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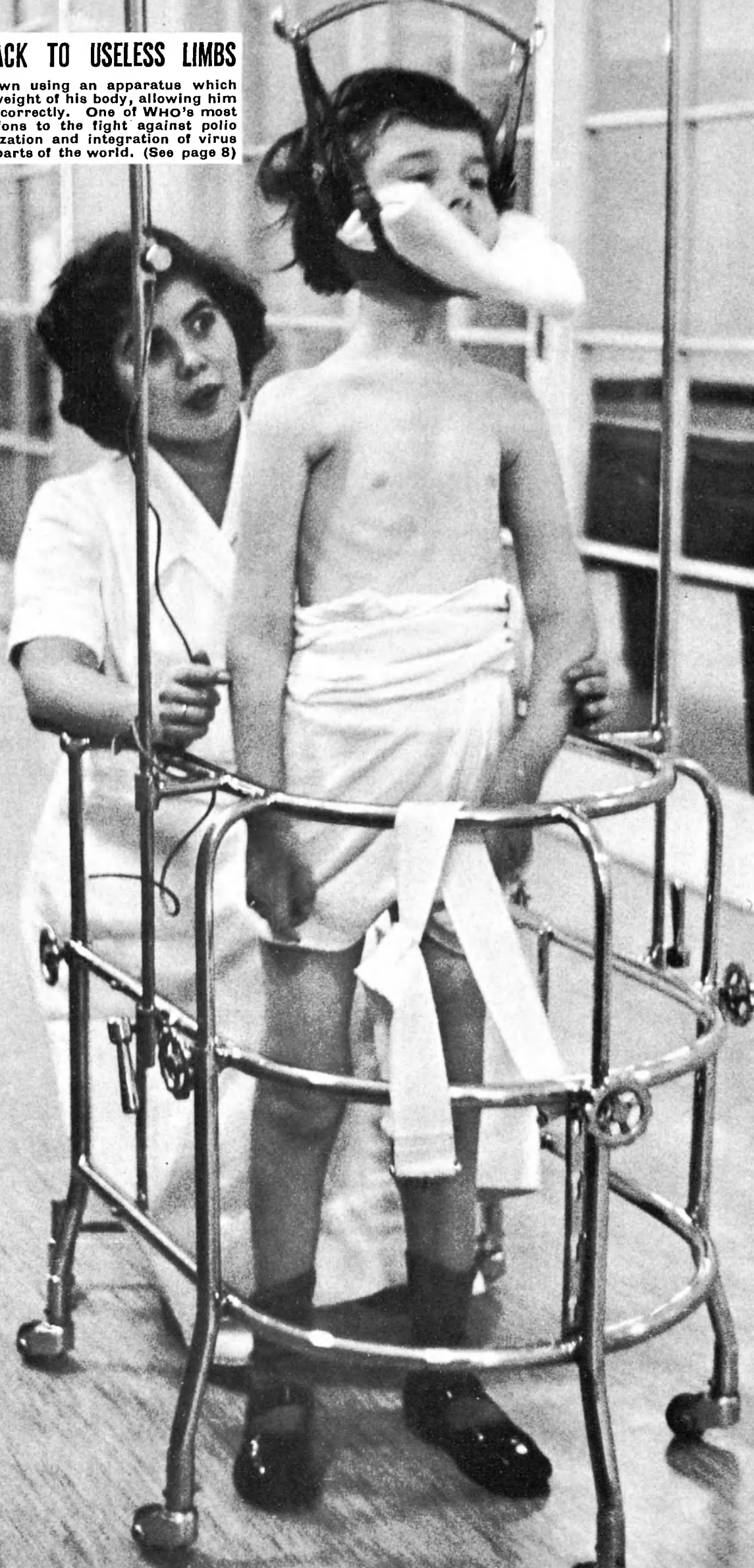
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**WORLD HEALTH**

**TEN YEARS OF PROGRESS**

## LIFE COMES BACK TO USELESS LIMBS

Danish child is shown using an apparatus which frees him from the weight of his body, allowing him to walk slowly but correctly. One of WHO's most important contributions to the fight against polio has been the mobilization and integration of virus researches in many parts of the world. (See page 8)



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WHO

**COVER PHOTO**

**THE CULPRITS.** Bacteria taken from throat washings of a case of influenzal pneumonia being examined at the World Influenza Centre, set up in London under the auspices of WHO in 1948. Most deaths attributed to influenza are in fact due to the complication of bacterial pneumonia. Bacteria responsible must be identified so that correct anti-biotic treatment can be given. (See page 12)

**W**ORLD Health Day this year is also the tenth anniversary of the day when the Constitution of the World Health Organization came into force. It therefore seems a good opportunity for all of us to review the progress towards better health made during the last decade in each country and throughout the world.

