

Vietnamese Studies

North Vietnamese
Medicine
Facing the Trials
of War

Editor: Nguyen Khac Vien

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Foreword

Eight-year-old Nguyen Thi Man was playing in a courtyard when she heard planes coming. She started running toward a shelter, but it was too late. Anti-personnel bombs exploded everywhere in the hamlet. The little girl collapsed. When people came to pick her up they found numerous wounds in her limbs, forehead and belly, caused by steel pellets. It was 11.45 a.m. on August 23, 1967, in an out-of-the-way village of North Vietnam—whose name we shall not mention for it may attract more raids on the village.

In that remote corner of an "under-developed" country, where could competent personnel and adequate equipment be found for first aid, treatment of shock and subsequent surgical intervention?

Nguyen Thi Man had her wounds quickly dressed by a village nurse who gave her an injection of camphor. The haemorrhages once stopped, she was taken to the district hospital where a perfusion of serum and NT.9 (a Vietnamese preparation against shock) was made. At 6 p.m. she was operated upon by the district surgeon. He smoothed the edges of the wound in her forehead, removed the splinters stuck

in the brains, performed hemostasia then closed the gash. Next, he operated on the belly and sutured the intestinal perforations.

A fortnight later, the child was allowed to leave hospital.

By what miracle had it been possible to find in a remote part of the countryside that nurse able to give adequate first aid and that surgeon and that surgical installation capable of saving the life of the child?

The articles in this issue will tell the reader the reason for that "miracle".

Vietnamese Studies

Dr PHAM NGOC THACH
Minister of Health

The Health Service of the D.R.V. in Face of Wartime Tasks

What is to be done*?

The air and naval aggression of the U.S.A. against the D.R.V., started with the raids of August 5, 1964, has been intensified since February 1965 to become a war of destruction on a large scale. According to a report by McNamara to the U.S. Congress, the U.S. air force in the first six months of 1967 has effected on an average 13,000 sorties per month against North Vietnam, which has 17 million inhabitants and an area of 160,000 sq. km.. In many provinces, especially those lying between the 17th and 21st parallels, all populated areas of some importance have been subjected to repeated massive air bombing followed, in the coastal areas, by pounding by guns of the 7th Fleet. The wounds caused by U.S. weapons are often serious ones, as these weapons are very powerful (bombs, rockets) or have particularly harmful effects (napalm, phosphorus). It should be noted that the Americans have been using on a large scale steel-pellet bombs, which U.S. technicians have continuously sought to improve. A mother-bomb, or

* Subheads are ours. Ed.

container (1) releases about 300 bomblets, each of which contains 300 steel pellets; it is a real shower of projectiles, and tens of pellets at a time penetrate into the victims' organs, following complex courses. Pellets have been found lodged in the optic chiasma; others, passing through the abdominal wall, then the diaphragm, perforate at the same time the intestines, the liver and the lungs. Thus, the Vietnamese medical corps has often to deal with complex wounds and severely shocked victims. The problem is all the more serious as the planes can attack any village on our territory. This would require an omnipresent medical corps capable of giving first aid, surgical teams which can intervene very rapidly, and an organization to give proper care to the wounded after they have been operated on. Even a highly industrialized country, with a well-staffed medical corps and modern means of transportation, would find this no easy task. How has the D.R.V., still little industrialized, managed to overcome all medical difficulties in this war? Let us examine, for example, the problem of the transportation of the wounded. Even in peace time, this was no easy task. Until 1964, all major surgical operations had to be done in provincial hospitals, at the provincial capitals (under the colonial regime, such operations were done only in Hanoi) and a journey of even a score of miles created difficult practical problems.

After June 1965, the U.S. air force systematically attacked the network of principal hospitals in North

(1) The American designation is C.B.U. (Cluster Bomb Unit) *Ed.*

Vietnam. One after another, provincial hospitals were destroyed, as well as numerous cure centres: leproseries, sanatoriums, old people's rest homes, etc. (see article on U.S. war crimes, in this issue). The U.S. command's intention was clear: to deprive the North Vietnamese combatants and population of medical means, thus adding to the threat of destruction of property another demoralizing factor: the loss of all hope when one is wounded. It should never be forgotten that the bombing of North Vietnam is primarily aimed at shaking the population's morale, in order to force them to capitulate, thus sparing the Americans a long and costly land war.

It was not without reason that U.S. planes repeatedly attacked the big leprosarium at Quynh Lap (2600 patients). Thousands of lepers, who could no longer get medical treatment and had to return to their villages exhibiting their infirmities and telling about the apocalyptic moments they had lived through, would become a terrible burden for their families and would no doubt constitute a not insignificant demoralizing factor. This indeed was in the Pentagon strategists' calculation.

As a result of U.S. aggression, the D.R.V. has thus lost all medical establishments of any importance; those which have not been destroyed have had to be evacuated. Even small district hospitals and village infirmaries, also called medico-sanitary stations, wherever they are visible from the air with their tiled roofs and well-aligned buildings among the trees, attract U.S. bombs.

What is to be done in those conditions? How to operate on a seriously wounded victim without modern surgical equipment, without electricity? Where to find all the surgeons needed?

To care for wounded people is not the only task; day-to-day medical service has to be carried on, the sick must be given treatment and the fight must be continued against social diseases, epidemics and endemics which can reappear at any moment in a tropical country. It must also be foreseen that the enemy, who has not hesitated to use on a large scale toxic chemicals and gases in South Vietnam, will not refrain from any crime. The Vietnamese medical corps must be prepared to cope with chemical and bacteriological warfare.

We also have to think of the future. Once peace is restored, the medical corps in a victorious, reunified Vietnam will have to liquidate the aftermath of war: infirmities, mutilations, deficiency diseases, neuropsychiatric troubles. Particularly the children, who have much suffered during the war, must be given competent and devoted care to ensure their normal physical and psychological growth. And there will be medical problems posed by the construction of socialism, especially the industrialization of the country; Vietnamese medicine must even now prepare conditions required for a continuous advance, assimilate the progress made by world medicine, while contributing, through its own efforts, to the progress of world medical science.

Such are the great problems faced by Vietnamese medicine, problems which the population and the medical corps have to solve under a deluge of steel and fire.

An omnipresent medical corps.

Through the trials of war, the medical policy applied since 1955 has forcefully proved its correctness. The effort concentrated on building a medico-sanitary network covering the entire country has brought fruitful results. The medico-sanitary structures have not had to be radically changed but simply improved, adapted to war conditions.

The network of health services established during the ten years of peace and developed particularly during the 1961-1965 plan has extended down to the cooperative farms in villages and hamlets (1) and made it possible, as early as August 5, 1964, to cope with U.S. air attacks. The wounded were given treatment on the spot and the more serious cases were taken to hospital after receiving first aid. The medical network of cooperative farms and villages, tested in the realities of war, proved efficient not only for giving first aid but also for epidemic prevention. So, it had to be developed and improved by training more cadres and by renewing and adapting its equipment to the new requirements. Only the consolidation and development

(1) A village comprises 5 or 6 hamlets on an average. *Ed.*

of this network has made it possible, on the one hand to give on-the-spot treatment to the wounded—an essential condition for efficacious first aid—to care for patients without having to move them about, as all travel would be dangerous in case of intensified air war, to look after pregnant women, to deliver them in their own villages; on the other hand, to keep an eye on hygiene work, such as double septic tanks to solve the problem of human faeces, source of so many epidemics of intestinal origin, and wells to provide drinking water; to make mass vaccinations against cholera, typhoid fever, small pox, infantile poliomyelitis, tuberculosis. This rural medical network takes on even more importance as a result of the exodus of the urban populations on account of enemy air attacks. The prompt evacuation, within a single night, of Donghoi city, near the 17th parallel, on February 10, 1965, saved many human lives, for the U.S. air pirates razed the city to the ground on the very next day.

The development of the village medical network has led to the development and consolidation of the district medical network, the district being an administrative unit immediately above the village. Before U.S. aggression started, the district was already the prophylactic and therapeutic unit which directed hygienic and medical work in the villages. This unit comprised a hygiene dispensary directing the popular hygiene movement in the countryside, controlling the yearly vaccination plan for the whole district, detecting epidemics and directing the fight against them,

looking after hygiene in schools, large collectivities and construction sites in the district; a dispensary for the protection of mothers and children, which directs propaganda on birth control; a dispensary for social diseases, directing the fight against tuberculosis, trachoma and malaria. A 50-bed hospital received difficult cases for surgical as well as medical treatment, but in many districts, until early 1964, operations were performed by surgeons from the provincial hospital, as few districts had their own surgeons. In 1964, great efforts were made to provide districts with surgeons, but not enough surgeons could be found for this purpose. To stress the will of the Party and government to continue the socialist development of the country while fighting against U.S. imperialism, great efforts were made to improve prophylactic and therapeutic work. It became particularly urgent to provide district hospitals with emergency surgical services, which would efficiently direct first-aid care given to the wounded in villages and perform surgical operations at the district hospitals themselves, so as to avoid having to transport patients in difficult conditions to the provincial hospital. At the same time, an effort had to be made to equip the district with laboratories to meet the increasing needs of the clinical, hygiene, epidemiologic work and of the fight against eventual enemy chemical and biological warfare. The district unit must therefore become a pivot in the struggle against the enemy on the medical field, and everything should be done to provide it with adequate cadres and material means. The development and improvement of the abilities of the district must be the

criterion of efficient direction by the provincial health service. Cities and provincial towns having been evacuated in consequence of enemy bombing the consolidation of the district network became the main task of the provincial health service. This task must be the foremost preoccupation of health leading cadres in war time. It will solve not only present, but also future problems, when after victory the entire country will face questions posed by industrialization and the intensive development of agriculture.

The provincial medical network, with its dispensaries for hygiene work and fight against epidemics, its dispensaries for the fight against malaria, trachoma, leprosy, for the protection of mothers and children, its central hospital with various medico-surgical departments, had to strengthen the district network by training cadres, providing direct aid for difficult cases, periodically inspecting medical work in the district. When the first bombing raids took place, surgeons and physicians from the provincial hospitals had to go to the bombed villages to help the district surgical services and learn from their experiences. At the same time, the provincial hospitals had to complete their equipment for skull and thorax surgery. Likewise, the provincial dispensaries had to help strengthen the network of district dispensaries. As the district service gradually raised its medico-surgical and epidemiologic abilities, the provincial services increasingly engaged in medical research and in improving existing cadres and training new ones.

The central medical network had the task of assisting provincial organizations in the training of cadres, and periodically controlling their work. The research institutes and large hospitals had to find the quickest and most practical solutions to problems posed by the war.

Progressive and planned decentralization, such is the principal characteristic of the health service of the D.R.V. Already begun in peace time, it has had to be accelerated to cope with war-time tasks. Medico-surgical and prophylactic organizations placed directly under the Health Ministry assist provincial organizations, which in turn help district organizations, the latter having to strengthen the base network made up of infirmaries and dispensaries in villages and cooperative farms. This decentralization has had to be effected at all levels to meet the new urgent needs of defence through the improvement and training of cadres, the control of their work, and technical and material assistance. At the same time, an overall plan for the supply of new equipment and the improvement of the old one has been carried out. The local budgets have to pay for all expenses occasioned by the rapid development of the entire network of provinces and cities.

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At the same time as decentralization was effected to give the provinces maximum autonomy, the health

services were evacuated from the towns to the countryside. Hospitals and dispensaries had to be dispersed and camouflaged, like military objectives. This dispersal naturally led to new difficulties in administration and organization, which had to be overcome. It was necessary to return to the simplest conditions of hospital organization, without giving up continuous efforts to raise the level of our medicine. From among the complex techniques of modern medicine, we had to choose those which are the most efficacious and at the same time the simplest. Regarding treatment, we had to closely combine intra-hospital organization and extra-hospital organization, which must complete each other. With respect to epidemiologic and sanitary work, the dispensaries had to make on-the-spot examinations, collect pathological products and sometimes practise certain difficult techniques.

On the other hand, the implantation of provincial medical services in the villages has raised the medical level of the district and the village, by bringing in new means, equipment and cadres. Dispersal has certainly created many difficulties for modern services, but has made it possible for them to fulfil new tasks, expand the scope of their activities, associate clinical medicine in hospitals with on-the-spot practical medicine, unify intra-hospital and extra-hospital medicine, therapeutic medicine and preventive medicine, theoretical studies with actual practice. And the physician is no longer one for the patient or the disease, but for man in all his complexity — somatic, psychic, ecologic, familial, social and economic.

New problems, original solutions.

Enemy bombing being aimed at paralyzing the economic life of the country through the destruction of roads, factories, dikes and dams, our task is consequently to limit the damage as much as possible. Countless work sites have been set up throughout the country for the reparation of damaged roads and bridges or the construction of new ones. Hundreds of thousands of young people have been mobilized for work at these sites. What was necessary was not merely to improvise a medical service for these thousands of work sites, but to organize a new one which could very quickly meet the new needs. Here also, the medical organization of the village and the district has made it possible, with the addition of more cadres and equipment, to fulfil the new tasks. With the subsequent creation of a health service at the Ministry of Roads and Communications and the improvement of that medical network, real preventive and curative medicine could be practised at the work sites. Where there was only one road, there are now several. Where there was one bridge, there are now two or three. In two years of war, the network of means of communication of the D.R.V. has developed at an extraordinary pace. Provinces which had only a few hundred kilometres of practicable roads now have thousands which are usable by heavy vehicles. This gigantic work requires mobilization of considerable manpower and consequently, mobilization and reorganization of the health services to carry out the new tasks.

