

Medicine in China Today

Stuart Maddin, MD

Two months ago I was invited to visit the People's Republic of China, as an official guest of the Chinese Medical Association. In this short report I shall attempt to record some impressions of this fascinating journey, during which I was privileged to observe medical facilities at Canton, Peking, Tientsin, Nanking, Hangchow, Shanghai, Sian and Wuhan, as well as in the rural areas. I found the experience most stimulating and interesting.

No attempt to assess the current position of medical development in this teeming land can be made without reference to politics, and especially to the Cultural Revolution, which commenced in 1966, and the major shifts in policy which occurred in the following years.

Its effects are far-reaching and are still being felt at all levels. Initially, confusion and uncertainty virtually halted progress on many fronts. Medical schools closed and only now are beginning to reopen. The *Chinese Medical Association Journal* (the official voice of Chinese Medicine), ceased publication in 1968, although it is expected that circulation will be resumed in the near future. Physicians, fearful of criticism and wary of offering opinions of any kind, ceased to meet in groups or associations. The single author-

ed medical text-books were replaced by group authorship for the same reason.

On the positive side, however, many decisions were made which radically altered existing patterns of medical training and practice.

I intend to discuss these developments in more detail, but first it must be emphasised that, in China, policies concerning medical services are not necessarily made by those trained in medicine. From the lowliest commune to the most important teaching hospital, these decisions are initiated by revolutionary committees representing a cross-section of workers in the particular hospital or institution. The committee will consist of both party and non-party members, physicians, both those with Western and traditional training, a cook or kitchen janitor, and most important, cadres, who are professional administrators (something like our civil servants), who interpret the party line, and are aware how to translate it into action. Generally, the cadres are in touch with higher authorities, and are usually spokesmen for the revolutionary committees.

The concept of medical policy decisions being made by lay people may seem strange to us in the West, but doctors' opinions are sought before final decisions are made. In any event, as we in the West know only too well, there is no guarantee of success, even when decisions are made exclusively by the medical profession.

Doctor Stuart Maddin is Consultant Dermatologist at Vancouver General Hospital, Vancouver, Canada. He was in China with his wife and son last summer on his second visit, but first since the Cultural Revolution, there.

Let us now have a closer look at what happened to medical developments during the Cultural Revolution, beginning with the more positive aspects. I was advised that the reduction in medical school training from six to three years, which began in 1969, was inspired by the severe shortage of doctors; it was made possible by the marked decrease or complete eradication of some diseases such as syphilis, gonorrhoea and scabies, etc., which has rendered obsolete the further need for the inclusion of these diseases in the medical curriculum; certain other subjects such as psychiatry and forensic medicine were not emphasised. The Chinese, to quote their own words, have 'trimmed the fat' from the medical school curriculum and generally stream-lined teaching methods to meet the urgent requirements of such a vast population. For example, the shortened training period only includes electrocardiology in the physiology course, which is an early feature of the programme; the subject is not studied further at a later stage of intellectual development, as is the custom in Western medical schools.

Psychiatry as a specialty is not stressed in China, officially because the nation's life-style is not conducive to the various psychosomatic and neurotic complaints which seem to bedevil so many people in the West. Theoretically, psychiatry does exist within the bounds of neurology. Similarly, medical students are not now taught forensic medicine, because the Chinese contend that their political philosophy has abolished, or at least drastically reduced, the criminal element in society.

Mass immunisation programmes have reduced effectively many highly infectious diseases, such as diphtheria, scarlet fever and whooping cough, to the point where it is not considered necessary for medical students to study them. This is a further example of how the medical teaching programme has been curtailed.

The major negative aspect was the cessation of medical training when the

medical schools closed during the Cultural Revolution. It can be estimated however roughly, that at least 40,000 students did not graduate. That was a huge loss to a country already handicapped by severe shortage of qualified medical personnel.

It should also be pointed out that the criteria for receiving medical school training has changed. Prior to the Cultural Revolution, high school students who wished to become doctors applied to attend medical school and were accepted on the usual basis of academic excellence, aptitude, interest and other pertinent characteristics.

Today no-one is permitted to attend medical school without first working for several years on a commune, in a factory, or as a soldier in the People's Liberation Army.

If a young person demonstrates the appropriate initiative and desire to become a doctor (maybe after first working as a 'barefoot physician' which I shall discuss in more detail later), that individual will get the backing of the revolutionary committee where he or she works, and will be later interviewed by a medical school screening committee. There may be a gap of up to five years between the time of high school graduation and acceptance at medical school; during that time the students will almost certainly have forgotten at least part of their basic biological sciences. They will have to go through a crash refresher course to bring them back up to standard before embarking on their formal medical training. This may seem a little clumsy and tend to disrupt the hitherto orderly flow of students into medical schools, but it is done with a definite purpose; the Chinese are wary of creating a class of academic mandarins or callous medical professionals, who would know nothing, and possibly could not care less, of the everyday problems faced by ordinary people in farms and factories throughout the nation.

Medical students are not required to

take examinations. At the end of their training period, extended from eight months to ten months of each year, they are considered qualified after three years. The Chinese medical educators say there is no 'drop-out' rate.