There have been great scientific advances—new drugs, new vaccines, new or improved insecticides and better methods of combating and preventing disease.

This new knowledge is being rapidly applied where it is needed. In the last ten years the flow and exchange of scientific information and practical experience have perhaps been greater than ever before. More scientists and health workers than ever before have gone from country to country to learn, to teach and to demonstrate.

Even more important is that an increasing number of people everywhere realize that health is a way of living and thinking, and not merely the absence of disease and infirmity. Governments have come to accept their responsibility for the health of their peoples, and their obligation to provide, besides the classical hospitals and institutions, improved environmental conditions, health care for mothers and children, and safeguards for food and nutrition.

In all this there is nothing very new. For a hundred years or more, advances in the science of healing have been shared freely by all countries, health pioneers have been urging the importance of sanitation, and governments have slowly brought in health legislation and built up health services. The last ten years are remarkable, then, for a general speeding up and extension of health progress along established lines.

But this is not all. Underlying the accelerated progress has been a profound change in thinking and in method.

At an international health conference held in New York in 1946 sixty-one governments laid down new principles for international health co-operation and embodied them in the Constitution of the World Health Organization, which came into force two years later.

The nations that banded themselves together twelve years ago to set up this world co-operative for health with a programme far out-reaching anything previously attempted have since been joined by 27 others, bringing WHO's membership to 88.

Their action has already brought a number of benefits to all. Rapid pooling of information and experience makes it simpler to contend with diseases like influenza and poliomyelitis, to meet the threat to mental health that grows from modern conditions of life, to adapt medical education to changing needs, and to study emerging problems like the hereditary effects of radiations.

Those countries that are struggling to conquer age-old diseases and to build up modern public health services benefit further from the practical help given, in the true "co-operative" spirit, by all countries through WHO.

From all this one fact emerges clearly—what, ten years ago, was little more than fine words on paper has now become a living reality. What was a vision seen only by a few far-sighted men has, with all its imperfections, become a trusted instrument in the service of all countries. And this, I venture to think, will be considered by future historians as one of the most significant factors in health progress in this ten-year period.

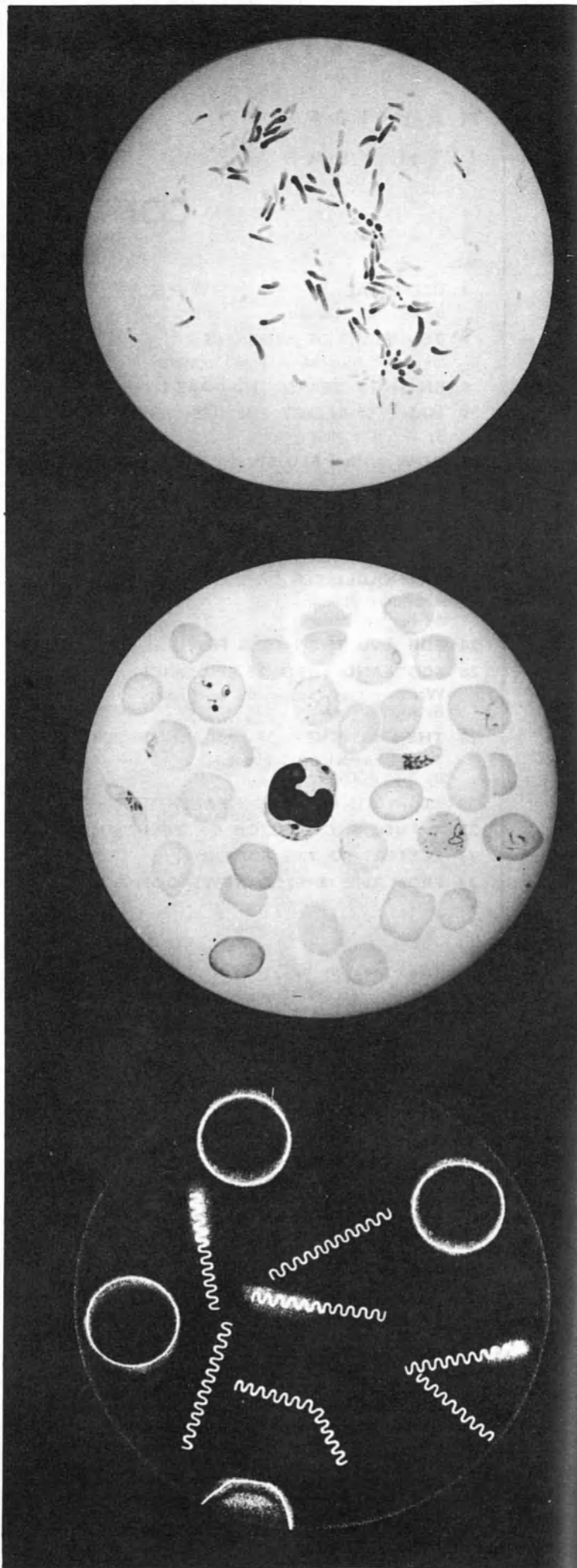
**Dr. M. G. Candau**  
Director-General, World Health Organization

