bones and correction of all deformities. Even though these features and changes were known to us we had not grasped the principal contradiction, because we had regarded these changes in an isolated, static and one-sided way, and often paid attention to one aspect of the problem but neglected the others. As a result, closed reduction was often unsuccessful, and open reduction by internal fixation with plates, screws and pins had to be used. Such operative management inevitably caused damage to muscles and the periosteum (the tough fibrous membrane surrounding a bone). The extra damage resulted in very slow union of the fractures, about 9 per cent not uniting at all.

Our analysis of the Chinese traditional orthopaedists' experience also taught us that since a special characteristic of the forearm was rotation, the principal deformity was rotational. Once this deformity was corrected, all others were readily solved. Applying this knowledge in clinical practice, we succeeded in treating fractures of both bones of the forearm. Breakthroughs were soon made



Keng Chin-jung, a worker of Tientsin Foundry and Forge Works, back at work on high scaffolds after fracturing his thigh bone (X-ray in inset). He was treated by combined Chinese traditional and Western methods and fully restored to health after three months.

of some other fairly complicated problems in fracture treatment which presented difficulties to the doctors of both the Western and Chinese traditional schools.

Since the start of the Great Proletarian Cultural Revolution we medical workers of Tientsin People's Hospital have become more conscious of class struggle and the struggle between the two lines, and are now more conscientious in carrying out Chairman Mao's proletarian line on medical and health work. On the basis of practical experience in the past few years, we have made further refinements and an initial formulation of methods for treating old fractures, on the basis of both schools.

This combined treatment has only begun, and many problems remain to be solved. But we have determined to make further efforts in the study of Chairman Mao's philosophic thinking, and are resolved to continue on the road of combining Western and Chinese traditional medicine, making new contributions towards creating a unified, new medicine and pharmacology for China.

## *Developments in Rejoining Severed Limbs*

Chen Chung-wei\*

**I**N 1963 we successfully rejoined the severed hand of a patient in the Shanghai No. 6 People's Hospital, and this case was reported in October of the same year by the Chinese medical workers at the International Surgery Conference in Rome. Surgeons at the Conference paid considerable attention to the report, acknowledging that both the rejoining of a completely severed hand and recovery of its function within a few months are firsts in the world.

But what about the progress in this field since that first success in rejoining the severed hand?

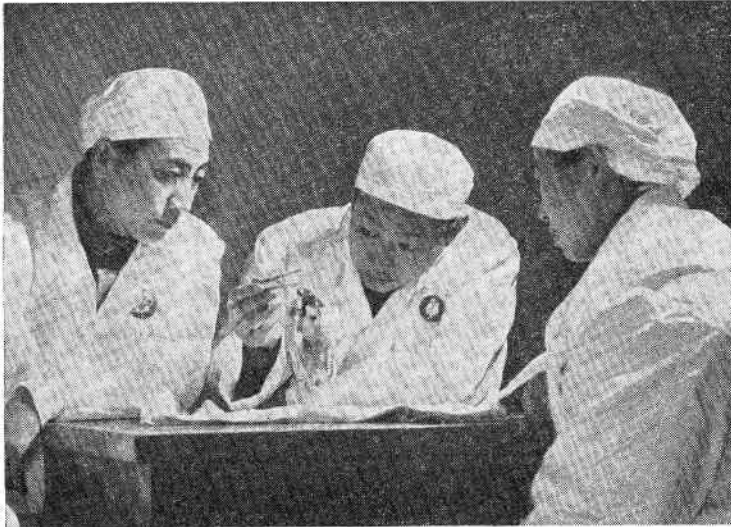
For the past eight years, under the guidance of Chairman Mao's philosophic thinking, we have taken further steps forward, rejoining not only cleanly severed arms, but limbs with jagged ends, like a broken bamboo. In particular, we can rejoin severed fingers, a very delicate procedure. And we have had success in re-attach-

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\*Chen Chung-wei, of the Shanghai No. 6 People's Hospital, was the chief orthopaedic surgeon responsible for the first rejoining of a severed hand.



ing limbs almost completely severed for forty-eight hours. We have also rejoined completely severed limbs after twenty-four hours, with recovery of function, provided they were kept in refrigeration.



Chen Chung-wei (*middle*) discusses with orthopaedic surgeons better ways of rejoining the blood vessels in severed fingers.

These successes smash the bourgeois so-called medical authorities' commandment that "when a limb has been deprived of circulating blood beyond six hours, rejoining and recovery of function are impossible, even if circulation is restored".

Extension and development in rejoining severed limbs has been guided solely by Chairman Mao's phi-

losophic thinking. Let's take anastomosis of blood vessels as an example.