To maintain and develop industrial production, it was necessary to disperse the factories. Our workers and engineers have shown incomparable ingenuity in maintaining and raising production. With the creation and development of local industries in accordance with the Party's directives, many local needs could be met, and the difficulties resulting from the destruction of certain central heavy industries could be overcome. The Ministry of Heavy Industry and the Ministry of Light Industry have set up within a short time a medical network serving the worker wherever he may be, and nurseries and kindergartens of factories evacuated to the countryside. Here again, the provincial medical organizations have done great service during the first stages of reorganization, by supplying cadres, equipment and medicines.

Following its military defeats in South Vietnam and the failure of its war of destruction against North Vietnam, the U.S.A. now attacks dykes and dams in an attempt to flood important agricultural areas, starve and drown millions of people, destroy hundreds of thousands of habitations, kill cattle. The Vietnamese people have an age-old tradition of struggle against flood: each hectare of land saved for culture represents centuries of efforts in the struggle against water. The U.S. air pirates direct their attacks particularly against provinces with a dense population and high rice production. The dyke protecting the capital Hanoi has been bombed twice. Early in 1967, the raids became much more frequent and in April, their number was three times greater than in April 1966. The

Vietnamese people, with their age-old experience and having new means at their disposal, successfully struggle against the destructions caused by the enemy. The French geographer Gourou described in these terms the delta landscape after one of those floods so frequent under the colonial regime: "This country... looked like desert dunes where, besides the half-ruined villages, nothing denoted the secular labour of man. Lanes, streams, hollows, everything was levelled: over vast desolate spaces, not a blade of grass, not a tomb, not a sign of life." ("The Peasants of the Tonkin Delta" p. 86). This is the kind of catastrophe that Washington wants to provoke. In face of the enemy's will of destruction, hundreds of thousands of men and women are standing by with their tools and equipment, ready at any time, day and night, to fill up the least gap dug by U.S. bombs. And to serve these hundreds of thousands of laborers, thousands of health cadres from farm cooperatives and villages have been mobilized. The district hospitals are ready at any time to rush personnel towards the bombed dykes to give help, even to perform surgical operations. The medical organization of the village and of the cooperative constitutes the basic organization, which is assisted by those of the district and the province.

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To meet the immense needs resulting from the development of the health services, we had, on the one hand, to increase the production of medicines and

equipment, and on the other hand, rely on aid from the socialist countries. We also had, in accordance with government directives, to disperse the factories controlled by the Health Ministry, enlarge local factories, and build new ones. The use of medical material of traditional medicine made it possible to popularize and develop the manufacture of new medicines in the provinces. Some villages have become self-sufficient in essential medicines through local production. With this thorough decentralization, medical needs could be met even in case of massive bombing and interruption of all communications. Many provinces, with the assistance of local engineering shops and workers, have turned remains of downed U.S. planes into tools used in minor surgery, gynecology, ophthalmology and otorhino-laryngology.

The swift development of the medical network requires new efforts in the distribution of medicines and equipment. In comparison with the distribution of equipment, that of medicines is less tightly planned, so as to allow a simpler regulation. Planning and distribution must also satisfy the requirements of the most heavily bombed localities, which need particularly large stocks of medicines. Decentralization of production has resulted in better coordination among provincial distribution services. Many villages now have their own stocks of medicines: the peasant no longer has to make a long, often perilous, journey, to buy medicines, and the health officer in the village no longer meets with difficulties for his prescriptions. In many provinces and districts, besides the hospital

pharmacy, drug-stores have been set up to serve ambulatory sick people.

To meet the ever increasing needs for cadres at all levels, it was necessary to improve the qualification of existing cadres and train new ones on a large scale. While in 1955, we had one doctor for every 150,000 inhabitants and 1 assistant-doctor for every 80,000 inhabitants, ten years later, in 1965, we had one doctor for every 8,700 inhabitants and 1 health officer for every 1,850 inhabitants. Even with this effort, it would have been impossible to meet the needs of the people's war, in face of the destruction of human lives caused by enemy bombing, had new views not been adopted on the training of cadres. As the base network was staffed with assistant-doctors, nurses, midwives, sanitary agents of villages and cooperatives, this personnel had to be improved so as to be able to give first aid in case of serious shocks caused by bombing, adequately treat war wounds, immobilize fractures for transportation. The war needs should not result in neglecting the movement of general hygiene: problem of human faeces and drinking water; the fight against flies, mosquitoes, rats; mass vaccinations against cholera, typhoid fever, tetanus. Preparations should also be made to cope with eventual biological war, or to detect chemical weapons which could be used by the enemy, and to give treatment in case of poisoning. Major hospitals and research institutes under the Health Ministry are charged with improving the qualifications of provincial medical cadres who, in turn, will transmit their newly-acquired knowledge to district medical cadres, and the latter, to cadres of villages and cooperatives.

The war requires a greatly increased number of surgeons: the provincial surgeons train those of the district; they themselves attend refresher courses given by Hanoi surgeons. "Teach surgery to all medical cadres", this slogan has been put into practice everywhere, and all hospitals have been transformed into schools of surgery. Many specialists in pediatrics, internal diseases, or even epidemiology or phthisiology have become surgeons, specialists in anaesthetics and reanimation, and ophthalmologists or otorhinolaryngologists have become practitioners of general surgery. And thus, within a short time, nearly all districts have been provided with surgeons.

But the war poses problems for the future as well as the present time. The future means numerous sequels of war wounds, neuro-psychiatric troubles to prevent or to cure, for this war of unprecedented savagery against the civilian population will certainly leave scars on people's souls as well as bodies. We shall have to bandage the wounds of South Vietnam liberated after more than twenty years of war, the cruel and indescribable wounds inflicted by the most ferocious and savage enemy of all times: American imperialism. The future will also see the development of a highly scientific medicine. The training of new cadres at all levels must be done at an accelerated pace. The development of laboratories, that of the production and

distribution of medicines have revealed a lack of equilibrium between the number of medical cadres, itself still insufficient, and that of laboratory technicians and pharmacy cadres. This state of things should be changed. Practical problems having pushed fundamental researches into the background it is necessary to have more cadres of fundamental sciences to raise the scientific level of our medicine and tackle theoretical problems posed by the results of practice. As Hippocrates said, "after all, it is the treatment which reveals the nature of the disease."

In the field of medical research, Vietnam has defined its own line based on the concrete conditions of medical practice, and on its achievements. The legacy left in 1954 by 80 years of colonialism and 9 years of war was appalling. Frightful hygiene conditions both in the countryside and the cities, epidemics common to all countries in the world such as measles, whooping cough, influenza, poliomyelitis, and epidemics particular to so-called under-developed countries, such as small pox, cholera, colibacillary diarrhoea, bacillary and amebic dysentery, typhoid and paratyphoid fever, not to mention endemic malaria, intestinal parasitosis, tuberculosis and venereal diseases: this picture in itself constituted a physical indictment of colonization. From a general mortality rate of 20 to 30 per thousand, within ten years the D.R.V. has gone down to one of the lowest rates, 7 per thousand, thanks to an organization which extends into the villages, and also to the development of medical researches. These

researches have a practical aim: to provide our organization with arms which must be efficacious but simple and not dangerous, in order to allow it to defeat within a short time these age-old scourges. The problems of human faeces and of drinking water, principal source of most infectious diseases of intestinal origin, have been solved by the use of double septic tanks and the sinking of wells everywhere, in the countryside as well as the cities. Multiple or mixed intradermic vaccinations on a large scale have made it possible to wipe out infectious diseases and eliminate epidemics. The use of locally made Sabin-Chumakov vaccine has stopped poliomyelitis which had made ravages among the children. Vaccination with killed B.C.G. and ambulatory treatment with I.N.H., biogenous stimulins and *Bacillus Subtilis* have considerably lowered the morbidity and mortality rates of tuberculosis. Vietnamese surgery and surgical specialities have in certain fields their own techniques, such as non-bleeding hepatic resections. The study of traditional medicine has also been made on modern bases and has brought many practical results. The war against the U.S. aggressors has posed new problems which had to be urgently solved. Shock resulting from war wounds in all forms has had to be promptly treated on a large scale, and with the most efficacious and simplest means. The same with wounds on soft parts of the body, and open, multiple or closed fractures. Practical solutions must also be found against eventual biological and chemical war by a barbarous and ruthless enemy. All these problems

are to be solved by our physicians, as well as the problem of supply of medicines in case roads are cut and ports blockaded. We have not been taken by surprise by problems of this scope, as each hospital, each dispensary, apart from their daily tasks, also had their research plans. These problems have been included in the research plans of all provinces, which had to be provided with theoretical and practical means for solving them.

A positive balance-sheet

With a medical organization extending down to the villages and hamlets, with well-trained cadres, the D.R.V. has been able to overcome difficulties created by the war. By 1965 and 1966, all villages in the plain and 90 per cent of the villages in the mountainous regions had set up their own infirmaries. 80 per cent of these infirmaries have assistant doctors. Each village has on an average 20 nurses and midwives and often a physician practising traditional medicine. First aid for the wounded is given in the village or the hamlet itself, with the assistance of the district surgeon for difficult cases. Shock is treated on the spot, thus avoiding the difficult problem of transportation. In the provinces where frequent bombings make such transportation particularly hazardous, surgeons come to the villages to operate. Many surgical operations have thus been performed in underground operating-rooms in villages, while enemy planes

still roared overhead, and many human lives have been saved. Except for a few mountain districts, all district hospitals now have their own surgical services and their own surgeons. Recalling that as late as 1964, nearly all operations had to be done in provincial hospitals, one can realize what prodigious efforts have been made to train surgeons and provide the country with the necessary surgical equipment. Thanks to an extensive network of base organizations, to the devotion and competence of our cadres, to efficacious though simple methods of treatment, in a war when the most murderous weapons have been profusely used by a ferocious enemy, the rate of mortality from war wounds is not high. First of all, thanks to collective shelters, individual shelters, underground passages, the number of killed and wounded is relatively low, over 90 per cent of the victims having been killed or wounded when not in the shelters. The medical corps considers it a duty to take part in this civilian defence, to give it a strong impetus, since prevention is at the base of our medicine. Digging trenches, individual shelters, underground passages, all that is for preventing the effects of air bombing or shelling by artillery. While the ratio of wounds caused by light weapons was 27 per cent in World War II, 23 per cent in the Korean war, in North Vietnam, all wounds have been caused by bombs, rockets and artillery shells. The wounds caused by these weapons are much more serious, and often multiple wounds do not spare any part of the body. Those caused by steel-pellet bombs are often very complex.

Yet, as our medical network improves, the rate of mortality among the wounded has been considerably lowered. In one of the most heavily attacked provinces, the rate of mortality in 1966 was 60 per cent lower than in 1965; it is lower than the rate of mortality among Americans wounded during the Korean war and Frenchmen wounded in Algeria. In one of the most frequently bombed cities, this rate was 6 times lower than 6 months before, in 1966. The network of first aid and treatment of shock set up in cooperatives and villages has proved to be very efficacious as it ensures most rational and simple treatment for the wounded within the very first minutes, thanks to methods which are continuously improved, thus avoiding loss of time and difficult transportation, requiring only polyethylene tubes for serum perfusion. In the above-mentioned province, in 1965, the U.S. air pirates attacked 1,193 times in 699 places: the surgical team of the provincial hospital had to come 143 times to the assistance of district and village teams. In 1966, the enemy attacked 2,757 times in 1,433 places: the provincial surgical team had to intervene only 51 times. In 1966, 19 per cent of cases were operated on by the provincial surgical team, and the rest by district teams. First-aid teams of cooperatives and villages in 1966 attended to twice as many wounded persons as the district and provincial teams. The base organization of cooperatives, villages and districts, which has shown its efficiency in peace-time epidemiologic fight, has also proved to be efficient in the treatment of war wounds. With this base organization,

the difficult and urgent problem of war-time transportation has been solved. To the mobility of the enemy in attending to his own wounded, we oppose on-the-spot immediate treatment, by our base organization. This base organization makes it possible for us to face a long war: it is the expression of the people's war strategy in the medical field. Created through immense efforts during ten years of peace, it has successfully tackled the new tasks imposed by the U.S. war of aggression.

Thanks to this base organization, the D.R.V. has also been able to ward off epidemics which could have had disastrous effects in war time. The war of destruction by air bombing, by killing men and cattle, destroying water reservoirs and sanitary works, is in itself the source of numerous epidemics. Biological and chemical warfare, which the Americans have frenziedly prepared and are beginning to carry out, tops the long list of U.S. crimes. We must be ready to cope with any eventuality. That is why the prophylaxis problem has been given particular attention.