# TEN YEARS

**TUBERCULOSIS** is claiming a relatively smaller number of victims each year. This is partly the result of the launching of history's greatest immunization campaign (192 million people tested and 74 million vaccinated, between 1948 and 1957) and through the setting up of clinics and training centres. Following trials now being made it is hoped to carry out wide-scale anti-tubercular programmes on the basis of "domiciliary" drug treatment. Nevertheless, tuberculosis is still the greatest killer of all the world's infectious and parasitic diseases. (See pages 6-7)

**MALARIA** is a monster which, up to 1948, attacked about 300 million people each year and killed about three million of them. During ten years of malaria campaigns these figures have been cut by 30 per cent, but the disease still presents a huge international problem. However, with the insecticides and drugs that are now available, malaria eradication is possible almost throughout the world if campaigns succeed before insect-resistance to spraying can develop. Thus when resistant mosquitoes emerge there should be no infection to transmit. (See page 15)

**YAWS** can be banished and the ugly, painful sores which it causes cured with a single injection of long-lasting penicillin. Mass campaigns have been launched with international assistance in more than 20 countries and territories. By the end of 1958 it is estimated that half of the 200 million people living in areas where yaws is prevalent will have been examined, and 25 million will have received penicillin injections. Among those examined, the 15 million with the disease in an active form will have been reduced to half a million. (See page 24)



# OF PROGRESS



**POLIOMYELITIS** seems the most perverse of all the diseases. It is a disease of prosperity and of a vigorous population. As public health measures have developed and one contagious disease after another has come under control or has been eradicated, polio has emerged. The discovery in 1949 of a method of growing polio virus in tissue culture revolutionized the study of polio and led to large scale vaccination campaigns with the killed-virus vaccine of the Salk type. Last year, WHO recommended trials with a new live-virus vaccine. (See page 8)

**INFLUENZA** can spread all over the world in the space of a few months and even though causing but a mild infection, it can upset for weeks at a time the economic and social life of countries. Today there are 60 WHO designated influenza centres in 40 countries. When an outbreak occurs in an area, one of the centres reports the extent and severity, and identifies the type of virus concerned. Because of this network, several countries were able to prepare vaccine well before the 1957 epidemic of "Asian flu" reached them. (See page 12)

**LEPROSY** is no longer a disease apart, setting men apart from men. Statistics show an ever increasing number of leprosy victims, but this is because these people no longer try to hide their affliction and are coming forward to seek treatment. Important progress can now be made against the disease largely because of growing confidence in the new anti-leprosy drugs. Now segregation need only apply to the contagious period of the disease. But a great deal remains to be done to seek out and give treatment to these infectious cases. (See page 18)

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next page

TEN YEARS  
OF PROGRESS

(Continued)

# KILLING DISEASES THAT ARE DYING

**T**HE phenomenal decline in mortality is the most significant demographic event of the last decade, according to the United Nations Demographic Yearbook. In the world as a whole, death rates for 1950-1954 (latest available) were lower than those for 1945-1949, and countries with the highest death rates in the earlier period (Africa and Asia) experienced the greatest reduction.

The decline may be attributed in the main to advances in environmental sanitation and disease control, and it is reflected in increased life expectancy almost everywhere. In the more developed countries a new-born girl can be expected to live 4-5 years longer now than 10 years ago, a new-born boy 3-4 years longer; and in some of the countries undergoing rapid development, life expectancy at birth has increased up to 11 years for girls and 10 years for boys.

With a decreasing rate of death and an almost unchanged birth rate the population of the world (now about 2,700,000,000) is growing rapidly: every hour almost 5,000 persons are added, or 120,000 per day, or 43,000,000 per year—an increase calculated to double the world's population by the end of the century.

## Pestilences that stalk no more

The last ten years have seen a dramatic decline in the extent and severity of the pestilential diseases whose names terrified our grandfathers—cholera, typhus, smallpox, plague, relapsing fever and yellow fever.

Cholera, for example, has dwindled in importance to the point of being a problem only in its epidemic foci in India and Pakistan, and even there a significant improvement has taken place: from 1945 to 1949 a total of 824,000 deaths were reported, from 1950 to 1954 less than 385,000. Epidemic typhus is now disappearing from Europe and North America and declining in the other continents. Smallpox is claiming fewer and fewer victims; from 1945 to 1949 a total of 193,000 cases were reported in the whole world compared to 178,000 from 1950 to 1954. Yellow fever shows a decline of about 50% between 1950 and 1955.