A human being has arteries and veins through which the heart makes the blood circulate. The heart pumps out blood fresh with oxygen, and the function of the arteries is to transport it into the capillaries, to carry out the internal organic exchange of matter. The function of the veins is to return an equal quantity of blood to the heart after this exchange is completed. It is this completion of internal circulation which ensures the process of metabolism. Once blood circulation stops, the normal vital function of the human organism ceases, and the person dies. Limbs deprived of blood circulation become gangrenous in a very short time. Therefore, after a limb is separated from the body, the key for the limb's survival after rejoining lies in correctly understanding the situation between the arteries and veins, thus to anastomose the blood vessels in such a way as to ensure the circulation of blood in the limb.

When we did our first replant, we joined up an equal number of severed arteries and veins, but the next day we noticed the skin on the re-attached hand shiny as the hand had gradually become swollen. We thought this was probably due to tissue damage resulting in microscopic blood vessels breaking and letting blood into the tissue. So we made multiple incisions on the skin to let some blood out. The result was good and the rejoined arm survived. Later on we used the same method to anastomose blood vessels in rejoining a severed limb, but this time the swelling did not subside. A large volume of blood poured from the incisions, and shock due to haemorrhage was the result. We had used the same skin-incision method in the two instances. Why did it



fail in the second when it had been successful in the first?

We studied Chairman Mao's teaching that **"error is often the precursor of what is correct"** and drew encouragement. We determined to find elements of success in the failure.

We recalled the operation procedure, and analysed specifically the concrete conditions. We had joined an equal number of arteries and veins in both limbs. But the difference was that the veins of the first patient had been only slightly damaged and maintained a smooth flow of blood after being joined so that swelling was not serious and the incisions on the skin took care of it. The veins of the second patient had been badly damaged, anastomosis was difficult, and the vessels had to be repaired. But the repair reduced the calibre of the vessels, and the back flow of blood was obstructed and the swelling more than the incisions on the skin could relieve. The degree of swelling was closely related to the condition of the veins.

We had discovered an important point. We went on to analyse the relationship between the arteries and veins — a unity of opposites. The arteries are under high pressure and the blood flows quickly, while the blood flows slowly through the veins and the pressure is low. But veins are more numerous than arteries, and this creates a relative blood flow balance. Thus, if we do not join more veins than arteries, there will be inadequate venous return, blood will accumulate in the capillaries and swelling result.

In our later operations, therefore, we made it a point to anastomose a few extra veins to improve the venous

return and eliminate swelling, with the result that the survival rate of the rejoined limbs was greatly enhanced.

In our practice of rejoining severed limbs, we realized that a severed limb does not become gangrenous immediately, but its tissue cells use their remaining nutrient to carry on metabolism. How then should we understand the law of metabolism in the severed limb? How can we raise the survival rate of a severed limb long deprived of circulating blood?

We drew inspiration from Chairman Mao's teaching: **"There are two states of motion in all things, that of relative rest and that of conspicuous change. . . . When the thing is in the first state of motion, it is undergoing only quantitative and not qualitative change and consequently presents the outward appearance of being at rest."** We knew that the law governing the life of tissue cells involves the process of change from quantity to quality. Suppose we were to seize the opportune moment when quantitative change had not yet led to qualitative change to take measures to slow down the metabolism in the severed limb as much as possible so as to prolong the life of the cells by retarding their degeneration. Or suppose we were to seize the opportune moment to create conditions to keep the cells alive and prevent degeneration. This would create a condition favourable for successful rejoining of severed limbs.

Then we tested this knowledge in practice. A patient was admitted to the hospital with a severed limb after twenty-four hours. He had been brought from a distance, and the severed limb was packed in ice bags on the way. After the rejoining, we kept the limb at low temperature and supplied it with nutrient for three days, when it

gradually showed signs of life. The rejoining of this limb was successful.

The course of technical progress in rejoining severed limbs is one of the struggle between proletarian and bourgeois ideas.

We started going to factories and to the countryside in 1958 to take part in the three great revolutionary movements—class struggle, the struggle for production and scientific experiment—and be re-educated by the workers and peasants in line with Chairman Mao's teaching that the intellectuals must integrate with the worker and peasant masses. We realized that the great victory of socialist construction is the result of unselfish labour by the worker-peasant masses armed with Mao Tsetung Thought. We gradually established bonds of feeling with them, and when we returned to the hospital we worked even harder in relieving our class brothers of their sufferings. When we met difficult technical problems, the question whether to rejoin or not to rejoin the severed hand often arose.