Another important result of the Cultural Revolution is the dramatic improvement of medical services in the country areas. From those in the smallest hospital to those in the biggest and most important, approximately 80 per cent of all Chinese physicians have spent some time in the rural areas. About 15—20 per cent of all hospital professional medical staff are working away from their base hospital at any one time. This is done voluntarily, and on a rotation basis.

Say, for example, Dr A is a surgeon at Shanghai's famous No. 6 Hospital. He will go for 8-10 months to a people's commune outside the city. There he will carry out surgical procedures at the rate of two a day, and will teach his special surgical skills to the local commune doctors. In turn, he will learn from them their simplified procedures, and the ways they have learned to adapt to unsophisticated equipment and surroundings.

When Dr A's time is up, Dr B (perhaps an orthopedic surgeon or a gynaecologist), will be called upon to replace him. This system reminds the physicians that they are there to serve the masses, and the people are proud and grateful that specialists from the urban medical centres look after them and their families.

Many teaching hospitals will adopt a commune, or part of a district, as an area of special interest. There is an area in West China, for example, where there is a predominance of cancer of the esophagus. It is a poor area, where the people eat a lot of a particular kind of rough cereal; it is thought that this causes the cancer. The area is of special concern and interest to the Peking Tumor Hospital. These kinds of tie-in are in operation all over China.

It was stressed repeatedly during the

Cultural Revolution that every effort should be made to combine traditional Chinese medicine with modern Western techniques. The swing back to traditional medicine is reflected in the new format of training in medical schools. In the previous six-year medical training programme, only ninety hours of traditional medical didactic training was given during the whole of that time. The 1972 three-year training course provides for a 60-40 split between Western and traditional medicine.

'Chinese medicine and pharmacology are a great treasure house,' said Chairman Mao Tsetung. 'Efforts should be made to raise them to a higher level.' Two areas where the most effort is being made concern the ancient traditions of herbal medicine and acupuncture.

Let us look first at acupuncture. The practice of inserting needles into predetermined points of the body to alleviate a wide variety of ills had its origins in China at least 3,000 years ago. It is estimated that there are one million acupuncturists in China today. But acupuncture as a surgical anaesthetic (and incidentally as a pain killer for complaints such as arthritis) is a comparatively recent innovation. The first operation in which it was used (a tonsillectomy) was performed in Shanghai in 1958, and it was not until ten years later during the Cultural Revolution that it began to grow rapidly in popularity.

Authorities in Peking informed me that, by April this year, more than 400,000 operations had been performed in China under acupuncture anaesthesia, and it is now used in between 60 - 70 per cent of all operative procedures.

At least one Western physician has described acupuncture anaesthesia as a 'revolution in anaesthesiology' and there is no doubt it has attracted enormous interest throughout the Western world. Certainly, it has a number of practical advantages. In the case of minor operations, the patient walks in and walks out, so

quick is his recovery. There is no post-operative nausea, as there usually is in the case of drug-induced anaesthesia. It is cheaper and in some instances safer, because there are no inherent operative risks.

Let me explain. When, for example, a Western surgeon performs a thyroidectomy (to remove part of the thyroid gland in the neck), there is some danger that, in doing so, he may injure what is called the recurrent laryngeal nerve, which controls the voice box. If that happens, the patient may suffer partial or complete loss of voice for months, or sometimes permanently. However, if the patient is awake, as he will be under acupuncture anaesthesia and talking to the anaesthetist throughout the operation, there is much less chance of that happening.

I was fortunate enough to witness open heart surgery performed in Wuhan, at No. 2 Hospital, attached to Wuhan Medical School. The patient, herself a physician, was suffering from mitral stenosis, that is narrowing of a heart valve. She was anaesthetised solely by acupuncture. A single stainless-steel needle was stuck into her forearm, just below the elbow. The needle was attached to an electrode, which stimulated the needle electrically, turning it constantly. Thirty minutes later, the operation began. I was so close I could look into the patient's eyes, and even from behind glass I could hear the 'snap' as her ribs were cut away to expose her heart. Yet she was totally relaxed and talked to the anaesthetist throughout the operation. It was truly a remarkable demonstration.

An amazing thing about acupuncture anaesthesia is that nobody is quite sure how it works. The most objective physiological explanation was given to me by Dr Chang Hsian-tung, Director of Acupuncture Research at Shanghai's Physiological Institute.

At the risk of over-simplification, this is what he told me; 'The effect of acupuncture anaesthesia is conducted through

the peripheral nerves into the central nervous system. Impulses from the point of needling, and impulses from the point of pain are conducted into the central nervous system by different neurological pathways. When the two sets of impulses meet in the central nervous system, those from the point of acupuncture may inhibit the impulses from the site of the pain, thus effectively blocking them. This is known as the "Gate Theory".'

It is this writer's opinion that high priority should be given to determine the physiological mechanism of acupuncture anaesthesia. Lack of understanding would not necessarily preclude it from being used in the West, but there can be little doubt that knowing how it works would greatly accelerate its acceptability. It would be a tremendous contribution to world medical knowledge.