## Infections down, accidents up

While deaths from infectious and parasitic diseases are only half of what they were ten years ago, accidents have become a serious and often leading cause of death, particularly among children and adolescents.

In North America and parts of Europe, accidents account for nearly one-half of all deaths among boys between 5 and 9 years of age. Road accidents claim most young lives; then come falls, which in some countries are responsible for up to one-third of all accidental deaths, then drowning, fire and explosions and poisoning.

## Both are doing well

Fewer and fewer women die in childbirth and more and more babies survive their first step into this world.

In some countries, a 90% decrease in maternal mortality

has taken place during the last 20 years. In 1955, the maternal death rate, as calculated per 1,000 live births, was lowest in New Zealand: 0.4; 20 years ago it was 3.8. The decrease is most spectacular in the countries undergoing rapid development, for example Ceylon where the drop was from 20.5 in 1936-1938 to 4.1 in 1955.

As regards infant mortality, the lowest rate in the world is recorded in Sweden, where it dropped from 22 per thousand live births in 1951 to 17 in 1956.

## Malaria—a monster in retreat

At least three-fourths of mankind live in malaria zones. Up to 1948, about 300 million people were attacked by malaria each year and 3 million died. During ten years of malaria campaigns, these figures have been cut by 30% but the disease still presents a huge international health problem.

However, with the insecticides and drugs that are now available, malaria eradication is possible almost throughout the world, provided that campaigns are pushed hard enough before insect-resistance to spraying develops.

Some regions are close to the goal: in Southern Europe, 4,000,000 new cases a year were reported before the introduction of DDT spraying—now less than 10,000 a year. In the Union of Soviet Socialist Republics there were some 4,330,000 cases of malaria immediately after World War II. In 1956 fewer than 13,000 new cases were found and no new infections are expected to occur after 1960. In the Americas, malaria once menaced 135,000,000 people. To date 105,000,000 have been protected and the vigorous campaigns now going on are expected to complete the protection within a few years. In Africa south of the Sahara, malaria presents the most serious and difficult problem with which the specialists are confronted. Nevertheless, at the end of 1955, 14,000,000 of the 116,000,000 Africans living in malarial regions had been protected against the disease.

Even in the Eastern Mediterranean countries, traditional reservoir of malaria, striking results have been achieved during ten years of antimalaria work; before, 40,000,000 people suffered regular attacks of the disease, now less than 14,000,000.

## These are the modern killers

Heart disease and cancer are not only the largest causes of death in the majority of highly developed countries, but they are on the increase.

In England and Wales, for example, deaths due to cancer in 1947 accounted for 15.1% of all deaths. By 1955, the percentage had risen to 17.6. In Denmark the increase was from 16.2 in 1947 to 21.8 in 1955, and in the United States of America from 4.7 to 15.7.

In most of the highly developed countries, deaths from cancer of the respiratory system represent a growing percentage of all deaths due to cancers.

Also deaths from degenerative disease of the heart and arteries (the most frequent cause of death in North America and most of Europe) are increasing. Among the possible causes is the aging of the population and

consequent swelling in the 40-80 age-group in which these diseases are most prevalent. Also, diagnostic techniques have improved, decreasing the number of deaths formerly attributed to "senility" or to "unknown causes."

### New defences against polio

The discovery in 1949 of a method of growing poliomyelitis virus in tissue cultures revolutionized the study of polio and eventually resulted in large-scale vaccination campaigns with the killed-virus vaccine of the Salk-type.

In the United States of America, for example, 70 million people had been vaccinated by the end of 1956. That year, the number of polio cases reported was the lowest since 1947: 15,400 compared to 57,879 in 1952 which was a record year for poliomyelitis. However, it has not been possible to attribute the low incidence in 1956 entirely to the vaccine. In 1957, WHO recommended large-scale trials with a new live-virus vaccine which can be given orally, instead of being injected.

### Tuberculosis—a turning point

Tuberculosis is killing relatively fewer people each year. For example, between 1950 and 1955 death rates per 100,000 population dropped from 58.1 to 31.1 in France; from 13.8 to 6.3 in Denmark; and from 143.6 to 63.0 in Portugal. Nevertheless, tuberculosis is still the greatest killer of all infectious and parasitic diseases, and in North America, Europe and Australia, it accounts for three-fourths of all deaths from these diseases occurring after the age of 15.

A considerable change in the age distribution of deaths from tuberculosis of the respiratory system has taken place: before World War II the majority of victims were women between 20 and 30 years of age and men between 40 and 55. Now, deaths are most numerous among people over 60, women and men alike.