Once, we faced failure in rejoining a worker's badly mangled and torn-off arm. We worked tensely, used every drug and method we could think of, but all were in vain. Should we give up in face of serious difficulties? Sharp struggle arose in our minds. But many comrades said that as this was the arm of a worker brother, we must do our best to save it. Even if there was only 1 per cent hope, we must strive for 100 per cent realization. With that thought we set about calmly analysing and studying the case anew, and tried again and again, till we restored the worker brother's arm.



Successful reattachment of an arm with multiple amputation (*inset*), by medical workers of the P.L.A. No. 230 Hospital.

Rejoining severed fingers requires still greater skill, for even the large blood vessels in them are tiny, only one-fourth the diameter of a thin match stick. We lost confidence at first, after several failures. The patient asked why, since we had succeeded in rejoining limbs, we could not succeed in rejoining his severed fingers.

We studied Chairman Mao's teaching on serving the people wholly and entirely, renounced Liu Shao-chi's revisionist line in medical and health work, and steadily improved our skill. Finally we used needles of 0.2 millimetre diameter and nylon thread one-third the thickness

of a hair and succeeded in saving the patient's fingers by joining the tiny blood vessels in them.

We have made some progress in rejoining severed limbs and members over the past few years. However, the struggle of mankind to transform the objective world never stops, and there is no end to remoulding our world outlook. Thus we take our small achievement as a starting point for continuing this revolution. We determine to understand more of the objective laws governing this branch of surgery so as to serve the people still better.

## *Blazing a Trail in Healing Serious Burn Cases*

The Burns Department of the  
Tungfanghung Hospital Attached to the Shanghai  
No. 2 Medical College

**W**E HAVE for years applied the dialectical materialist theory of knowledge in treating burns, surmounted difficulties and healed many serious cases, including babies and people over seventy. In one of the most serious cases, the burned areas covered 99 per cent of the body surface, of which 94 per cent were third degree burns. Only a palm-sized patch of skin on the crown of the head remained.

Shock is the first problem in burns. A large quantity of blood oozes out of the blood vessels following serious burns. This causes rapid pulse, decrease in blood volume, lowered blood pressure and other shock symptoms. A patient will die if blood and saline are not given promptly. We used to do this according to the "Evans formula" in foreign medical literature. In 1958 we had a patient with extensive burns and in a state of shock. We used the formula as prescribed to replenish body fluids, but several hours later the patient was still in critical condition. Why had the formula not

brought results? Following Chairman Mao's teaching that **"all genuine knowledge originates in direct experience"**, we kept up close bedside observation. The patient continued to lose fluids faster than they were being replaced, so we gave more. Soon urine began to drip through the catheter, and the patient came out of shock.

This instance spurred us to go on to find the law for replenishing fluids and overcoming shock, and we have analysed cases over the years. On the basis of experience in treating more than six hundred patients, who varied in age, burn area, degree, cause and location, we concluded that the patient's per-hour urine excretion stabilizes at a certain point when the appropriate amount of fluid is added, and that excretion above or below that point indicates unsuitable infusion. Later we worked out a formula on the basis of our conclusions, which clinical practice verified. This refuted the "Evans formula", which bourgeois "authorities" had taken as law.

After shock is overcome, we concentrate on averting septicaemia. Here again, we had been misled by bourgeois academic "authorities" and metaphysical ideas. The bourgeois academic "authorities" deal with germs in two ways. One is to create a "sterile field" and the other to use antibiotics to destroy the germs already in the patient's body. But, in many cases, neither measure prevents septicaemia. What then, causes it?

The normal human body functions in a natural environment. The nose, mouth, intestines and pores all have germs which do not infiltrate the blood stream and therefore do not cause septicaemia. But, in burn cases, the patient's skin barrier against germs is destroyed, and the germs multiply rapidly in the wounds, enter the blood stream and cause septicaemia. Obviously, septi-

caemia is caused not primarily by external germs, but because of the wounds and the patient's lowered resistance. We combined traditional medicinal herbs and Western drugs both by mouth and as dressings, to increase the patient's resistance and aid wound healing. We also took the necessary sterilization and isolation precautions, and used antibiotics appropriately. As a result, we brought down the incidence of septicaemia markedly, and raised the percentage of cures.

The most difficult problem in treating burn wounds is management of the crusts that form over the burnt area as they are liable to infection with subsequent suppuration, necrosis and septicaemia.

How should the crusts be treated? We once thought that their removal was the only way to avoid infection. But, in extensive burns, where the crust area is proportionately large, the failures increased. So instead of removing the crusts, we did all we could to keep them dry, prevent them from suppurating and becoming necrotic and waited for them to drop off naturally.