Much the same sort of mystery surrounds herbal medicine, which pre-dates even acupuncture in China by some 3,000 years. Herbal medicine, as I have already mentioned, was officially discouraged prior to 1949. But after Liberation, Chairman Mao let it be known that herbal medicine should once again play an important part in the welfare of the Chinese people. Today there are about fifty research establishments in China conducting research into traditional drugs, and looking for new and better remedies.

Although some specific answers are being sought to explain the curative properties of certain plant substances, most of those which have survived the test of centuries are not under active investigation.

'With the present state of our knowledge, herbs are used on an empirical basis, with no attempt to explain their specific actions within the body in terms referable to Western medicine,' I was told repeatedly by traditional physicians.

Once again, I believe there should be a determined effort to isolate the active ingredients of specific herbs. The Chinese could be sitting on a wealth of informa-

tion of inestimable therapeutic value.

At the open heart operation I watched in Wuhan, surgeons were using sponges soaked in a special combination of herbal extracts—instead of clamps to control bleeding. Afterwards I did my best to find out the actual herbal factor responsible for this dramatic control of hemorrhage. Nobody could tell me.

At the Institute for Research in Traditional Drugs in Tientsin, employing 173 people, more than a hundred different drugs are being assayed currently to determine any possible anti-cancer effect. Although I did not detect any great optimism among researchers that I spoke to on this subject, it should not be construed that the Chinese are chasing rainbows in this field. A herb grown on the outskirts of Peking, for example, is reputed to be highly effective in the treatment of liver damage as a result of hepatitis. In the southern province of Kwangtung, another herb has been reported effective in the treatment of hypertension.

In hospitals throughout the country, traditional herbal medicine is combined with Western style treatment, and doctors I spoke to insisted that this combination is far superior to using Western treatment alone.

Every district health centre, every hospital, every commune, has its own herbal garden. This ensures a constant supply of herbs for medication, serves as a demonstration area for students and city dwellers, and provides a source of seeds, which workers who live on the communes can sow in their personal garden plots.

Let us look at life on a commune, particularly in regard to public health, in a little more detail. We have already seen how physicians from hospitals all over China are now spending part of each year in the countryside as part of Chairman Mao's call to shift the emphasis on medical services from the cities to rural areas. Consider the work of that small army of dedicated people who are working in the front line of China's continuing strug-

gle to improve health and hygiene for the masses. I refer, of course, to the 'barefoot physicians'.

Barefoot physicians according to the official Chinese definition are 'Peasants trained to give medical treatment locally, without leaving their farm work.' They first made an appearance in rice-growing Eastern China and were little more than enthusiastic amateurs, who used to go barefoot to care for patients in the fields. During the Cultural Revolution, barefoot physicians received official recognition, and programmes were initiated to give them a degree of formal medical training. Nobody can even estimate how many of them are currently at work throughout the country, but I was advised on several occasions that the ideal barefoot physician to patient ratio would be 1 to 750 or 1,000 people. There is no doubt in my mind that they are doing an extremely valuable job in a country whose population exceeds 700 million.

As well as treating minor complaints from coughs and colds to paddy field dermatitis (caused during rice planting by a parasite in the water) and doing physical check-ups on children, barefoot physicians are responsible for a wide variety of preventative health and community hygiene programmes. These can range from giving dietary advice to mothers; to anti-mosquito and anti-fly campaigns; to environmental sanitation problems; dissemination of birth control devices and tablets, and assisting in the anti-leprosy measures.

Nobody, least of all the Chinese, is suggesting that the barefooted physicians can even approach the standard of learning and expertise acquired by fully trained Chinese physicians, but, for millions of people particularly in remote areas, they provide what may be the only medical service available, and there is no doubt that they take a considerable load off the shoulders of the nation's fully qualified doctors. All the barefoot physicians I spoke to agreed that only 10-15 per

cent of their patients had to be referred to the commune hospital. All the rest they were capable of treating.

Each worker in a commune pays about 14 cents (US) each month to belong to a cooperative medical association, organised within each production brigade. Each brigade has its own health station and pharmacy, which is stocked with Western style and traditional drugs, paid for by the medical cooperative. The cooperative also equips its barefoot physicians with a doctor's bag which contains essential but unsophisticated equipment such as a thermometer, syringes and so on, plus as many as forty different kinds of drugs, both Western style and traditional.

Salary for medical personnel prior to the Cultural Revolution ranged from US\$25 per month for newly graduated physicians to approximately \$200 per month for experienced doctors; these

scales have remained unchanged.

Doctors in China are expected to play an active role in helping to protect the environment. For example, they persuade patients not to pollute streams and rivers by explaining the resulting health hazards to them and their families. Great improvements have taken place in regard to the maintenance of good health, the prevention of illness and the eradication of disease in China during the past few years. I travelled extensively throughout the country in 1965, and the changes which I witnessed on this occasion were most impressive. Further communication between the medical profession in the West and their Chinese colleagues must be encouraged; increasing dialogue between such different but complementary cultures will reap a harvest of great understanding. All Mankind will be the beneficiary