In 1955, a turning point was reached in the world outlook on tuberculosis with the advent of new drugs promising a revolution in the management of the disease. Pilot studies are being sponsored by WHO to determine whether the new drugs can effectively be used in large-scale home treatment of tuberculosis victims.

### History's greatest vaccination campaign

In history's greatest campaign of immunization, 192 million people have been tested, and 74 million vaccinated against tuberculosis with BCG (Bacillus Calmette-Guérin) between 1948 and 1957. The work was started in war-torn Europe by Scandinavian relief organizations and later expanded to the other continents with the aid of WHO and UNICEF. Since 1951 the campaign has been supported by these two international bodies in close co-operation with the governments concerned. By far the largest part of the programme, both with regard to the number of countries and the number of persons involved, has been carried out in Asia.

### Pneumonia steady at new low

A substantial decrease in the number of deaths from pneumonia has taken place since penicillin and other antibiotics became available.

Most lives have been saved in New Zealand, Switzerland, Italy, the Netherlands, the United States and Sweden, where the decrease in pneumonia deaths ranges from 62.1% to 53.1%. Next come Norway, Denmark, Canada, Finland, Austria, Scotland, Ireland, Germany and Japan,

with a drop of 43% to 32.6%. The figures for South Africa, Northern Ireland, England and Wales, and Portugal have gone down from 26.2% to 14.1%.

Nevertheless, pneumonia still ranks among the 10 diseases causing the greatest number of deaths in the more developed countries. It remains one of the three leading causes of death among infants, and is even more serious among the aged. Little variation in the death rate for pneumonia is at present being reported from one year to the next, and it can be assumed that it will remain at the present level for some years to come.

### Fewer beds, yet more patients

Mental patients occupy between 40 and 50% of all the hospital beds in Europe and North America. There are not enough beds for thousands more who might benefit from hospitalization. How can this pressure be eased?

New mental treatment techniques now being applied in several countries may provide one answer. Ten years ago in Ville-Evrard, France, for example, the average stay of patients before discharge was over one year; now it is four months. This hospital which in 1948 had 550 beds and admitted 100 new patients a year, now has only 270 beds but gives care to 600 new patients a year and the percentage of patients that must be kept indefinitely has gone down from 50% to 7%.

### Diphtheria capitulates

A prevalent disease at the beginning of the twentieth century, diphtheria is now in full regression throughout the world, particularly in Europe which was the continent most seriously affected. In a number of countries, among them the United Kingdom and Denmark, diphtheria has to all intents and purposes disappeared through vaccination campaigns.

In 1948, 119,000 cases were reported from the whole of Europe. Now the annual number of cases is less than half that and in 28 countries in Asia, America and Europe, the number of deaths from the disease dropped from 5,148 in 1950 to 2,824 in 1955.

### Whooping cough still strikes

Although still the most deadly of infectious diseases for children, whooping cough is on the retreat. In 28 countries all over the world, deaths from this disease dropped from 26,325 in 1950 to 10,376 in 1955. The highest death rate is among children less than one year old but it is in this age-group also that the decrease is most striking: from 7,874 in 1950 to 1,623 in 1955. Whooping cough is unique among the diseases of childhood as it usually strikes and kills more girls than boys.