This method succeeded in most cases, but not all. We faced new problems. Most patients with third degree burns exceeding 50 per cent of the body area still developed septicaemia. We turned to Chairman Mao's teaching: **"Although the data of perception reflect certain realities in the objective world . . . they are merely one-sided and superficial, reflecting things incompletely and not reflecting their essence."** We saw the need to sum up our practical experience, systematize it and elevate it to the theoretical level, if we were to work better and keep advancing. We reviewed the signs and symptoms we had observed, and proceeded along the line of **"discarding the dross and selecting the essential,**

**eliminating the false and retaining the true, proceeding from the one to the other and from the outside to the inside".** We realized that our method of preserving the crusts and allowing them to drop off naturally, which in general use was fairly successful, failed if the crusts covered extensive areas and a large amount of toxin was released from the wounds. These patients developed septicaemia due to lowered resistance. We also found out why the percentage of failures was fairly high in the method we had rejected, of operating to remove crusts. It failed to handle properly the dialectical relationship between the part and the whole, by removing too many crusts. It caused the patients great suffering. If we removed an appropriate amount of crust in a series of operations, the patient recovered quicker with better result.

Afterwards, we used both methods in treating extensive crust areas, adjusting to particular cases. At the same time, we applied herb medicine to some of the areas where we wanted the scabs to drop off naturally. After more than four years of clinical practice, we achieved good results.

Immediate skin grafting is necessary to protect the raw area after the crusts drop off.

Is it possible to use skin from a donor since the patient does not have enough healthy skin to meet the need? It used to be considered that two to three weeks after homografting (from a donor), the skin would slough off, the human body rejecting the foreign tissue. Bourgeois "specialists" assured us that this could not be changed.

Lenin teaches us that we should consider all things as **"living, conditional, mobile, transforming themselves into one another"**. This made us realize that the sloughing

off of homografts was not necessarily an unchangeable law since under certain conditions the one could be transformed into the other. In our clinical experience, we closely observed the growth and mutations of homografts. We found that a small graft of donor's skin between two of the patient's own grew together with it well. We alternated autografts with homografts, and eventually found that some pieces of homograft were "transformed" by the autografts and no longer sloughed off.

We used this law, and continued improving the method of combining autografts with homografts. After

The No. 1 Hospital attached to Peking Medical College saved a young woman worker who had severe burns covering 98 per cent of her body surface, of which 88 per cent were third degree burns.



years of experimenting, we are able to use a small amount of autograft to surround a large piece of homograft.

A steel worker was taken to our hospital several years ago with burns covering 98 per cent of his body surface. Third degree burns accounted for 90 per cent. The remaining 2 per cent of his skin was divided between the crown of his head and the soles of his feet, two places considered impossible sources for skin grafts. We analysed the problem in the light of Chairman Mao's teaching: **"When we look at a thing, we must examine its essence and treat its appearance merely as an usher at the threshold, and once we cross the threshold, we must grasp the essence of the thing."** We believed that although the scalp is hairy and the soles calloused, they can serve as autografts, since the skin on those parts is essentially no different from that on other parts of the body. We covered the entire third degree burn area with a small piece of the patient's scalp combined with homografts, and saved the patient.

We are determined to study Chairman Mao's philosophic thinking even better, and to keep to the orientation of serving the workers, peasants and soldiers, thus constantly to advance China's medical science.

## *A Second Life for Chang Chiu-chu*

Hsieh Fang

GIVING FULL play to the spirit of serving the people wholly and entirely, comrades of the medical section of a Chinese People's Liberation Army unit under the Peking command successfully removed a ninety-jin (forty-five kgs.) tumour from the abdomen of Chang Chiu-chu, a woman commune member.

On February 21, 1968 Chang Chiu-chu was taken by her railway worker husband on a handcart to an army unit medical section. Chang Chiu-chu's abdomen was the size of an army cauldron, and she breathed laboriously. Though emaciated, she weighed 96 kgs. (over 211 pounds). Upon examination, the huge tumour was found to fill the entire abdominal cavity and half of the thorax. The P.L.A. doctors showed the sincerest sympathy for this class sister. Then, in reply to the question, "Why didn't you come before you reached this condition?" Tsui Ping-wu, her husband told the story.

In 1964, Chang Chiu-chu felt a small mass in her abdomen and went to a number of large hospitals for examination. But the verdict of those "authorities" was invariably that there was no hope for her, and after that the hospitals refused to see her. The tumour grew from

bowl to cauldron-size, and Chang Chiu-chu became totally incapable of looking after herself, to say nothing of doing any work. She could not stand, sit or lie down, but could only kneel on the *kang* (brick-bed). "We didn't come looking for skill and fancy equipment," said Tsui Ping-wu. "We came to find the People's Liberation Army, who carry out Chairman Mao's revolutionary line. We're sure you can help her!"