In 1965 and 1966, as a result of the impulse given by Party organs in provinces, towns, districts, villages and cooperatives, thanks to the cadres of our base organizations, our hygiene and epidemiology dispensaries, considerable work has been done to solve the problems of human faeces and of drinking water. In two years, and particularly in 1966, more double septic tanks have been built and more wells sunk than in ten

years of peace. The provinces most heavily attacked by the U.S. air pirates have even surpassed the others in this unprecedented effort. The city of Hanoi has definitely solved this question, putting an end to the dangerous and unpleasant transportation of faeces in the city. In 1965 and 1966, vaccination was carried out on a larger scale than during the preceding years. Besides vaccination by scarification against small pox and intradermic vaccination with killed B.C.G., polyvalent intradermic vaccination by a single injection against cholera, typhoid fever and paratyphoid fevers, tetanus, has been effected. *Per os* vaccination against poliomyelitis with Sabin-Chumakov vaccine has been carried on despite transportation difficulties. To meet these needs, the Hygiene and Epidemiology Institute has had to make greatly increased efforts to manufacture the vaccine. In 1965 and 1966, the Institute produced 131 million doses of various vaccines. Thanks to this gigantic effort in the fields of hygiene and vaccination, no dangerous epidemics have appeared or reappeared, despite the destructions caused by the war, because small pox and cholera had been eliminated as early as late 1957. Even small seasonal epidemics of colibacillary diarrhoea have become rarer, affecting only localities where hygiene measures and vaccinations are still unsatisfactorily applied. The fight against malaria is also being carried on. More provinces during the last two years have achieved the eradication of malaria. This effort has made it possible for thousands of people from the plain to migrate to the mountainous regions formerly infested with

malaria, and this migration has contributed to the economic development of the country.

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The protection of mothers and children has also made great advance. The sinking of wells and the building of bathrooms in the countryside help peasant women meet their daily hygiene needs, which was not possible in former days. Investigations made in different cooperatives have shown that wherever there is a sufficient number of wells and bathrooms, the proportion of cervicitis and vaginitis is comparatively lower. Gynecology services have been created in district hospitals for the treatment of women's most common diseases. A number of villages have also been provided with these services. Birth control propaganda, for the protection of the mothers' health, has been carried on. In some provinces the rate of population increase has been lowered from 34 per thousand in 1963 to 25 per thousand in 1965. In Hanoi, in 1965, this rate dropped to 22 per thousand. Nurseries and kindergartens, despite wartime difficulties, have also developed. In some provinces, the number of children kept and looked after in such establishments has risen from 10 to 20 per cent. In the more heavily attacked provinces, this rate is highest. The U.S. aggressors have not spared the children. The bombing by U.S. planes of a State farm in Quang Binh province killed 20 children. In face of enemy attacks, cooperative farms, like State farms, have divided their nurseries and kindergartens into

separate small units, which are provided with air-raid shelters and underground passages. It is a moving, and at the same time comforting spectacle to see the children, on hearing an air raid warning, calmly slip into their shelters. Moving, because of the daily threats to their lives, and comforting, because it shows that even kiddies have learnt how to defend themselves.

A great effort has been made to develop medical researches and the manufacture of medicines. The treatment of shock from war wounds and commotions is ensured through a wide use of various artificial serums, N.T.9 (1) and retro-styloidian injections. The use of these methods in the above-mentioned province has resulted in lowering the mortality rate by 60 per cent in a year, when the number of wounded has risen by 80 per cent. A new impetus has been given to the treatment of fractures by traditional methods, which have been perfected as a result of anatomical and physiological studies. The dressing of infectious war wounds, open fractures and burns with the use of *bacillus subtilis* fluid, has been studied with encouraging results. Likewise, many surgical techniques, reserved for central hospitals until a few years ago, such as the cutting away of diseased matter in lung and liver, have now begun to be performed by provincial surgical teams. Intradermic injections of a polyvalent vaccine comprizing a vaccine against cholera, typhoid and paratyphoid fever, tetanic anatoxin and killed B.C.G., have been perfected, which makes vaccinations

(1) A product of Vietnamese laboratories.

simpler and more efficacious. New methods make it possible to preserve and transport the Sabin vaccine. Vaccinations against leptospirosis with a vaccine of killed bacilli have also been performed. Wide use of killed B.C.G on children and allergic grown-ups (12 million doses prepared in two years) has resulted in a lowering of the tuberculosis rate even in war time. The study of traditional medicine has led to the popularization of the use of some vegetal extracts for the treatment of intoxication, hepatic insufficiency, helminthiasis, rheumatoid polyarthritis, snake bites, and to some methods of acupuncture in pediatrics. Closely combining modern medicine and traditional medicine, on the basis of practical results obtained, our physicians, pharmacists and chemists are conducting new researches on drugs and methods of treatment, thus posing new theoretical problems which will gradually be solved through experimentation and treatment. Epidemiologic investigations made with the cooperation of laboratories of immunology and biochemistry have uncovered a few hitherto unknown diseases and tackled new prophylactic and therapeutic problems.

To sum up, in two years of war against a ruthless enemy, the development of our organization and researches has given an unprecedented impetus to our health services. It has given our medicine a new dynamism and put the new medical generation and the new leading cadres to the test. Contrary to the U.S. aggressors' expectations, our medical organization, with its cadres, its methods, its practical sense as regards prophylaxis and treatment, has overcome all difficulties created by them. The number of

our cadres has increased and their quality has improved, which has made it possible to maintain a duration of six years for medical studies and five years for pharmaceutical studies, with a view to the future. Besides the rising new generation of young researchers, we have a body of experienced practitioners who carry out with competence and devotion the difficult daily tasks in war time. In two years, 1,357 doctors have graduated from the Medical College and 3,408 assistant-doctors from provincial medical schools. At the same time, 355 pharmacists and 236 assistant-pharmacists have been trained. Nearly all physicians have attended refresher courses, in order to be able to fulfil their new tasks. The training of laboratory technicians has also been promoted on a large scale. The number of village midwives and nurses has increased, and nearly all of these have undergone refresher training, so that in each village there are now on an average three nurses and one midwife. The existence of this base network explains why in spite of intense and widespread bombing by the U.S. air pirates, it has been possible to give on-the-spot treatment to the wounded. To the enemy's organizational mobility we have opposed a fixed and ubiquitous base organization and mobile district and provincial organization.

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To carry out this heavy task, our pharmacy, the supplier of medicine, has had to make great efforts for the production and distribution of medicines. In 1966, this production increased by 20 per cent in comparison

with 1965, 56 per cent in comparison with 1964. In 1966, our sales network of pharmaceutical products increased by 55 per cent in comparison with 1964, almost every village having its own drugstore. In the most threatened provinces, the stock of essential medicines is sufficient for several years. The pharmaceutical industry, which is beginning to develop in the provinces, will soon be able to meet the local needs.

WHEN U.S. aggression started, the foremost question put to our medical corps was whether we should resign ourselves to seeing the wounded die, our hospitals collapse, the former epidemics return, or we should prove ourselves capable not only of facing the danger but also continuing the building of a socialist medicine, begun ten years ago. If this question had not been correctly answered nothing could have been done. The foremost task was to ensure a thorough ideological education for all cadres, who studied the general situation in the country from every angle. The basis for that education was constituted by an analysis by the Vietnam Workers' Party of the strengths and weaknesses of U.S. imperialism and of our own people's weaknesses and immense possibilities, of the tasks faced by the Vietnamese people — from an international as well as national

point of view and the consciousness of our being fully capable of defeating the U.S. aggressors. Firmly convinced of our ability to win, our medical cadres have been working with a new spirit. Applying to the medical field the strategy of the people's war, they have shown unequalled devotion, rapidly getting rid of obsolete practices and views, showing creativeness at all levels, in the technical as well as organizational field. Medical workers, from college professors to village nurses, are animated with the same will, the same spirit. They are men and women deeply conscious of their responsibility to their fatherland and their profession. They are acting like combatants, like revolutionaries.

To the deluge of steel and fire poured by the U.S. imperialists on our cities and villages, we oppose men determined to serve and to win. To the destructive techniques of the most highly industrialized imperialist power, we oppose a revolutionary organization and a revolutionary conception of medicine.

In a word, revolutionary man has got the better of brutal technique, in the medical field as in others.

(It will be difficult to understand the successes recorded by North Vietnamese medicine in war time without a knowledge of the general line which inspires it. We have thought it useful to reproduce in full in the following pages the "Interview with Dr Thach" published in our issue of May, 1965).

Interview with Doctor Pham Ngoc Thach

Minister of Health

Vietnamese Studies. — Your ministry has recently made a report on its activities during the past ten years (1). We should be glad to inform our readers on the main points in this report, especially this one: How has a poor country like the Democratic Republic of Vietnam succeeded within a few years in setting up a medical and sanitary organization which can meet most extensive needs?

Dr. Thach. — You have correctly presented the problem: a poor country with few resources and enormous needs is facing an apparently insoluble contradiction. To be more precise, our country in 1955 was not only poor; to age-old misery was added the havoc wrought by several years of war. The population was threatened with famine. Moreover — and we should not be afraid of using the right word — we were a backward country. Centuries of feudalism followed by nearly a century of colonial regime had left our country in a state of unthinkable backwardness. People still drank water from stagnant pools and invoked the spirits when they fell ill.

(1) 1955—1965. The D.R.V. government returned to Hanoi on October 10, 1954, after eight years of war (1946—1954).

V.S. — *How was the health situation?*

Dr. Thach. — Millions of people suffered from malaria and trachoma, hundreds of thousands from tuberculosis, venereal diseases and leprosy, while practically the entire population was infected with intestinal parasites. And intestinal infections of all kinds were rampant: diarrhoea, dysentery, enteritis, which attacked adults and children indifferently. And then each delivery and childbirth provoked dangerous puerperal and umbilical infections. Pneumonia, measles, whooping-cough, diphtheria, typhoid fever, were most frequent. And in the following years there were serious epidemics of influenza and poliomyelitis.

V.S. — *As far as I know, there were less than one hundred physicians, to care for those millions of sick people. I recall my visits to some hospitals at that time: what I saw looked rather like refuges for the dying. How did you fight the battle?*

Dr. Thach. — *What would you do if you were responsible for the health of the population?*

V.S. — *I would ask the government to build big hospitals, buy medicines and modern equipment, invite foreign specialists to give treatment to sick people and train new physicians. Isn't health the most precious thing, for which no sacrifice would be too great? During the Resistance, many of my friends who were physicians dreamt of up-to-date hospitals that would be built after independence had been recovered.*

Dr. Thach. — *Certainly, during the last few years we have built quite a number of hospitals with modern equipment, specialists from fraternal countries have come to bring us precious aid. Our government has made a number of substantial grants to the people's health services. Many of our physicians urged action in that direction; world medicine has made great progress in the last few years and our doctors*

have been longing to have the most modern methods in treating the sick. This is a legitimate desire, but I must admit that our efforts have not been concentrated on this aspect.

V.S. — *I don't quite understand why doctors should not first of all think of treating their patients with the most efficacious means which the development of science has made available.*

Dr. Thach. — *You have mentioned the battle we had to fight. It was indeed a war against diseases. In the first place, we had to determine a strategy adapted to conditions in our country. Had we simply built hospitals, how many of them would we have to build to receive and treat those millions of sick people? How many doctors, how much medicine would be required? You give treatment to one patient while hundreds are waiting at the door of your establishment. We should have placed ourselves in an untenably defensive position. And what is worse, a patient who had been cured might soon be ill again with the same disease or another one.*

We have resolutely adopted an offensive strategy: to attack diseases at their roots before they appear. In other words: Prevention is better than cure!

V.S. — *Does this in any way affect the treatment of patients?*

Dr. Thach. — *Not at all. We think that treatment is very important, but we don't regard it as the only objective, the sole aim of medicine; we treat patients as individuals to cure them and alleviate their sufferings, but we consider the treatment given to each of them a link contributing to more efficacious prevention of diseases. A cured patient is one less source of contamination. With proper education he may become a good propagandist for the measures which prevent diseases. If we look at it that way medicine comprises three main aspects:*

- measures of general hygiene to ensure a healthy social environment;
- massive inoculation against specific diseases; and
- diligent care and appropriate treatment for the sick.

V.S. — *What do you mean by "ensuring a healthy social environment"?*

Dr. Thach. — We have mentioned the poverty and backwardness of our people. Our compatriots live in conditions which are favorable to the spread of many diseases. To think only of treating the sick, without seeking to improve living conditions and to eliminate some practices, would be futile. You remember the ponds in our villages a few years ago? How did people use them?

V.S. — *I remember very well. People came there to wash clothes, rice, vegetables, to bathe themselves. Buffaloes came to drink or wallow in the water. Pond water was also used for cooking food. The ground in the vicinity was littered with garbage and each rain brought into the pools all kinds of refuse.*

Dr. Thach. — You have omitted the most important detail: the rains also brought into the pools fecal matters from men and beasts, for people had the habit of relieving themselves in any place they found convenient. The water of the pools thus became a real nursery for germs, a concentration point for eggs of all kinds of intestinal parasites. You can easily see how this favored the spread of many diseases: diarrhoea, dysentery, typhoid fever and other intestinal infections. Now think of a physician who has used a lot of antibiotics to cure a man from dysentery, for instance; the patient gets well, is discharged, only to carry on with the practice of drinking water from the pool where he also washes his rice and vegetables. You may also remember the flies swarming around the heaps of garbage and fecal discharges before descending on the food, or on the lips and eyes of people, of children

especially. Remember the triad: water, fecal matters, and insects (flies, fleas, mosquitoes...). Sinking wells, persuading people to drink only boiled water, building latrines, killing flies and other insects thus became foremost tasks for the medical service.