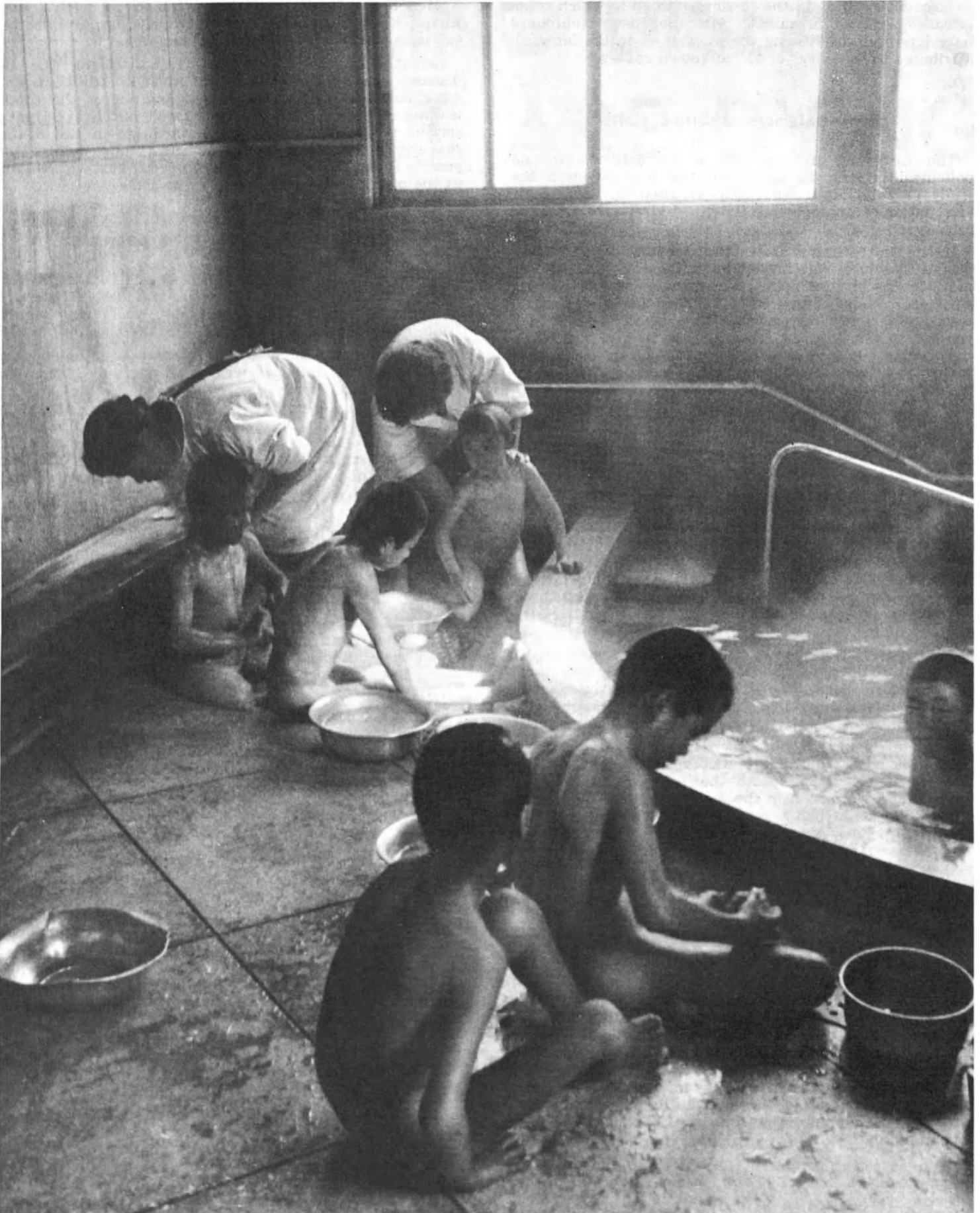
### Who is getting medical care

There are now 1,236,000 physicians serving the world's 2,700,000,000 inhabitants and the 638 medical schools operating in 85 countries graduate annually about 67,000 new doctors.

There are 14 countries fortunate enough to have one doctor to serve every thousand or fewer people. But there are 22 others where there is only one doctor for 20,000 or more inhabitants. Between these two extremes, the rest of the world shows great variations.

As a general rule, there is a shortage in rural areas, while cities have been known to have an over-abundance of medical practitioners.

While nine countries have one medical school for less than one million of population, there are 13 countries with only one such school for 9 to 17 million people.



WHO photos by Dominique Darbois

## SHIGENORI HAS WON HIS FIGHT OVER POLIO

When Shigenori Kameyama was a baby living on Kyushu Island in the south of Japan an attack of polio paralysed him so that he could not lift a hand nor move a leg. His pathetic and useless life might have continued indefinitely had he not been taken at the age of eight to the *Seishi Ryogo En* Institution in Tokyo, a special "hospital-school-and-home" for the rehabilitation of crippled children which, since 1950, has been gradually transformed by the Ministry

of Health and Welfare into a demonstration centre for the entire country. (Beginning in 1952, WHO and UNICEF helped by providing fellowships for Japanese to learn other countries' rehabilitation techniques.) When Shigenori entered the Tokyo "hospital-home" he was incapable of standing on his twisted feet, even when someone held him. But the treatment he received—massages, baths, a small surgical intervention, exercises, electrotherapy—



# The mysterious virus SMALLEST ENEMY OF MANKIND

by  
A.M.-M. Payne

Chief, Section of Endemo-epidemic Diseases, World Health Organization



and above all his own tenacity, brought a wonderful change. When he left the hospital last year he was not 100% rehabilitated, but he could get up unaided, brush his teeth, dress himself, and go out into the street unafraid. Photos show: (opposite page) young patients in the hospital's bathing room; (above) Shigenori smiles a victorious smile after his first halting steps, and uses a large doll (bottom photo) to learn simple things like buttoning his clothes.

**I**F the era of Pasteur, Koch and Lister has been properly called the era of bacteriological revolution, the last twenty years equally have the right to be known as the era of virological revolution. Technical advances in the basic sciences have provided new tools which have been applied to the study of viruses with remarkable results. New techniques and methods have opened up vast new fields in our understanding of the ecology of micro-organisms in general and viruses in particular.