The P.L.A. medical comrades asked Tsui to take his wife home and prepare her for hospitalization. They would send for her.

Chairman Mao teaches us: **"This question of 'for whom?' is fundamental; it is a question of principle."** The choice between serving the broad masses or serving a few involves serious struggle between the two lines in health work. "The counter-revolutionary revisionist line pushed by Liu Shao-chi in medical and health work shoves the living into their graves," said the P.L.A. comrades. "We're determined to proceed under the radiance of Chairman Mao's revolutionary line, and save Chang Chiu-chu."

The Party branch reported the matter to the army unit's Party committee which pointed out: "Our medical section is small, but we keep our doors wide open for the poor and lower-middle peasants. We will resolutely carry out Chairman Mao's revolutionary line in health work and cure this woman patient."

On February 25, comrades of the medical section, with profound proletarian feelings, sent a car to fetch Chang Chiu-chu to the hospital.

Questions were raised: Malignant tumour had been diagnosed by the big hospitals. If that were so, how could we cure her? Also, in such big operations, the

mortality rate even in large hospitals is ninety-nine out of a hundred. What chance have we, with our small medical section, lack of equipment and technique?

These questions were thought over and discussed. The Party branch got the comrades together to study Chairman Mao's instruction: **"In medical and health work, put the stress on the rural areas."** They thoroughly castigated the crimes of Liu Shao-chi and his agents in pushing a counter-revolutionary revisionist line in medical and health work, thus increasing their own awareness of the struggle between the two lines. They said: "Those bourgeois 'authorities' try to scare us with their 99 per cent mortality rate. But we proletarian fighters dare to face any risk and strive for success even with 1 per cent hope."

The comrades then proceeded to make over thirty different types of examination and repeated studies of Chang Chiu-chu's general condition, working as though reconnoitring before a battle with the enemy. The diagnosis they reached on the basis of their conscientious, scientific study was that the tumour was benign.

Detailed research work followed in preparing to remove the big tumour, the Party branch and all comrades of the section participating. Hundreds of questions were raised, many difficult ones which they were meeting for the first time.

What was to be done?

**"The masses are the real heroes."** Eight teams were formed including political direction, surgical and anaesthesia. Everywhere, in office, dormitory, and even the kitchen, comrades were contributing their wisdom and effort to answer the questions.

The scheduled day of operation drew near. Only the question of how to make the incision remained, and that was an important one. The incision must allow removal of the huge tumour and at the same time cause minimal damage to surrounding abdominal tissues. Day and night, using gourds as models, the surgeons and nurses drew countless incisions. The cooks contributed sketches, and even in-patients offered their ideas. After three sleepless nights a nurse produced a plan for the incision that answered the requirements.

Resolutely carrying out Chairman Mao's revolutionary line, for twenty days the medical workers prepared against every eventuality in removing the tumour, and a plan of operation was finally drawn up—the result of collective wisdom.

At 7:30 a.m. on March 23 Chang Chiu-chu was wheeled into the operating room. She had been admitted to the hospital without hope of being cured. But the P.L.A. comrades had helped her study Chairman Mao's works, and she gradually gained confidence. Now, she lay calmly on the operating table.

The operation began and, as expected, it was not smooth. Within five minutes of administering the anaesthetic, the patient had difficulty in breathing. Her blood pressure dropped; her pulse became rapid, and cold sweat broke out on her face. The anaesthesia apparatus was found to be at fault. One of the doctors quickly replaced it with the anaesthetic tank he had devised, and the patient's breathing became normal.

When the abdomen was opened, the tumour appeared covered by a membrane. A question arose. Was the membrane part of the tumour, or was it the peritoneum? If it was peritoneum, it must not be cut, as infection of



Medical workers of the P.L.A. health section study what would be the best incision for removing the tumour.

the viscera might follow and the health of the class sister affected for a long time. The five surgeons studied the tumour closely, exchanging opinions, and concluded that the membrane belonged to the tumour and could be excised without affecting the peritoneum.

The exposed tumour was covered with a network of blood vessels, and it adhered to the surrounding tissues. The surgeons started the work of separating them, not with scissors or scalpels, but bit by bit, with layers of gauze in forceps. Every gentle movement expressed class love, love for the masses of working people. As



they were absorbed in separating the tissues binding the tumour, the patient's blood pressure suddenly dropped, and the surgeon in charge of blood transfusion quickly went to work. Bottle by bottle, the 5,000 c.c. of prepared blood was soon used up. The cadres and fighters waiting outside the operating room ready to donate blood for their class sister now stepped forward, each insisting on being the first donor. As the blood of Chang Chiu-chu's class brothers flowed into her veins, her blood pressure rose and the operation continued.