Among the measures of general hygiene, we should also cite education in cleanliness: cleanliness of food, clothes and living quarters. Ensuring for instance, that each member of a family has his or her own towel has been a great task.

By persuading midwives in the countryside to deliver babies in an aseptic manner and to cut the umbilical cord with sterilized instruments, the infantile and puerperal mortality rate has been considerably reduced, and this has proved more efficacious than massive importation of antibiotics.

V.S. — *Besides measures of general hygiene, aren't there special measures for a number of diseases?*

Dr. Thach. — Firstly, there are large-scale vaccinations and inoculations against small pox, cholera, typhoid fever, tetanus, poliomyelitis, tuberculosis. For years, there has been in North Vietnam no case of smallpox, cholera or plague, while no other country in South East Asia has been completely spared. In our country, typhoid fever and poliomyelitis are on the way to extinction. Modern medicine also puts at our disposal efficacious means of treating malaria, tuberculosis, leprosy; there are many active antibiotics against various infections. By closely combining measures of general hygiene with inoculations and specific treatment, we have obtained important results.

V.S. — *But doesn't all that require considerable personnel? Where did you get the doctors, nurses, midwives, sanitary officers to do all these tasks?*

Dr. Thach. — That is the main problem. There is an "academic" way of doing things, which means reserving the

practice of medicine for specialists with several years of training in medical colleges. Anyone treating trachoma was required to go through seven years of medical studies followed by three years' specialization in ophthalmology. Before giving an injection or delivering an infant, nurses and midwives had to study for several years before getting their certificates. Had we followed this academic way, we would have at best given treatment to a few thousands of patients. But for us who are building socialism, under the leadership of a Marxist-Leninist party, medicine has to have a mass character. We rely on the creative spirit of the masses and believe that once they are conscious of the importance of a question they will find means to solve it. There are among the masses people of all walks of life who have a passion for medicine and who after a short course of specific training, become good nurses or sanitary officers and are able to give adequate care to patients suffering from malaria, trachoma, tuberculosis... Within a few years we have succeeded by this method in building up a network of assistant-physicians, midwives, nurses and sanitary officers covering the whole rural area of our country. In each village, delivery is now carried out in an aseptic manner, the inhabitants can obtain injections against smallpox, cholera, typhoid fever, etc., get first aid in case of sudden illness or accident. For each district, which is made up of several villages, we have a rural hospital which can treat serious illnesses, and carry out simple surgical operations. In each provincial town there is a polyclinic. But it should be emphasized that this medical network directs its efforts mainly toward the prevention of diseases.

V.S. — *How efficient are the cadres trained so rapidly and on such a large scale? I could not help feeling some apprehension when I learnt, for instance, that village sanitary officers*

were actually performing surgical operations on entropion (1) cases.

Dr. Thach. — Yes, we now have several thousands of village cadres who can perform such operations to cure entropion which is so frequent a complication of trachoma. Hundreds of thousands of entropion cases have been operated on in our villages. This is almost incredible, but true. After a few weeks of training, our village cadres can perform this surgical operation. The number of entropion cases in the country are now estimated at over a million. How could you operate on all of them if you had to wait until you had enough certificated surgeons? To try to solve our problems in an academic way would be like fighting our war of national liberation only with regular troops, commanded by officers graduated from military colleges. You know how our armed forces were organised during the Resistance, don't you?

V.S. — *There were regular troops who had received advanced instruction and training; they were able to fight on all terrains, engage in all forms of warfare, and were prepared to intervene in arduous combats. These regular forces whose number was relatively small were assisted by a whole network of regional forces and village self-defence units which operated in their own regions and villages. The combatants in these regional and village formations participated in the fighting while continuing their work in the fields: they were peasants in arms. The regular forces were the top of a vast pyramid whose base was our entire people who had risen up against the aggressor.*

Dr. Thach. — Well, our medical organization is like that pyramid you have mentioned. The village sanitary cadre is

(1) Entropion, a frequent complication of trachoma, is a turning inwards of the eyelids, which causes the eyelashes to rub continuously against the eyeballs. Its treatment consists of a surgical excision of the edges of the eyelids.

like the local partisan who in the beginning defended his village with a lance or a bamboo pike then little by little learnt to handle a rifle, to attack a patrol, then to capture small military posts. After a few years of practice, a term of probation in a hospital or some complementary courses, the village sanitary cadre who was originally a peasant gradually becomes a nurse or a midwife capable of treating common diseases or practising some surgical operations. The best among them gradually climb up the ladder to eventually become good assistant-physicians. The physicians who work at the provincial or district town thus have at their disposal a whole network of collaborators who help them in diagnosis, treatment and prevention of diseases. The common cases are treated locally and the hospitals in the cities can then be reserved for serious cases. At the base, there is not only this network of medical and sanitary cadres but also the entire people mobilized for the struggle against diseases.

V.S. — *What is exactly the role of the certificated physicians, the specialists, in this vast army? Is it that of a general staff?*

Dr. Thach — That of a technical and scientific general staff. I said "technical and scientific", for there is at the base a problem of general mobilization of the entire population, a problem of orientation, of overall strategy of medico-sanitary action which requires another type of leadership, another general staff.

We have a strategy, a personnel recruited and trained in a particular manner, who must now be given adequate weapons, that is the means for appropriate prevention and treatment of diseases. It is the task of the medical corps to perfect these means and propagate them.

V.S. — *Haven't these means been already perfected by world medicine?*

Dr. Thach — Obviously, we don't have to re-invent for ourselves the whole of medicine. We apply methods invented by scientists of different countries, but in many cases these methods have been devised for highly industrialized countries, and their application in our country meets with difficulties which often cannot be overcome. For instance, there is the B.C.G. anti-tuberculosis vaccination which was invented nearly forty years ago. The B.C.G. is a live vaccine the use of which requires special precautions not possible in an industrially backward country, with an inexperienced corps of nurses. These inconveniences have led scientists in many countries to try to find a dead B.C.G. vaccine which could be handled more easily. They have failed. They did not persevere in their experiments, as their respective countries can afford the elaborate precautionary measures needed in vaccination with live B.C.G. In our country, we have to find a vaccine easy to handle, or give up vaccination. So we tenaciously carried out experiments with killed B.C.G. and we succeeded in developing a vaccine which is very easy to handle, yet remains very efficacious. At present, millions of people have been vaccinated with killed B.C.G. and we noted a marked decline in T.B. morbidity, especially among children. For other inoculations, we have successfully experimented with intradermic injections which require much smaller quantities of drugs than for sub-cutaneous or intramuscular injections and do not provoke any dangerous or painful reaction.

V.S. — *Did you sometimes have to modify methods of treatment which have become classical?*

Dr. Thach. — To try to simplify the means put at the disposal of the masses, such has been our constant preoccupation. I again take the example of tuberculosis. This disease is now efficaciously treated in many countries with the combined use of three drugs: INH, streptomycin, PAS. Of these, INH is the most efficacious, and the cheapest and

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easiest to handle since it is administered orally, and is not open to accident. But it requires adjuvants to increase its efficaciousness. Streptomycin and PAS which are commonly used together with INH are expensive and difficult to handle as they may cause intoxication. Treatment with those three drugs requires a long stay in hospital, a condition which would considerably limit the number of people who could be given treatment. We have perseveringly tried to use other efficacious drugs together with INH. During the years of Resistance, we tried to use the Filatov method (injection with placenta extract) against various infections. We combined it with the treatment with INH. At first, we got no results. Then friends who practised traditional medicine suggested the injection of placenta extracts at the point of lung acupuncture (in the omo-vertebral area). At present, tens of thousands of cases have been successfully treated with INH combined with Filatov injections at the point of lung acupuncture. This method has proved to be as efficacious as the triple treatment with INH, streptomycin and PAS.

V.S. — So you have not hesitated to resort to traditional Oriental medicine, although you have been trained in Western medicine. Do you do it just as an experiment or systematically?

Dr. Thach. — It is firstly a question of principle. We greatly appreciate the thousand-year-old experience of our people (and of all Oriental peoples). The scorn of Western-trained physicians for traditional medicine derives from an erroneous conception of science and a profound ignorance of the results obtained by traditional medicine. Those who despise the age-old experience of many peoples only show how narrow their scientific knowledge is. Besides, Western medicine still remains powerless before many diseases. The number of healers and bone-setters who now practise in the most developed countries, and the profusion of home remedies in these countries testify to the fact that Western medicine remains

powerless before many diseases while certain treatments not yet accepted officially have proved to be efficacious.

I need only refer to acupuncture the efficaciousness of which has now been universally recognized and I would also like to draw attention to the extreme richness of the vegetal pharmacopoeia of traditional medicine.

V.S. — Among the tens of thousands of vegetal varieties found in our country, how can you know which ones have medicinal properties?

Dr. Thach. — Naturally, one cannot experiment on all those vegetal varieties one after another. The age-old experience of the people and physicians of the traditional school comes into play here. There are about 16,000 people practising traditional medicine. Shall we "outlaw" them, or shall we pay the greatest respect to this ancient science of which they keep the secrets, and integrate them into our medical machinery? We have followed the second path. Together with physicians trained in modern methods those "quacks" are now studying the scientific application of traditional medications to numerous diseases. While they become acquainted with the fundamental notions of modern medicine, our physicians learn the principles and important methods of treatment used in traditional medicine. Thus, we gain a substantial increase in both personnel and prescriptions, and an important new orientation in our scientific research.

V.S. — I have seen in our drugstores many new medicines prepared from our country's flora which are gradually replacing hitherto imported products.

Dr. Thach. — We are working systematically in this direction. One of the great difficulties of poor countries is lack of medicines. We still have to import a number of products, because our pharmaceutical industry is not yet well developed. Nevertheless, from our experiments with traditional

medicine, we have succeeded in preparing a great number of local products, either against specific troubles, for instance antidysenteric, anti-helminthic medications or against current ailments, such as anti-neuralgic, anti-diarrhoeic, anti-rheumatic etc. medications. Many diseases can also be cured at small cost by acupuncture. We promote the cultivation of medicinal plants, not only on an industrial scale but also by individual families. We encourage each family, particularly in the countryside, to grow in a corner of its garden a few plants for the treatment of common diseases (headache, diarrhoea...) and plants with antibiotic properties... We have even begun to export a number of pharmaceutical products extracted from our country's flora: rutin, palmatin, rauwolfia extract...

V.S.— I couldn't quite understand when you spoke of the orientation in scientific research. Certain physician friends of mine, who have come back from abroad, complain of the difficulties they meet with in their researches.

Dr. Thach— No doubt, a poor, industrially under-developed country has not the means that more highly developed countries possess, but shall we fold our arms in the domain of research? On the contrary, the less means a country has, the more it must develop technical and scientific research, so as to find out processes and methods appropriate to its national conditions. In scientific research, we have to consider, on the one hand, the technical and material means, and on the other, the orientation of the research. If we conceive research work as it is done in other places, if we only repeat and verify the works of scientists of other countries, we can only feel depressed by our powerlessness. Research work is comparable to the exploration of a virgin forest. If we follow the path that better equipped and more experienced scientists have trodden, we cannot achieve great results. We must carefully study what other people have done, strive to get the latest scientific knowledge, but we must also blaze our own trail. Only by boldly taking up practical problems of our country and endeavouring to solve them, can we make our work fruitful.

I have given the example of tuberculosis. Here is another instance, about antibiotics. They are very costly and we are not yet able to produce them. We have done research in other directions. Experiments being made with the easily cultivated *Bacillus Subtilis* are yielding very good results. In the treatment of many diseases, the *Subtilis* can replace antibiotics. After verifying the clinical results, we must explain how it has worked: here complex physico-chemical analyses are necessary, and we must make tremendous efforts to obtain indispensable equipment as well as to acquire adequate knowledge. Yet, however great the difficulties may be, the scientific workers of the poorer countries must not give up all hopes. We are in a little explored virgin forest, and sometimes, precisely because of our poverty, we can find short cuts.

V.S.— You said that traditional medicine offered an excellent orientation for scientific research. What does this mean?

Dr. Thach.— Take for instance the medicinal plants. In the West, scientists abandon plants and resort to chemical synthesis. But what is the extract of a plant, if not a complex body, the product of a complicated synthesis? Thus, we have either ready-made medicines or products from which we can make higher synthesis, a good part of which process has already been made by those living laboratories: the plants. One of the difficulties of today's medicine is that, in face of the diversity of products turned out by the chemist, the physician does not know which ones to use for the treatment of such and such diseases. Starting from traditional medicine, we have at the same time clinical indications on which to rely for experimentation with the plants, and the products of a total or partial synthesis. These are real short cuts offered us by traditional medicine. There only remains the question of how to take advantage of them.