The word "ecology" needs definition since it contains a concept which is fundamental to the modern approach to many aspects of medicine, not only communicable diseases but also many other problems of human life, such as mental illness, accidents, chronic degenerative diseases, etc. Ecology is the study of the interactions of organisms and environments. No living thing, be it a human being or a virus, can be studied in isolation from its environment. Here I will confine myself to the interactions of viruses and animal organisms, especially the human animal, and the environments in which these interactions occur.

It might be thought that this is an unnecessarily broad approach to an outline of progress in the understanding of human virus diseases, but that is not so. Indeed, it is true to say that it is largely because of the breadth of this approach that progress has been so rapid and promises to continue at unreduced speed. Different aspects of the ecology of virus diseases have been studied by specialists in widely different disciplines, including, as well as virologists, biochemists, geneticists, immunologists, epidemiologists, pathologists, clinicians, veterinarians, sanitarians, anthropologists, zoologists, entomologists, plant biologists, etc., and often it is only by consideration of the findings of all that the true picture will be seen and a final understanding and solution of a problem arrived at. As yet it must be admitted that we have not reached this goal for any virus disease, although for some diseases it appears to be within sight.

Viruses are the smallest known living things if it is accepted that the essential quality of life is the ability to reproduce. Viruses, however, cannot reproduce independently of other living cells. This, and other facts, including the fact that certain viruses when highly purified can be prepared in crystalline form, has led to many arguments as to whether they are really alive. During the past ten years a tremendous amount of information regarding the nature of viruses, their size, shape, density, autonomous existence, origin, reproduction, metabolic activity, chemical composition, their antigenic qualities which provoke defensive reactions in the animal host and so forth has been accumulated so that now the question as to whether they are alive seems largely philosophical. Their ecology is that of living things.

A virus in order to survive must come into contact with a susceptible host, or more specifically a susceptible cell in that host, it must be able to multiply in the host, it must be capable of being dispersed so as to reach a fresh host, and it must be able to survive outside while seeking a fresh host. These activities have been neatly expressed as—getting in, multiplying, getting out, and getting about. This picture has been modified in the process of evolution. If we can attribute a purpose to the form of life we call a virus, that purpose is

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## VIRUSES (Continued)

# Three types of polio are now recognized

to survive and it can do this best by coming to terms with its host as it were, living together without doing harm, taking its nourishment and reproducing in as unobtrusive a way as possible and having a way out so that its progeny may get out into the world in search of new living quarters. Most virus infections are indeed inapparent, and a lethal or damaging relationship is relatively uncommon, yet it is just these latter which are important in medical science.

Never before has this fact been so evident as now, as a result of the technical advances of the last ten years. Perhaps the most far reaching of these is the development of tissue-culture techniques. Cultures of living tissues are not new. They have been practised, albeit with some difficulty, for three or four decades. The discovery of antibiotics overcame one of the major problems of ensuring the sterility of these culture, and this, in association with advances in the composition of the media in which the cells are grown, in the choice and methods of preparation of the cells for culture and recognition of the destructive effect of viruses on the cells, the cytopathogenic effect, has made tissue cultures the most widely used method of growing viruses in the laboratory. Application of these new techniques has resulted in the isolation and identification of many hitherto unknown viruses, some of which have been proved to cause disease while others appear to be harmless. Dozens of new viruses have thus been discovered in the last ten years and no one knows how many more remain to be discovered. The situation is quite comparable with that of the era of the bacteriological revolution when many different kinds of bacteria were recognized for the first time and the long process of identification, classification and recognition of their significance began.

Broadly, the new viruses of medical importance may be grouped under three headings according to their source—those isolated from the alimentary tract, often referred to as enteroviruses; those isolated from the respiratory tract, which include the adenoviruses and the influenza viruses; and those isolated from insects, the arthropod-borne or "arbor" viruses.

### More victims among older people

**T**HE enteroviruses include the well-known polioviruses responsible for poliomyelitis as well as others less well known: the Coxsackie viruses and the so-called ECHO viruses. The Coxsackie viruses, named after the small town in New York State where they were first isolated, fall into two groups, A and B, and two dozen types have been recognized. Many of them can be isolated from stools or from the throat in tissue culture but their most striking characteristic is the ability of most of them to infect infant but not adult mice. They have been shown to be responsible for a variety of diseases including aseptic (i. e. non-bacterial) meningitis, herpangina (an affection of the throat), pharyngitis, pleurodynia (a painful affection of the chest which occurs in epidemics), and a severe form of encephalomyocarditis in infants (an affection of the heart and brain).