When the tumour had been freed from the tissues surrounding it, its base at last came into view. Two main arteries passed under the base of the tumour. If these were damaged, all the patient's blood could be lost in a matter of seconds. At this critical moment, with final victory in sight, they kept in mind Chairman Mao's teaching: **"What really counts in the world is conscientiousness, and the Communist Party is most particular about being conscientious."** They gave full play to the revolutionary spirit of serving the people wholly and entirely, overcame all difficulties and crises, and by 7:30 p.m. had removed the 45-kg. tumour.



Chang Chiu-chu, restored to health, studies Mao Tsetung Thought.

As the news of success spread from the operating room, the cadres and fighters who had been waiting anxiously for twelve hours cheered "Long live Chairman Mao!" and "Long live Chairman Mao's revolutionary line!"

Four hours later, when Chang Chiu-chu was conscious, she felt her abdomen and wept for joy. The tumour, which had grown to such immense size and had totally incapacitated her, was gone!

As Tsui Ping-wu looked at his wife, in the prime of her life, and their children looked amazed at their mother, a normal woman again after being an invalid for so long, how excited they were!

Six days after the operation, the stitches were removed from an incision of ninety-five centimetres (including a supplementary incision). On the eighth post-operative day Chang Chiu-chu was able to walk, and in three months she was fully recovered. She now takes part in the physical labour of her commune, and can do work as strenuous as cutting wheat. With deep gratitude to Chairman Mao she often says: "Chairman Mao gave me a second life!"

## *China Makes New Artificial Larynx*

Lu Tien

A PERSON whose larynx is removed will be mute; he also loses the function of his nasal cavity. The hospital attached to the Shantung Medical College, under the guidance of Chairman Mao's proletarian revolutionary line on medical work, has produced a new-type artificial larynx which enables patients to regain not only their power of speech but also their nasal cavity function.

This larynx is strong, durable and non-irritating, and meets physiological requirements. Its special tube ensures free movement of the mouth, so that the vowel and consonant sounds can be clearly produced. Modelled on the human vocal cords, the two-phase movable voice producer regulates the volume and pitch of these sounds. It also has a breathing control apparatus which ensures that the air passes into the lungs through the nasal cavity. The larynx thus aids in restoring the nasal cavity functions of smell, and of warming, humidifying and filtering the inhaled air.

A doctor who took part in making the larynx told us: "The artificial larynx as it is today was made and improved step by step under the guidance of Mao Tsetung Thought."

In the Great Leap Forward year of 1958, in order to relieve the sufferings of class brothers whose larynxes had been removed, some young people fresh from medical colleges decided to produce an artificial organ to help them regain their power of speech. The hospital Party organization supported the idea and organized a "three-in-one" research group of workers, patients and medical workers to set about the work.

They met with many difficulties, for they lacked equipment, experience and technical data. What they had was the firm conviction that, with the guidance of Mao Tsetung Thought and the correct leadership of the Party, and by relying on the wisdom of the masses, they could overcome these difficulties.

Their first designs were all unsatisfactory. What was the cause of failure? Chairman Mao teaches: **"Whoever wants to know a thing has no way of doing so except by coming into contact with it, that is, by living (practising) in its environment."** Following this teaching, they went on investigating. They kept the patients under close observation and compared them with normal people. They came to the conclusion that normal people's speech is due to their lungs, larynxes and mouth cavities working in co-ordination under the control of cerebral nerves. The air supplied by the lungs is turned into sound by the vibration of the vocal cords; the vibrations pass into the mouth cavity and become articulate speech through resonance and co-ordinated action, i.e., through the work by the lips, teeth and jaw. The patient with his larynx removed still has good lungs and a mouth cavity. But his lack of a larynx prevents him from pronouncing and transporting the air supplied by the lungs into the mouth. Therefore, if he were given a good artificial sound pro-

ducer to substitute for his larynx, and a passage that could make full use of the functions of the lungs and mouth cavity, he would be able to speak again.

In designing a reasonable voice producer, they anatomized the respiratory and sound producing organs of certain animals ranging from amphibia such as frogs, to the human. At the same time they consulted workers on the principles of certain sound producing devices. They started by conducting the air from the lungs to the mouth through a simple rubber tube, and success in creating this passage alone involved about a hundred experiments. Finally they made the first artificial larynx in China.

Clinical experience showed that the larynx functioned as anticipated. But still not satisfied, the medical workers produced five other types, each producing a clearer sound than the previous one, and enabling many patients to regain their power of speech. However, the patients said they would like the artificial larynx to be fixed, so that they would not have to handle it when they spoke. They also expressed the hope that the function of their nasal cavities could be restored. The research group, nurtured by Mao Tsetung Thought, was determined to meet these demands.