4—V.S.

V.S. — *Why have the plants been abandoned in Western medicine? Wasn't there also in the West a traditional herbalist medicine?*

Dr. Thach. — Due to complex historical reasons, there has been a rupture between traditional and modern medicine in the West. This is regrettable. We shall not take that course, but there is a danger of letting this age-old knowledge of medicine disappear rapidly, because if we don't cultivate it, those who practise it will have disappeared ten or twenty years from now. Moreover, we are exploiting our forests and reafforesting on a very big scale. Within a few dozen years many so-called wild species will have disappeared and our pharmacopoeia will be greatly impoverished. We must expedite the study of the curative properties of our country's innumerable plants, select them, and cultivate them. Subjects for scientific research are not lacking.

V.S. — *I realise that a lot of work has been done with regard to general hygiene, treatment of diseases, scientific research, formation of cadres, installation of hospitals, dispensaries, sick-rooms... What is, in your view, the most important achievement after ten years of labour?*

Dr. Thach. — I think the most important point is the creation of the whole medico-sanitary network down to village level, the putting of medicine in the service of peasants living in the remotest hamlets, the training of medical and sanitary workers of peasant stock. Nine-tenths of our population live in the countryside; if we establish only urban hospitals, only a minority would receive medical care, and the cities would be overwhelmed by the diseases which would remain rife in the country and would contaminate the actually besieged cities.

V.S. — *All your physicians were city folks, educated in urban colleges; why did you give primary attention to the countryside? Were you not navigating against the stream?*

Dr. Thach. — Yes, we have navigated against the stream in many respects. To make physicians trained in the old faculties leave their consulting-rooms or hospitals and become interested in digging wells and the installation of septic tanks, in a word, in the prevention of diseases, is contrary to their deep-rooted habits. Even a medical nurse of the old school would prefer giving an injection and dislike going to verify whether a septic tank is adequately built or not. To make an injection of antibiotic which cures almost miraculously is a gesture much more captivating than to lift up the lid of a septic tank. To practise a complicated surgical operation with costly ultra-modern apparatus imported from abroad gives more prestige than to lecture on hygiene in villages, or to help village cadres complete their medical education. To have toiled many long years in the faculties and now to believe that medical art can be put into the hands of the masses is not an easy matter either. To have been convinced long since of the absolute superiority of so-called western medicine, to have considered traditional medicine a superstition, and now to approach it with respect, with the desire to learn from it, constitutes also a turning point for our medical corps. It needs great courage to devote oneself to scientific research with very little technical means, equipment, or scientific knowledge when one has always thought that this work requires large well-equipped laboratories and can be done only by experienced academicians.

V.S. — *I think that it also requires great courage to give up one's private practice, which is much more lucrative than the social medicine you have spoken of. Formerly, a physician with a private consulting room or hospital had a rather considerable income; are there private consulting-rooms left in the D.R.V.?*

Dr. Thach. — Nobody has been forced to give up his private practice. This is evidenced by the fact that one private consulting-room still operates in Hanoi. This colleague has refused to do as the other physicians who have done, who have all put

their skill at the service of the state and society. Physicians of the old school, I mean those trained in the French faculties, have voluntarily renounced the easily won income of a private practice for the modest salary that the state or the collective offers them. They have given up pecuniary gains for more favourable working conditions, from both the medical and human points of view.

V.S. — *Thus, there has been a night of August 4th for the medical corps. Have all the physicians become revolutionaries?*

Dr. Thach. — Revolution is the appropriate word. Our physicians are one section of a people who have been waging an uninterrupted revolutionary struggle for twenty years now. Many of them took part in the Resistance war and shared the life of the fighters and peasants during many long years: for instance the dean of our faculty of medicine, and many other professors. After eight years of the Resistance war, having eaten the same rice porridge and applauded the same victories as the fighters of the People's Army, having founded medical colleges in the depth of the jungle, and lived with the peasants, it is difficult now to come back and confine oneself within the narrow atmosphere of a private consulting-room. There is no need to mention those who have been trained in our new faculties and have never known the practice of the medical profession under the old regime. To work for our country and people has become a natural conception of our medical workers.

V.S. — *But you have spoken of navigating against the stream. One can love one's country and one's people while sticking to medical conceptions inherited from the old regime. You have expounded a medical conception which, I believe, runs counter to many things formerly taught. You have also spoken of the courage necessary for the practice of this conception.*

Dr. Thach. — You are right, this is not a simple question. Civic courage is the first step, necessary but not sufficient.

One can be prompted by the desire of serving one's country while trying to practise medicine in the classical way. There would be then contradiction between the aims we want to reach and the means we use. To solve this contradiction, we must go a step further and acquire what I may call "ideological courage." This enables us to change the fundamental orientation of medical practice. For this reason, there is a constant struggle between the two conceptions, in the daily practice of medicine itself. What decides the victory of one or the other conception does not depend on the medical corps as such. Often both conceptions are found in the same physician, and it is not the medical faculty which can tip the scales in favour of one or the other.

Take for instance the question of whether to build up national medicine essentially by our own efforts or to rely primarily on the assistance of more advanced countries. Medicine as a natural science cannot guide the choice. But, the choice of one path or the other will completely transform the daily practice of medicine. We have chosen the first path. The choice has been determined by the general policy of our Party; it is a political choice, not a medical one.

V.S. — *But once this choice has been taken, and the medical corps guided in this direction, does the role of the Party end there? Would the Party let the medical corps free to carry out its activities as it sees fit?*

Dr. Thach. — Certainly not, because a fundamental choice is reflected even in daily practice. To make a fundamental choice and then to let things slide, amounts to doing nothing. To rely essentially on national forces is to mobilize the creative energy of the broad masses at various levels for the purpose of solving problems, to solve these problems according to the mass line, to stick to the hardest questions in spite of all difficulties. The Party has defined the general orientation, but in daily practice, there are still concrete

choices to be made. The Party organizations within the medical and sanitary corps must refer to the Party's general line to decide each choice in daily practice. No success of our medicine over the past ten years can be dissociated from the Party's leadership. Of course, the Party does not lead the medical workers by the hands and tell them to cure such and such disease in such and such manner, but it is the Party which instils into our medical workers the courage, vigour, and vitality now becoming the principal characteristic of our medical service.

V.S.— Our medical corps has another good feature which is new: its complete devotion to the patients. I have seen that even in the most desperate cases, those considered as incurable or beyond therapeutic means, our physicians and nurses never give up.

Dr. Thach.— The civic courage we have spoken of is not acquired once for all. Our medical corps is now so devoted because, under the direction of the Party, it knows that medical work is related to the political and social struggles of the nation. Left alone, the medical corps would be inclined to shrink into its shell, and to be satisfied with a narrow medical morality — trimmed with pompous, great formulae on the physician and his profession. The leadership of the Party constantly instils into the medical organism the vitalising breath of the socialist revolution and makes it keep a fortifying contact with the broad masses.

V.S.— Are there still any great unsolved problems?

Dr. Thach.— We have no pretension to assert that all problems have been solved. In a country which is only making the initial step in industrialization, to meet all medical needs is excessively difficult. We should say that all essential problems have been started off on a path which allows us to envisage a radical solution some time in the future. Naturally there are some problems more difficult than others.

For instance, among the questions of general hygiene the faecal peril constitutes the greatest difficulty. It took a lot of time before we found out the adequate solution, which consisted in encouraging people to build septic tanks with two hermetic compartments. We had to make long trials before we had the final model of a practical and economical septic tank which makes it possible to utilise human manure free of microbes or parasites. We are now launching a movement in the countryside for the construction of one septic tank of this type for each family. In the field of endemic diseases, the solution is relatively easy when we have specific treatments or vaccinations. It is much harder when we have no such means, as in the case of trachoma, for instance.

V.S.— Are there other problems, apart from those of infections and parasitical diseases?

Dr. Thach.— There is no lack of them. One of the problems to which we pay very great attention is the lack of proteins in our diet. The development of our agriculture in the last few years has enabled us to ward off famine; this is a great victory. But our food remains poor in proteins and we are conducting research to make the biological synthesis of proteins from yeasts. There are also problems of a country in full development. For instance, during the last few years, half a million of our compatriots have left the plain area to participate in the economic development of mountainous regions. Such a transfer of population creates great problems for our services. Our compatriots who emigrate now to mountainous regions are no longer threatened by malaria as in the past. Problems also arise from our country's industrialisation. For instance, silicosis does not appear in our country in the same way as in Europe.

V.S.— Do new diseases come into being?

Dr. Thach.—What is most noteworthy is the more and more frequent appearance of diseases proper to middle or old age, as people live longer with the progress of hygiene and medicine. For instance, there appear the infarctus of the myocard and the manifestations of arteriosclerosis, practically unknown diseases in the past. The problem of cancer is also becoming more acute than formerly. Venereal diseases have practically disappeared. This is due less to medical action than to the direct influence of social transformations under the new regime. We must also point out that, facing U.S. aggression, our medical service has been organized to meet the needs of national defence. During the first months of 1965, when U.S. piratical planes carried out air raids against many localities of our country, our cadres at communal, district, and provincial levels showed themselves equal to their tasks. They solved promptly and efficiently the problems they were faced with. Our medical workers, having received a solid ideological formation, have braved all dangers to serve the army and the people.

In short, the evolution of medicine reflects the overall progress made by our country which, although still faced with problems resulting from under-development, has already begun to tackle those posed by a modern society.

Hanoi, 1965.

U.S. war crimes Attacks against the Medical Network of the D.R.V.

U.S. aggression against the Democratic Republic of Vietnam, launched on August 5th, 1964, has been intensified since February 7th, 1965 and has become a large-scale destruction war. The U.S. Air Force has perpetrated monstrous crimes against the civilian population, razing to the ground entire villages and towns, destroying dykes and dams, mills and factories, hospitals and schools, churches and pagodas... The thick network of Vietnamese health establishments, set up during the 20 years of people's power, has been subjected to particularly savage attacks. All these are premeditated crimes in view of the systematic way in which they have been undertaken and the massive means used. U.S. Defense Secretary McNamara has stated that the U.S. Air Force has photographed inch by inch the territory of North Vietnam and that it is capable of finding out the smallest targets, being equipped with the most up-to-date detecting apparatuses.

At the very beginning of U.S. war escalation, from February 7th to 20th, 1965, U.S. aircraft raided four health establishments: the Quang Binh provincial hospital and the medical stations of Ho Xa town and Vinh Thai and Vinh Kim villages, in Vinh Linh district. In the three months of June, July and August, 1965, alone, they destroyed 6 specialized hospitals and sanatoria, 6 provincial polyclinics and 10 district hospitals in Quang Binh, Ha Tinh, Nghe An, Thanh Hoa, Nam Ha, Son La and Yen Bai provinces. Almost all the big provincial hospitals of the D.R.V. have been bombarded, some up to 11 times, such as that of Quang Binh, or even 17 times, such as that of Ha Tinh. Up to now, according to still incomplete figures, more than 100 health establishments from village to central level have been attacked. Most typical of U.S. barbarousness were the bombing raids against the K.71 T.B. Hospital, the medical centre of Yen Bai province and the Quynh Lap Leprosarium.

The K.71 T.B. Hospital in Thanh Hoa province, with 600 beds, was one of the biggest centres of its kind in North Vietnam, with all necessary equipment for treatment and scientific research. From 1960 to 1964, 1,821 patients were treated in this establishment, besides tens of thousands of out-patients.

On July 8th, 1965, at 9 a.m. 40 jet fighter-bombers of the U.S. Navy dropped over one hundred 2,000-pound bombs on the hospital area, demolishing 50 buildings, killing 50 persons, among them 5 medical workers, and wounding 45 others. Afterwards, on July 14th and August 20th, U.S. aircraft again came for

more attacks, causing 4 more casualties. The entire hospital with its 60 buildings was wiped out.

In raids on the Yen Bai provincial capital, during three consecutive days, from July 9th to 11th, 1965, U.S. aircraft dropped hundreds of bombs on an area of less than half a square kilometre occupied by the provincial hospital, the offices of the medical service, the medical school, the hygiene and epidemiologic station, the anti-TB station and that for the protection of mothers and children. Fifty-eight persons, mostly medical workers, were killed and ten others wounded. Thirty buildings were destroyed. The consultation rooms, X-ray rooms, laboratories, and all the treatment wards, with 140 beds, were demolished. It should be noted that the whole medical centre of Yen Bai province was built on an isolated hill and that the hospital bore red-cross signs visible from afar.

The Quynh Lap Leprosarium, the biggest in the D.R.V., counted among the most important treatment and research centres of its kind in the Far-East. Comprising 160 buildings, well-equipped, it could receive as many as 2,600 patients. From 1960 to 1964, 4,000 lepers were treated there, and more than 1,000 have been cured. The establishment was built on the seashore, in Quynh Luu district, Nghe An province, far from all populated areas and important roads, and so could not have been in any way confused with any military target.

On June 12th, 1965, at 8 p.m., bed-time for the patients, U.S. jet fighter-bombers came in several waves and dropped hundreds of bombs and rockets.