During the Great Proletarian Cultural Revolution, the group studied Marxism-Leninism-Mao Tsetung Thought still more conscientiously. Led by the Party and supported by the Chinese People's Liberation Army and the workers, new larynxes were made better than any before, and met with the approval of the patients. A patient who came from Hongkong specially to get one was enabled not only to speak distinctly but he regained his sense of smell. This patient had lost his power of

speech for more than a year after having his larynx removed in Hongkong. Then he used a U.S.-made electronic larynx, but found it unsatisfactory.

The hospital attached to the Shantung Medical College has received many letters of appreciation from workers, peasants and soldiers using the artificial larynx designed by the hospital. They say the development of the larynx has relieved their suffering from being unable to speak.

## *China's New Pharmacology*

Ying Chi-wen

OVER SIX hundred medicinal plants, many colourful and pungent, grow in plots on hillsides and around the buildings of the No. 157 Hospital of the Chinese People's Liberation Army Kwangchow units. Staff members go regularly into remote mountains to pick herbs which they either transplant into the plots or take to the hospital pharmaceutical shop and process into pills, pellets, powders, ointments or injection solutions. The medicines go to fill prescriptions at the hospital pharmacy (which also provides Western medicines) and for use in the wards and department clinics. The shop also fills orders for other hospitals and clinics.

A third of the doctors of No. 157 Hospital can diagnose and give treatment with both the Western and Chinese traditional methods and make up prescriptions in both types of medicine. Combination of the methods of treatment of the two schools of medicine is used in internal medicine, surgery, obstetrics, gynecology, orthopaedics and diseases of the ear, nose and throat. Even the physiotherapy, laboratory and X-ray departments have found ways to combine diagnostic and therapeutic methods of the two schools.



These medical workers have planted over six hundred kinds of Chinese traditional medicinal herbs around the hospital buildings and on nearby hillsides.

An old worker who suffered from stomach pains was X-rayed with barium, his first X-ray indicating peptic ulcer. Treatment was given and his symptoms disappeared, only to return after some time, indicating either

ulcer or chronic gastritis. A dozen barium X-rays over ten years failed to show the site of an ulcer, so no definite diagnosis could be made. Early last year pains again brought him to the hospital. A doctor in the X-ray department listened to his case history and decided to try something new. As acupuncture had proved effective in stopping gastric pains, the doctor inserted needles at certain points of the patient's legs before taking an X-ray. The stimulation by needling relaxed the spasms of the stomach and duodenum and the barium was able to get to the site of the ulcer, which was now revealed in the X-ray.

In a small pharmaceutical shop run by No. 157 Hospital. A variety of processed Chinese traditional medicine is being packed.



The combination of Chinese and Western medicine is also tried in preventive measures. By mixing certain Chinese medicines and some chemical drugs, Tsai Chien-yu, the vice-head of the administrative department, succeeded in clarifying water in five minutes, much faster than by using alum. The very simplicity of the process makes it an important discovery for providing clean drinking water for army men in the field.

In all the departments there are groups for the study of combining methods of treatment from the Chinese and Western schools. They have so far worked out effective methods for treating some fifty diseases, including aplastic anemia, dysentery, roundworms in the bile duct, the after-effects of polio, and fractures, solving some long-standing problems and saving a number of once-hopeless cases. Thus they have opened a broad road for the treatment of diseases for workers, peasants and soldiers.

No. 157 Hospital began using methods of treatment from Chinese medicine in 1958, when Chairman Mao pointed out that **“Chinese medicine and pharmacology are a great treasure house, and efforts should be made to explore them and raise them to a higher level”**. The hospital invited a group of teachers and students from a local college of Chinese traditional medicine to teach acupuncture and other methods of treatment. It soon became a mass movement with medical leaders, doctors and nurses all taking part.

A small number of people in the past half doubted, or did not believe at all in the effectiveness of Chinese medicine because the hidden traitor Liu Shao-chi and his agents in the medical and health departments had

spread the idea that Chinese medicine was not scientific. The hospital Party committee organized the doctors and nurses to study Chairman Mao's instructions and the Party's policy on Chinese medicine. This helped them to see that the traditional school of medicine combined the finest of the rich experiences the Chinese people had accumulated over centuries in fighting disease. In the past, limited by historical conditions, the knowledge remained mostly empirical. The reactionary rulers did nothing to preserve or develop Chinese traditional medicine. Much valuable knowledge became lost or was dying out. It was, therefore, the responsibility of every medical worker to rediscover this treasure house of knowledge, systematize it with modern scientific knowledge and develop it to higher levels.