Within the next ten days, U.S. aircraft made twelve more attacks. All the 160 buildings of the centre were razed to the ground: dwelling houses, treatment wards, laboratories, dispensaries, clubs, stores, and a power station; 139 patients were killed and more than 100 others wounded.

At the cost of huge efforts, the 2,000 survivors were transferred to an improvised reception centre, in Quynh Loc village. On May 6th, 1966, at 8.30 a.m. and again at noon, U.S. aircraft attacked the new installation, killing 34 persons and wounding 30 others.

The leprosarium once again had to be moved to another site. But U.S. aircraft, still on its track, launched new attacks. On June 12th, 1966, at 7 and 10.15 a.m., June 19th at 10.30 a.m. and June 24th at 10.31 a.m., tens of U.S. aircraft including B.57 heavy bombers, indiscriminately showered bombs, missiles and rockets on the new site, killing three more patients (two of them were to leave the centre the following morning after seven years of treatment) and severely wounding eight others.

All told, up to June 30th, 1966, the Quynh Lap Leprosarium, in its old and new places, had been subjected to 39 day and night raids; 179 patients had been killed and 150 others wounded.

Many similar crimes exposed U.S. barbarousness. On June 1st 1966—Children's International Day—U.S. aircraft destroyed the Thanh Hoa medical station for the protection of mothers and children and the 500-bed provincial hospital, one of the biggest provincial polyclinics in the D.R.V., killing 14 persons and wounding

28 others. The Bac Thai hospital in the Highlands was razed on June 22th, 1966. The nine casualties included several patients and a mother on her delivery bed.

The times and stratagems chosen for the attacks clearly show the criminal intentions of the U.S command and pilots. The raids were mostly surprise massive attacks, conducted at the patients' rest and sleeping time: one, three, five o'clock in the morning, noon, or late in the evening, from 8 to 11 p.m. At Yen Bai, U.S. aircraft first pretended to fly past the hospital towards another target; then they suddenly came back and showered projectiles on the area. At Quynh Lap, they mercilessly pursued lepers going to the shelters on crutches or hiding in hollows, and savagely pounced on ambulances on their way to the raided areas.

With increasing barbarousness, the U.S. aggressors have criminally attacked the Vietnamese capital city. Raiding populated suburbs as well as industrial and residential quarters, they have dropped explosive bombs, C.B.U.s and rockets on Hoan Kiem, Mai Huong, Thanh Tri and Dong Anh Hospitals, the Institute of Malariaology, Parasitology and Entomology and recently Bach Mai Hospital, killing or wounding many patients and medical workers.

*

The U.S. aggressors have caused the medical services of the D.R.V. considerable losses in men, equipment and installations, from village to central level. Up to

the end of August 1967, according to still incomplete figures, 127 health establishments: village medical stations and maternities, hospitals, dispensaries, sanatoria, drugstores, drug-factories, treatment and research centres, institutes, training schools... were destroyed with a large part of their technical equipment. Hundreds of medical workers (doctors, nurses, midwives, first-aid men, village health workers...) and patients have been killed or wounded. A large number of scientific dossiers, the result of long and hard work, have been destroyed.

*

The U.S. aggressors' aims are clear. On the one hand, they strive to disorganize the Vietnamese medical network and paralyse its activities, in order to deprive the sick and wounded of medical care, thereby impairing the morale of the army and the population. On the other hand, they aim at destroying one of the finest achievements of the D.R.V., her health and medical network being considered even by her worst enemies as a remarkable accomplishment of the new regime. The contrast is striking between the medical services of the North and those of South Vietnam, between the former's dense network and the latter's indigence. By means of bombs, Washington aims at the same time at weakening the North Vietnamese people's morale and doing away with the contrast between the two systems.

The systematic destruction of North Vietnamese hospitals and other medical establishments is part and

parcel of U.S. war escalation, aimed at terrorizing the North Vietnamese people and forcing them to surrender, and hindering the march of the D.R.V. towards socialism.

The people and the medical body of the D.R.V. have taken up the challenge and have succeeded in foiling those diabolical schemes: after three years of war, North Vietnamese medicine, as we shall see, is in better condition than ever.

List of main
medical establishments
of the D.R.V.
raided by U.S. aircraft.

*Not including village infirmaries and maternities
as well as district hospitals and dispensaries, more
than one hundred in number.*

- Vinh Linh zone hospital
- Quang Binh provincial hospital
- Nghe An provincial hospital
- Thanh Hoa provincial hospital
- Ninh Binh provincial hospital
- Nam Ha provincial hospital
- Ha Tay provincial hospital
- Hoa Binh provincial hospital
- Son La provincial hospital
- Vinh Phuc provincial hospital
- Phu Tho provincial hospital
- Yen Bai provincial hospital
- Tuyen Quang provincial hospital
- Bac Thai provincial hospital
- Hai Duong provincial hospital

- Vinh city hospital
- Nam Dinh city hospital
- Phu Ly city hospital
- Viet Tri city hospital
- Nghe An T.B. hospital
- Thanh Hoa T.B. hospital
- Viet Bac Autonomous Zone hospital
- North-West Autonomous Zone hospital
- Quynh Lap Leprosarium
- Institute of Malariology, Parasitology and Entomology
- Bach Mai hospital (Hanoi).

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On the Medical Front in Hatinh Province

AN iodious wind blowing from the sea ripples the waters of the river Lam, a wide ribbon running between two mountains, at the Ben Thuy ferry landing. To the north, it is Vinh, the heroic city over whose ruins the U.S. Air Force has lost over 100 planes; on the other bank, the province of Ha Tinh, one of those hardest hit by U.S. aggression. Hardly a day passes without U.S. bombs falling on these parts, in the river itself or on either bank, and innumerable craters surround the ferry landing.

As we drove further south, the signs of the war became ever more striking. On upturned mountain slopes, trees struck by bombs or cannon fire were strewn about or pointed to the sky the charred remains of their trunks. Large sections of Highway No. 1 had been damaged. No more bridge. Not a hamlet left standing. Our car jolted and jerked for miles amidst gaping craters which gave us the impression of a lunar landscape.

As the moon went down, U.S. planes came roaring in from the sea, like wild beasts which had been lying

in wait and were now rushing to the attack. The time was well calculated: in the villages, people were fast asleep, and on the roads, tired drivers who had been driving without lights during the night, had to switch on from time to time their small lamps which gave a diffused light in the midst of the thickening darkness.

In all directions, bright flashes of lightning burst out followed by explosions. The planes, going after trucks and cars, tore the air with the hellish roar of their jet engines. Bunches of flares dropped over ferries, pontoon bridges, crossroads and mountain passes and defiles covered the scenery with an orange-coloured ghostly dawn.

Quick and efficient reorganization

HA TINH, the provincial capital, is 350 km. south of Hanoi. Rebuilt from its ruins after 1954, it has been savagely raided by 7th Fleet planes since the first days of U.S. war escalation. They have completely destroyed it after 107 raids, including 32 night attacks. This administrative centre with 13,000 inhabitants, located near the sea, formerly looked like a holiday resort with its streets lined with filaos and its tidy, mostly one-storeyed, houses. No military target. No factories, except a small power station. Nearly all buildings of some importance were related to social and cultural

welfare: the provincial hospital, the senior secondary school, the teachers' college, and others.

One of the first targets of U.S. bombings was the hospital, a modern polyclinic with 11 wards and 220 beds occupying a large area beyond the limits of the town, close to the fields. The hospital was marked with a red cross quite visible from afar. It was bombed 17 times successively. All the buildings were reduced to rubble.

We visited the ruins of this medical centre in company with a Cuban medical delegation. After a thorough examination of the place, Dr Rubén Rodríguez Gavaldá, from Havana, made this remark: "One hardly finds any crater around the hospital. Neither on the grounds, nor on the enclosure, nor in the streets. The bombs fell on the buildings with rare precision. The only possible conclusion is this: the U.S. pilots hit this hospital deliberately, according to a carefully worked-out plan; for that purpose they had at their disposal highly efficient technical means."

Our guide, the deputy head of the provincial health service, observed: "You would have resented the harm done even more, if you had known how much the building of this hospital had cost the people here. We are in a region constantly ravaged by typhoons, floods and drought. As an old saying goes, 'here the dogs feed on stones and the hens on pebbles.'" Famine and epidemics were rampant. To build this provincial hospital we had to tighten our belts. The cost was twice the amount of yearly agrarian taxes for the

whole province. The money was contributed by the people."

Thanks to the combined efforts of the people and the State—which supplied personnel and technical equipment—the medical and health network of Ha Tinh was set up during the past ten years of peace. By 1965, when the anti-U.S. resistance began, this province with 800,000 inhabitants, 8 districts and 256 villages, had built, besides the provincial polyclinic, 8 district hospitals of 50 beds each, and 259 village medical stations, not counting 6 specialized dispensaries at provincial level, 8 general dispensaries at district level and many rest homes. The U.S. aggressors set out to destroy this network. They destroyed all the 9 hospitals and more than 50 rural medical stations.

"Our medical workers did not expect such barbarousness," the deputy head of the health service went on. "The Yankees did not content themselves with striking each of the targets once or twice, they struck till all of them were wiped out. For example, the Huong Son hospital was bombed 10 times and that of Ky Anh, 15."

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The number of air raids against this small province goes beyond imagination: 1,570 in 1965, 4,103 in 1966 and about 2,000 for the first six months of 1967. Like the provincial capital, all the district centres have been razed. Each of the 256 villages has suffered 20 bombings on an average. And that

does not include the showers of shells poured by 7th Fleet ships on the coastal localities.

"In such conditions," I asked, "how has the medical service of Ha Tinh been able to look after the wounded, care for the sick, fight epidemics and preserve the people's health, all at the same time?"

"In all fields, we continue to give priority to prevention work, which has enabled us to keep down the casualties. Our medical service has representatives in defence committees at all levels, which see to it that networks of trench shelters and communication trenches are dug everywhere. All our urban centres have been evacuated in time. Our hospitals, also removed in good time to villages, go on functioning. While caring for the wounded and the sick, we have pushed forward the movement of prophylaxis, the struggle against social and epidemic diseases."

"Has the new situation required the reshaping of the provincial medical machinery?"

"There is no need to reshape it, for in peace time we already had a network extending down to the villages. We simply strengthened it. It has been divided into four levels with different capacities: the first, that of farm co-ops, gives first aid to the wounded; the second, that of villages, simple treatment; the third, that of districts, performs operations of some importance except those on the thorax and the skull; the fourth, that of the province, very specialized operations."

"How did you solve the problem of cadres and that of medicines?"

"In conformity with instructions from the Minister of Health, we have taught war-time surgery and first-aid techniques to all our personnel. Our training school and our system of short-term courses have been working at an ever quicker tempo. We have begun to produce medicines on the spot. The development of traditional medicine as a complement to modern medicine has, to a large extent, helped make up for the lack of cadres and drugs. It is the same for everything: to fulfil the great tasks incumbent on us, we have taken a whole series of measures required by the situation, but they have proved efficient only because our organization has been so oriented as to serve the great masses, especially the peasants."

A village medical unit at work

SQUEEZED between National Highway No 1 and the sea, K. 13 ranks among the poorest villages of the province, with its sandy aluminous soil threatened in turn by floods and droughts.

"We are lagging behind other villages economically," admitted the Party secretary, "though we have made great efforts to improve our land and provide it with an irrigation system. But, on account of particular conditions which had prevailed for years, we have given priority to medical work, without

On the Medical Front...

which we wouldn't even have the necessary manpower. Its success has contributed much to the economic development of our village and, at present, to the resistance to U.S. aggression."

In the past, the local people suffered constant shortage of food. The low living standards, the proximity to malaria-infested swamps and mountains, the sand-carrying winds, the lack of wells for drinking water, the most thorough ignorance of hygiene rules — all contributed to the rampage of diseases and epidemics. The old folks recall that, at harvest time, malaria used to lay down so many people that there weren't enough hands to bring the rice in. Trachoma affected all the villagers, many of whom ended by losing their sight. Typhoid fever, cholera, small-pox, typhus... took a heavy toll at every epidemic outbreak.

It wasn't until 1955 that K. 13 was able to set up a rudimentary health service, with a few volunteers. It now comprises a 58-member staff serving a population of 5,000 belonging to 6 farm co-ops.

The village health committee of seven members supervises the 8-bed medical station of the village, a maternity home, an operating-room, a drugstore for modern medicines and one for traditional medicines. Its head, an assistant-doctor, besides his general duties in that capacity, is responsible for general hygiene, epidemiology, training of the staff, development of traditional medicine and first aid. He is assisted by three other members: an old practitioner of traditional medicine, a nurse specializing in traditional medicine

and a laboratory assistant. The deputy head, a woman assistant-doctor, is responsible for the treatment of diseases, mother and child welfare, fight against social diseases, and maternity; she is assisted by a nurse and a midwife.

Each of the six farm co-ops has its own health team, charged with propagating hygiene, tracking out diseases and epidemics, giving first aid to the sick and wounded before sending them to the village medical station. This is the first level in the new war-time medical organisation. It has been particularly reinforced. The T.G. co-op for instance, which includes five work brigades with 224 households and 1,063 persons, has a nurse, a midwife, two health workers and seven hygiene propagandists and first-aid volunteers. Its first-aid station, installed in a solid shelter, is equipped for first-aid care and the evacuation of the wounded.

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The bridge leading to K.13, built across a brook with makeshift planks, has been favoured with over 100 bombs by the U.S. air force, in 21 attacks. The road leading to the heart of the village winds its way among bomb craters. Numerous houses have been destroyed, including the village school and the church (part of the population are Catholics). The medical post has been bombed three times.

We were returning from a visit to the sea coast when three fighter-bombers came and dived on a hamlet, dropping a total of 24 bombs.

"How often has the village been attacked?" I asked the head of the village health committee.

"This is the 308th raid."

Instead of rushing to the bombed place however, he took me to his house.

"Adequate measures have been taken", he said. "My colleague Thuan is on duty today at the medical post. The co-op's first-aid volunteers will bring the wounded there, if there are any. As for me, I must get ready for any eventual surgical operation. We have half an hour to go."

Then he asked his wife to serve lunch.

The young physician was a volunteer health worker in 1954, then a village nurse in 1958. He got his diploma of assistant-doctor in 1963, after three years' study at the provincial secondary school of medicine. Soon after U.S. aggression started, he attended a short-term course in surgery at the provincial hospital, which he completed with a probation period at the district hospital. This newly-trained surgeon had so far performed 60 small and medium operations, carried out with the assistance of the village staff.

After a frugal meal taken in a hurry, we went to the medical post. Just as we came in two wounded people turned up.

The first, who could walk by himself, had a wound in the forearm, covered with a piece of gauze soaked

in mercurochrome. The physician on duty, Mrs Thuan, examined him carefully then ordered the nurse to bandage him.

"No broken bones," she observed. "No splinters in the muscles. Look at what they have done at level 1. The wound has been well disinfected, hasn't it?"

The second case was a serious one. The victim — a woman — was lying unconscious on a stretcher. Eight-month pregnant, she had miscarried on the spot, after being wounded by a bomb. She was brought into the operating-room.

It was a small room with wattled walls enclosed in solid earth ramparts. Below the ceiling, hung a white parachute (from a U.S. plane) which protected the operating table from any dust falling from the thatch roof. While the physician examined the wounded woman, his colleague bared a vein to make an injection of serum. Meanwhile, order was given to get ready to carry her to the district hospital once the shock was over. Unfortunately all the care was to no avail.

"A bomb splinter has pierced the right flank," said the physician, "and probably the bowels and the uterus. There is nothing we can do. Such a case is beyond our means. But in any case shock must be overcome before all operations. This we can do."

In three years of war, U.S. bombs have wounded some three score people at K.13. More than 50 have been successfully treated at the village. Only seven have been sent to the higher level.

When we arrived, the co-op of L.G. had just launched a drive to cure trachoma. A village nurse was in charge, assisted by a nurse of the co-op. A large mosquito-net was hung in the main room of a spacious house, protecting a table holding a kerosene stove, a pan, a tray of instruments, and phials of eyedrops. The two health workers were working inside the net so as to keep out the flies, giving consultations, scraping eyelids, administering remedies, etc.

L.G. was the fourth co-op of the village to launch such a campaign, which was to last a week. 600 people were to receive treatment. The fight would go on later in the last two co-ops, until its completion toward late 1967.

"After malaria," the village nurse explained, "trachoma constitutes the commonest social disease here: 85% of the population are affected with it. Having done away with malaria in late 1964 after a three years' drive, we started fighting trachoma in 1965, the very year of U.S. war escalation. Having attended a short-term course in ophthalmology, I was put in charge of the drive and especially assigned to operating on entropion cases. At first people were sceptical. Now that we have performed over 30 successful operations and cured thousands of patients, everybody recognizes the efficiency of our work. All entropion cases have been cured."

"What other social diseases do you still have to combat?"

"Tuberculosis. We have, in the whole village, 7 people sick with T.B. and 18 suspects, to whom we have been giving a combined treatment of rimifon, biostimulin and subtilis. The district health service supplies the medicines free of charge. Here again, we depend on level 1, on the co-ops, for the care given to the sick. Our physician, Mrs. Thuan, supervises the treatment and examines the patients every month."

Together with the fight against social diseases, great efforts have been made to prevent epidemics. There has been no outbreak for many years. Under the supervision of the village health officers, the health workers of the co-ops make vaccinations. Epidemiological activities have been greatly stepped up since U.S. aggression began, for we must take precautions against eventual bacteriological warfare.

There has also been striking progress in mother and child welfare. Since 1965, 100% of the pregnant women have had prenatal examinations; 80% of the deliveries have taken place at the medical post, and the rest at home under the care of the co-ops' midwives. The use of soap and sanitary towels has been spreading day by day, especially among young girls and young mothers. Family planning, though begun not long ago, has had good effect, the birth rate having decreased from over 4% before 1964 to 3.6% in 1965 and 2.6% in 1966. All newborn babies are vaccinated with B.C.G. and against small-pox. People particularly see to it that women and children are provided with solid, well-kept and well-ventilated shelters. Combining their efforts with those of the Women's Union, the village

health officers personally take care of the establishment of nurseries to enable mothers to perform the various tasks required by the resistance.

Finally, an extremely important part of the medical and health work at the village is the movement of hygiene and prophylaxis, an outstanding achievement at village level. All families have double septic tanks; every two or three households share a well. A drive has been launched to build public and family bathrooms and, for the first time, preparations are being made to give vermifuges to all children: piperazin to those under three, santonin to older ones.

The district : the decisive link

Four girls took turns carrying in a hammock a man gravely hit during a bombing raid, to the Kyanh district hospital. They toiled for six hours over a distance of 20 kilometres cut up by rivers which had to be forded or crossed on makeshift bridges. Able-bodied men having been mobilized, the women do even the hardest jobs.

"The man was wounded the day before yesterday, in the afternoon," said the accompanying nurse to the hospital director. "At the village infirmary, we thought it was a simple wound in the gluteus. But his condition got worse and worse."

The physician carefully palpated the wounded man's belly and decided that he needed an urgent operation.

"Be careful the next time," he said softly to the village nurse, his pupil not long ago. "The contraction of the *rectus abdominis radialis* should have made you think of a wound in the abdominal cavity."

The physician, helped by his assistants, started the operation in the light of a mantle lamp, in a spacious and solid shelter. Two nurses standing on stools pointed each an electric torch at the operating table. The surgeon searched the wounded man's abdomen, took out a bomb splinter the size of a pebble, and having sewn up two holes in the bladder, put the bowels in order before closing the abdomen.

"This is his third operation in the day," the nurse on duty told me. "We have another surgeon, but he is attending a quick-training course in ORL at the provincial hospital. The woman physician who helped a moment ago is rather a gynecologist. She has been initiated in surgery since the war began, like the rest of the staff."

"And do you know what the physician was formerly?" another nurse asked me. "A paediatrist. He learnt to handle the scalpel not long before U.S. aggression began and he has performed over 300 operations. The day before yesterday, they brought us an old woman with a bad wound in the head. We were faced with this alternative: to let her die, the provincial hospital being too far away; or to attempt to save her.

the surgeon opened her skull and performed the operation successfully!" The nurse showed me a wounded woman with her head wholly wrapped in bandages, who was moaning softly in a corner of the shelter.

Before U.S. aggression started, Dr Dien — the paediatrist — had learned to operate on cases of appendicitis and to perform Caesarean operations.

In the first days of U.S. escalation, he set out to practise war surgery. He assisted surgeons of the provincial hospital who came and operated on the wounded in the district. Then he himself operated under their guidance. It was following the same method that the entire surgical team of the district hospital were trained. And Dr Dien in turn has trained other surgeons for the villages.

Now that the surgical section of his hospital is in order, he is thinking of setting up four secondary surgical units, one for every five or six villages among the farthest from the district hospital, so as to spare the wounded dangerous journeys.

"Do you know what I am thinking of at present?" the doctor asked me. "To set up a mobile surgical team of the district. We have already the staff. We still have to provide ourselves with surgical instruments, and a car. Not an ambulance, but a tough car for all roads."

The doctor showed me to the other sections of his hospital, which has made considerable progress since

the anti-U.S. resistance began. And particularly the pharmacy. He said:

"Without artificial serums, for example, practically nothing could be done at the basic level. They are necessary for first aid as well as the treatment of numerous current diseases, first of all that of serious cases of infantile diarrhoea."

The woman pharmacist told me of the activities of her section.

"Every month we prepare 100 litres of salt and glucose serums, isotonic and hypertonic," she said. "If need be, the figure may rise to 500. We also prepare novocain at 0.25%, injectable Epsom salts and, from 1966 onward, drinkable subtilis, highly appreciated by our rural physicians for diarrhoea, dysentery and other infections. And a dozen traditional drugs from local medicinal herbs, some of which may be used instead of antibiotics."

Since the war began the district hospital has been entrusted with a new task: the training of cadres for the co-ops and supplementary training for the village staffs. After a quick training course on defence against chemical and bacteriological warfare, in 1967, it opened a six-month course for nurses, with 63 girl pupils.

The chief physician of the district is assisted by an assistant physician who is in charge of a dispensary comprising six sections: hygiene and epidemiology; malaria; fight against trachoma; phtisiology; dermatology; mother and child care. One must also mention

the State shop of pharmaceutical products which sells medicines and buys medicinal herbs; and finally the Traditional Medicine Association which, while running a specialized infirmary, co-operates with the health service.

Under the colonial regime, there was only one nurse for the whole district. Today, in spite of intensive bombings, the district's medical network has brilliantly carried out all its tasks. All the medical posts of the 28 villages of the district have been working well and no epidemics have broken out.

At K. we had seen how urgent cases were dealt with. Now, in C. district we tried to see how a campaign of general hygiene and prophylaxis was conducted.

Five years ago, in 1962, the situation was far from bright in C. In the spring, an epidemic of influenza broke out, affecting 42,000 people (half the population) of whom 42 died. It was followed by numerous cases of diarrhoea and dysentery till the end of the year. The sanitary machine of the district, which then comprised an assistant physician, two nurses and a midwife, was unable to jugulate them, the organization at the basic level being still very poor. The district People's Council (*) held an emergency session on the problem of health and many decisions were adopted: to strengthen the

(*) The highest organ of power in the district.

medical and sanitary network at all levels, to emulate K., the most advanced district in the field of hygiene and prophylaxis, and to build a hospital for the district.

A vast movement of hygiene and prophylaxis was launched, together with a campaign to mobilize material wealth and manpower to build the hospital. Inaugurated in mid - 1964, the hospital was evacuated to the villages at the beginning of U.S. aggression, before its site was bombed.

The objectives put forth were daring, considering the prevailing social conditions and the means available. The theft of draught animals, frequent under the old regime, had caused the peasants to share their houses with their buffaloes or oxen; it was necessary to persuade them to build stables far from the dwelling houses. The people, formerly used to relieving nature at any place they found convenient, had since made noticeable progress by building family latrines, but these did not fulfil hygienic requirements; it was necessary to pull them down and build new ones with double tanks. The use of pond water was the source of numerous digestive diseases; it was necessary to dig wells to get drinking water. Finally, the neglect of body care, due to the lack of proper places for that purpose, was the cause of skin diseases and other affections among the women: it was necessary to build bath-rooms. Double septic tanks, wells and bath-rooms, such were the three major objectives of the movement for rural hygiene and prophylaxis, the

double septic tank requiring more care as to its construction and use. (**)

For the peasants, it was a real revolution in their way of living, the more difficult to carry out because of the acute shortage of manpower and building materials, the district being in an entirely sandy region. The medical and health service received in this ticklish work the valuable help of the Party, the administration and the education department, as well as of the Youth, Women's and Old Folks' organizations. A whole campaign in the political and sanitary fields, with the participation of all branches of activity, was conducted as the war had already begun.

At present, in the whole district, stables are built away from the houses, there is a double septic tank for each family and a well is shared by five or six families. Family and public bath-rooms are under construction.

The old folks often say that in the year of the Buffalo, about 1938, cholera and small-pox epidemics caused 350 deaths. The 1945 great famine killed 550 people, not to mention the cholera epidemic that followed. Malaria, prevailing chronically, decimated the population every year.

At present the peasants, although still poor, eat their fill, have enough to wear and send their children to school. They live in clean houses, well lighted and ventilated, with, at the far end of the garden, a stable and a double septic tank, in most cases whitewashed,

(**) See Vietnamese Studies No. 6, page 146.

and free from smell and flies. The wells, dug almost everywhere in each hamlet, are provided with raised curbs. Many families have their own private bathrooms. Others, unable to get bricks, have planted for this purpose four little hedges of hibiscus, walls of greenery and flowers behind which the women take their daily baths.

**At the provincial
level: self-sufficiency
in the main**

THE X-ray section of the provincial hospital was the last to be installed in its rural setting, after the town had been evacuated. Its buildings, with mud walls and palm-leaf roofs, were similar to any peasants' houses. The X-ray room, curtained with thick cotton blankets, contained a Roentgen apparatus made in Dresden which bore many holes left by bomb splinters.