Members of the hospital's Party committee set the example by making first-hand investigations, and teach the medical workers on the basis of actual cases. Once a patient recovering from pneumonia was in a continual heavy sweat. When Western drugs failed to give relief, the Party committee members encouraged the doctors to try Chinese medicine. One dose of an herb drink stopped the sweating the same day.

Pneumonia is a dangerous complication developing from measles, which Western medicine alone often failed to cure. The Chinese traditional treatment is to prescribe medicine that induces full eruption of the rash to "bring out the poison", and this has been shown to reduce complications. With combined Western and Chinese treatment in the past few years, there has not been a single death from measles at No. 157 Hospital. Numerous such examples have led the doctors to explore further in traditional medicine.

Soon the hospital added a department of Chinese medicine and enlarged its traditional medicines pharmacy. Assisted by local doctors of Chinese medicine, the hospital began to extend its use of combined Western and traditional methods of treatment for more diseases. Before 1958, the treatment for roundworms in the bile duct had been to operate on the patient as early as possible to remove the worms. For pregnant women, however, this could cause abortion, yet to delay treatment was dangerous. The Party committee called on the staff to look for measures in the traditional school, and an effective treatment was evolved—an herb soup to be drunk, and acupuncture. The treatment has so far cured 109 patients, including ten expectant mothers. The combination of Western and Chinese methods of treatment has also made progress in other departments.

Following Chairman Mao's instruction: "**In medical and health work, put the stress on the rural areas**", No. 157 Hospital has, in the past few years, sent out more than thirty medical teams, three hundred men and women in all, to tour army units, islands and villages. Since medicinal herbs are readily available, the teams used combined treatments as much as possible, their effectiveness, simplicity and low cost being welcomed by the people.

While touring the countryside, the medical workers collected close to a thousand home prescriptions from the people. After careful studies they chose the effective ones for treating such common complaints as lumbago and leg pains, tested them in practice and then popularized them. They were able to treat some deaf-mutes and patients with other difficult conditions with acupuncture. At the same time they trained health workers in



Learning from Chinese traditional medicine, medical workers of No. 157 Hospital have invited a veteran doctor in Chinese traditional practice to discuss with them how to treat a typical case.

the use of combined methods for army units and rural communes.

In combining Chinese and Western medicine, the medical workers of No. 157 Hospital absorbed the best of both Chinese and Western medicine and weeded out the obsolete and worthless. Combinations were tested disease by disease and problem by problem through actual practice, complementing the weak points of one school with the strong points of the other. The results are new methods of treatment which combine the best of both schools. This is a process of moving from integrating the elementary aspects to more advanced ones, from merging these aspects to creating something new.

An example is the treatment of fractures. Western treatment gives careful attention to accurate reduction. The fractured ends as well as the joints above and below the fracture are fixed with plaster casts. But as the treatment stresses bed rest and limited exercise, local blood circulation is relatively poor, and the union of the fracture is slow and sometimes complicated by general disorders. The traditional method, while giving greater attention to over-all treatment, did not stress accurate reduction as much as it should. The doctors of No. 157 Hospital worked out a treatment combining the merits of both schools. They adopted accurate reduction and used continuous traction to keep the fractured ends in position. But instead of a plaster cast, they fixed the reduced fracture with the small splints generally used in Chinese medicine so that massage can be applied to nearby joints and functional exercises started at an early stage. The patient is given both herb medicine and Western drugs, and herb poultices are applied over the fracture. All this improves both local blood circulation and the patient's general health. More than 1,800 fracture patients given this treatment recovered in a third less time than those treated with only Western or traditional methods. Some of the more difficult cases showed satisfactory healing. Six old patients with fracture of the neck of femur (top of thigh bone) recovered completely and were able to work again. None were disabled.

There are some traditional treatments and medicines for which no scientific theory has yet been developed. Medical workers raise the therapeutic effect through clinical practice and scientific experiments and apply them to more and more diseases and disorders. For example, a kind of holly is effective in curing boils,

scalds and burns. Scientific analyses and laboratory tests show it checks the growth of a number of bacteria. The doctors tried using it to treat pneumonia, other types of burns and chronic infection of the veins, and found it effective.

A home prescription collected from the peasants was found to be more effective in curing bacillary dysentery than Western drugs. It was given careful study and an improved prescription based on it raised the rate of recovery to 94 per cent. Some chronic cases were also alleviated. Further studies and improvements led to the extraction of a plant oil, one injection of which into a certain point of the body, stops bacillary dysentery.

No. 157 Hospital has only just begun to combine Chinese and Western medicine, but the prospects are most optimistic.



努力攀登医学高峰

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