"It was almost buried under the ruins of the hospital," said the X-ray specialist. "Its removal was made on men's backs. The Americans will never believe that our hospital is still working. But our section has even been strengthened. We have just received a multi-purpose X-ray apparatus and a power generator from the Soviet Union."

He led me to his new machines, installed in two solid shelters. An X-ray specialist, he was happy to have

been sent back to his speciality, after some time devoted to surgery.

"At the beginning of the war, we were short of practitioners. I learned to handle the scalpel in three months before being assigned to a mobile team. Now that everything is in order, here I am an X-ray specialist again."

The surgical section was installed in a neighbouring village. Well-camouflaged communication trenches led to the operating theatre half sunk in the ground, and large enough to receive five or six patients at a time. The chief surgeon having gone to a refresher course on skull and thorax surgery in Hanoi, I was welcomed by his deputy.

"Of all the sections of the hospital," said the surgeon, "ours has had to make perhaps the biggest efforts in face of the tasks required by the war. Our whole establishment has contributed to our work, putting at our disposal the best means and the best cadres. All the hospital staff have been trained in surgery and first aid practice. Even our accountant could, if need be, work as an assistant to a surgeon. We had only three surgeons, and yet, when the war began, we were able to form three teams, each able to operate on two patients at a time. One was on duty at the provincial hospital, while the two others went to help at the lower levels. At present, each district has its own surgeon, or rather surgeons, and we no longer have to go out so often. We can devote ourselves to serious cases requiring special operations."

Doctor Thanh, the anaesthetist-reviver, told me the story of one of those difficult cases. A 14-year-old girl was brought to the hospital in a semi-comatose condition, with a hole in the skull and a cerebral hernia. Victim of a bombing in the forest, she had been laying under the rain for 24 hours before she was found by her relatives. Green pus had gathered over her partly necrotized wound. Half of her body was paralyzed.

"It was our first operation on the skull. It took us two months to save the little girl. Gradually she recovered the use of speech and did exercises under our watch. When we sent her back home, she was able to walk and move about in a normal way."

"How did you manage to stop the bleeding in the brain during the operation?"

"As we did not have the necessary instruments at that time, we burnt the blood vessels with a red-hot bicycle spoke."

"Do you possess a stock of plasma and blood?"

"We depend on the wounded's relatives. If necessary, we give our own blood. This many of us have done, our chief surgeon in the first place."

Surgery has made great progress in Hatinh since the war began. Exercises of the liver and the lungs, formerly done only in major hospitals in the capital, are now performed here. Surgeons have tackled brain abscesses and tumors, thus going beyond the required standard for a provincial hospital.

It is in the same spirit that all the other sections of the hospital are working. The section of gynaecology and obstetrics is able to deal with the more current diseases: ulcer of the neck of the womb, metritis, endocervitis, exocervitis, uterine prolapsus, cyst in the ovary... At the section of ophthalmology, a mobile team has been formed to operate on cataracts. In oto-rhino-laryngology, they have begun to operate on mastoiditis, retro-pharyngian tumors and are prepared to deal with cases of deafness due to bomb explosions. In the section of stomatology, dental prosthesis is being introduced... And in each section, the training of personnel for the lower level is in full swing; great efforts are made to provide every district hospital with new sections: ophthalmology, stomatology, oto-rhino-laryngology, laboratory work, and even X-ray service.

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Together with the mainly curative activities of the polyclinic, the six provincial dispensaries join their efforts to extend a vast network of prophylaxis down to the farm co-ops. This division of work, however, does not at all mean that there is a clear-cut separation between the two tasks: a hospital is expected to contribute to prophylaxis by its example and efficacious treatment, and a dispensary, while doing preventive work, must join in stamping out such and such epidemics or dealing with some social disease. The six dispensaries give technical guidance to the district dispensaries.

The malaria dispensary, the oldest, was founded on the basis of a mobile anti-malaria team set up in 1957. After a period of study to work out the malaria chart of the province, a large-scale offensive was launched in 1962, over vast malaria-infested areas peopled by 530,000 inhabitants. Tens of brigades mostly made up of village sanitary officers set to work. At present, in spite of U. S. aggression, Hatinh has basically done away with that scourge.

The ophthalmological dispensary, which conducts the fight against trachoma, has set up a vast network manned by hundreds of specialized nurses under the supervision of ophthalmologists. In 1966 alone, this network gave 57,350 consultations and treated 34,000 patients, of whom 9,750 have been cured. Sixteen posts for entropion operations are working in the villages, having performed 2,540 operations in 1965 and 1966. The fight, which has been stepped up in spite of the war, will be long, the rate of morbidity in the province amounting to 78.36%.

The dispensary of phthisiology carries its work at three levels: the province, while directing the network, runs a specialized clinic with 60 beds for grave cases; the district tracks out T.B. cases and supervises their treatment; at village level, medical care is given either in anti-TB posts (which number ten in the province) or at home. In 1967, 3,175 tuberculous persons in 256 villages received treatment; vaccinations with B.C.G. were made to 5,175 newborn babies

(92% of the total), and to 250,000 people for a second time.

The dispensary of dermatology, while combating current skin diseases which have somewhat spread due to war conditions: itch, impetigo, scurf..., gives continuous treatment to 243 lepers. The treatment, which is done at home, depends on the basic organizations and goes together with patient explanatory work among the people of the places concerned. A 20-bed clinic of dermatology and a 50-bed lazaret house are under construction.

The dispensary for mother and child care carries out intensive work to propagate women's hygiene, organizes the treatment of women's diseases on a large scale, sees to the health of the newborn, plays a leading part in setting up nurseries, and supervises birth control. In 1966 alone, 2,825 exhibitions and study sessions attended by 210,000 persons were held in the province to popularize basic knowledge of women's hygiene, especially that concerning menses, pregnancy and nursing. In the same year, the gynaecologists gave 18,500 consultations. With the assistance of the State Trade, 400,000 sanitary towels and the same number of panties were sold at low prices to women peasants, who did not use them before. On June 1, 1967, on the occasion of International Children's Day, a large-scale campaign was launched to give vermifuges to 56,000 children from 1 to 6 years of age. The rate of population growth fell from 3.0% in 1965 to 2.4% in 1966.

The dispensary of hygiene and epidemiology, the newest, has become the most important one, on account of the fundamental conception of North Vietnamese medicine and also of the requirements of the war. It is manned by a large staff, including an epidemiologist, a specialist in contagious diseases, a bacteriologist, a woman pharmacist, six assistant physicians and a score of nurses and laboratory assistants. It is provided with well-equipped laboratories, a power generator and a section in which animals are raised for experiments.

Since its establishment in 1964, it has conducted large-scale work of hygiene and prophylaxis, relying on its vast network which covers the whole province, down to the remotest farm co-ops. Thanks to this persevering work, the province, by June 1967, could boast 60,000 double septic tanks, 16,000 wells and 11,800 bath-rooms; the building of these three kinds of major works of rural hygiene will be completed in all the villages by 1968.

Mass vaccinations have been regularly carried out: multiple vaccination in a single injection against cholera, typhoid fever and paratyphoid fevers; vaccinations against tetanus, whooping cough, diphtheria, poliomyelitis and small-pox. Conscious of the possible danger of biological warfare, the population asked for these preventive measures. Since U. S. aggression began, no epidemics have broken out, except a minor outbreak of typhoid fever in May 1966 which affected 9 persons in Duchtho and was immediately jugulated. Every family has been given a vaccination booklet.

As the transport problem has become harder to cope with, the dispensary has produced by its own efforts 25 different culture media and powdered subtilis; they are studying the preparation from local materials of remedies against certain chemical weapons.

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The secondary medical school of the province has had its classrooms and laboratories scattered in several villages where peasant families play host to its 700 pupils. It has grown in intimate association with the provincial polyclinic which provides it with most of its teachers and a base for clinical practice. It is composed of two sections: medicine and pharmacy, in which assistant-physicians, nurses and midwives, assistant-pharmacists and laboratory assistants are trained.

The school director explained to me: "The new circumstances compel us to achieve self-sufficiency in the main and in all fields. To put this into practice, the cadres play a decisive role. We have succeeded in setting up a whole network — I say network — which enables us at present to carry on something like self-reproduction."

"Perhaps you mean that your establishment is able to train enough cadres to satisfy present demands?"

"We aim at satisfying not only immediate needs, but also future needs, when peace is restored."

Besides, we are training cadres not only at school, but also in clinics and dispensaries, in quick-training courses, seminars and practical work."

"Has the war required a revision of the curriculums?"

"There are no great changes as to curriculums, but some in the organization of studies. Naturally we lay stress on first-aid practice and war medicine. In the new situation, we must achieve balance between pharmacy and medicine, and it has been necessary to train pharmacists and laboratory assistants at a quicker tempo. To mobilize local resources in a better way, we accord considerable importance to traditional medicine, in both therapeutics and pharmacopoeia."

Medical supplies and traditional medicine

At the State Pharmaceutics Shop of the province, the director showed me a telegram: "K.A. shop bombed. Limited losses. Report follows."

"It is the third attack on that shop," he told me. "Each of our district branches has undergone at least two bombings. But the damage has been limited. Since the first days, we have taken care to scatter our stores. Those of the provincial shop have been divided into 300 small depots entrusted to the care of the people,

within a radius of several kilometres. The basic difficulty was how to get medicines, which so far had come mostly from the capital. Our stock was small and the enemy fiercely raided communication lines. Some proposed to reduce our activities and let the population manage for themselves. We rejected that defeatist solution. The medical and sanitary network having been set up, it was necessary to give it a worthy supply service. We decided to step up our activities vigorously.

The workers at the pharmacy tried to set up, parallel to the network of medical-sanitary posts, one of village drugstores. The school of medical officers started training assistants to look after those drugstores and at the same time, organise the planting, gathering and buying of medicinal herbs, for local consumption as well as for supply to the higher level. The motto was: "Produce for your own needs, find supplies on the spot." In 1966, the 256 villages of the province were provided with 262 drugstores and each of them with a two-sao (*) garden of medicinal herbs.

A large-scale campaign was conducted throughout the province to fully exploit local medicinal resources. Combining their efforts, the Pharmacy section of the provincial health service and the Traditional Medicine Association mapped out a chart

(*) One sao : 360 sq. metres.

of distribution of local medicinal herbs. They introduced the cultivation of ginseng and many varieties of Chinese medicinal herbs, which had so far been imported. While bee-keeping is not popular yet, it is practised in some mountainous regions and gives honey, which is an ingredient of traditional tonics. Sponsored by the State shop, in some ten families and a State farm, they rear deer, whose horns, when they are not ossified yet, constitute a much-sought-after traditional medication.

The establishment of the factory of pharmaceuticals of the province marked an important stage. In scattered buildings carefully camouflaged under the greenery, 150 workers, men and women, manufacture various medicines in injectable phials, mixtures and solutions, tablets and pills, as well as traditional medications. 72% of the raw materials come from local sources. To cope with the shortage of glassware, the enterprise recovers old flasks and bottles with the help of village drugstores and schools."

"Meanwhile, we continue to receive highly specialized medicines from the capital," the director went on. "We have been able to meet the growing needs of the population. To take a single example, the quantity of antibiotics needed at present is ten times that needed in peace time. And yet, the prices of medicines have gone down by 30 to 50 per cent instead of going up. Thanks to joint efforts at the

central level and ours, we have built up a "strategic" reserve which will enable us to carry on the resistance for several years."

*

Lan Ong, the greatest master of Vietnamese traditional medicine, spent the major part of his life in Ha Tinh. There he studied the local medicinal flora, established the formulae of numerous medications, trained many disciples and wrote various medical works. Two centuries have elapsed since, but Ha Tinh remains a land of renowned physicians.

Under French rule, "Western" medicine being reserved for the colonists and a handful of privileged Vietnamese, it was traditional medicine that played the preponderant part in town as well as country. The people's power, which holds the national inheritance in high esteem, has helped to develop it vigorously. The two medical sciences, modern and traditional, not only have continued to co-exist, but have developed in close alliance.

Ha Tinh successfully applied this line. Its Traditional Medicine Association, founded in 1959, is composed of 400 practitioners, has engaged in multiple activities in both the curative and prophylactic fields and, since the beginning of U.S. aggression, in first aid. It is with its active participation that the 9 provincial and district hospitals and the 105 rural medical and sanitary posts have been provided each with a section of

experience, which so far has been solely transmitted from father to son. Our association also gives due attention to theoretical questions. We will soon publish a collection of traditional medications and a treatise on *materia medica* in Ha Tinh. Naturally, those two works have been written with the cooperation of our colleagues, physicians and pharmacists, of the modern medical school."

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THE old folks recall the times when there was for the whole province a single "mandarin-doctor", a mythical character for the poor, who practically never saw him. Today Ha Tinh has a physician for every 20,000 inhabitants, an assistant physician for every 1,600, a nurse for every 200, not including practitioners of traditional medicine, midwives and pharmacists, first-aid volunteers and sanitary workers in the farm co-ops. Far from hampering it, U.S. aggression has quickened the development of the medical and sanitary network of the province.

Ha Tinh has done the same as the rest of the country.

September 1967.