Some of the nineteen ECHO viruses so far discovered have been identified as the cause of extensive epidemics of aseptic meningitis, others cause summer diarrhoea, particularly of infants and young children, the role of others in producing disease is still unknown and it is quite probable that some are harmless parasites.

The most important of the enteroviruses are the polioviruses which I will consider in some detail, partly because

of the dramatic advances made during the last ten years, and partly because it is an admirable example of the importance of understanding the ecology of diseases in developing control measures.

Before the last World War poliomyelitis was regarded as a problem confined to a few countries and believed to be rare in most parts of the world. It was thought then to be primarily a disease of the central nervous system, transmitted by the respiratory route, the virus probably reaching the nervous system along the nerves of the nose and throat. During and after the war, there was an alarming increase in the incidence of the disease, not only in countries already affected, but many other countries also began to suffer epidemics of increasing severity and frequency. Furthermore, the disease in some countries no longer took the form of an infantile paralysis but began to affect more and more people in older age groups, until in some countries one third or more of the cases were over the age of fifteen and older people seemed to suffer more severely.

### Is vaccine the final solution?

**T**EN years ago the prospects for controlling such a disease seemed remote indeed. The first big step forward was the recognition that the infection was widespread in areas where the clinical disease was rare, that is to say symptomless infections were far more common than had been thought, several hundred times more common than clinical cases, and these infections did not appear to involve the central nervous system. It was already known that the alimentary tract of certain primates could be infected so that attention was directed to the possibility that it might be essentially an alimentary infection which only occasionally involved the central nervous system.

The next big step was the recognition that there was not one but three types of poliovirus, all capable of causing disease but giving little or no cross-protection against each other. Then came the great discovery that the viruses could be grown in cultures of non-nervous tissue. This not only cast further doubt on previous concepts of the ecology of the infection but also made it possible to undertake extensive epidemiological studies, impossible when monkeys had to be used. It also raised the possibility of producing virus in such quantities that a vaccine might be made.

Hopes were raised further by the discovery that the primary site of infection was indeed the alimentary tract and that the virus appeared to reach the nervous system through the blood stream. This made it seem likely that if antibodies or protective substances could be produced in the blood by means of a vaccine they might act as a barrier and prevent the virus from reaching the nervous system and so causing disease. This would have been an unlikely possibility if the virus travelled along the nerves. Developments in tissue-culture techniques, particularly the development of a synthetic medium for the growth of the cells, accelerated progress which culminated, as is well known, in the development of a vaccine now shown to be both safe and effective in preventing paralysis after infection with poliovirus.

However, quite apart from the problems which still remained regarding production, testing and use of the vaccine, it was not regarded by many scientists as a final solution to the problem of poliomyelitis.

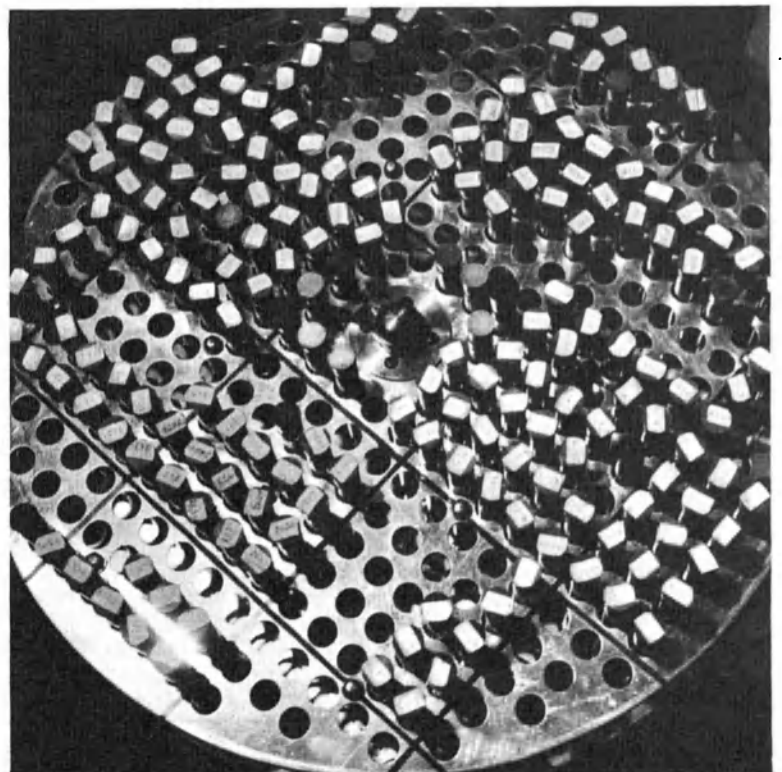
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WHO photos

**PINHEADS  
MARK POLIO'S  
PATH ACROSS  
A CAPITAL**

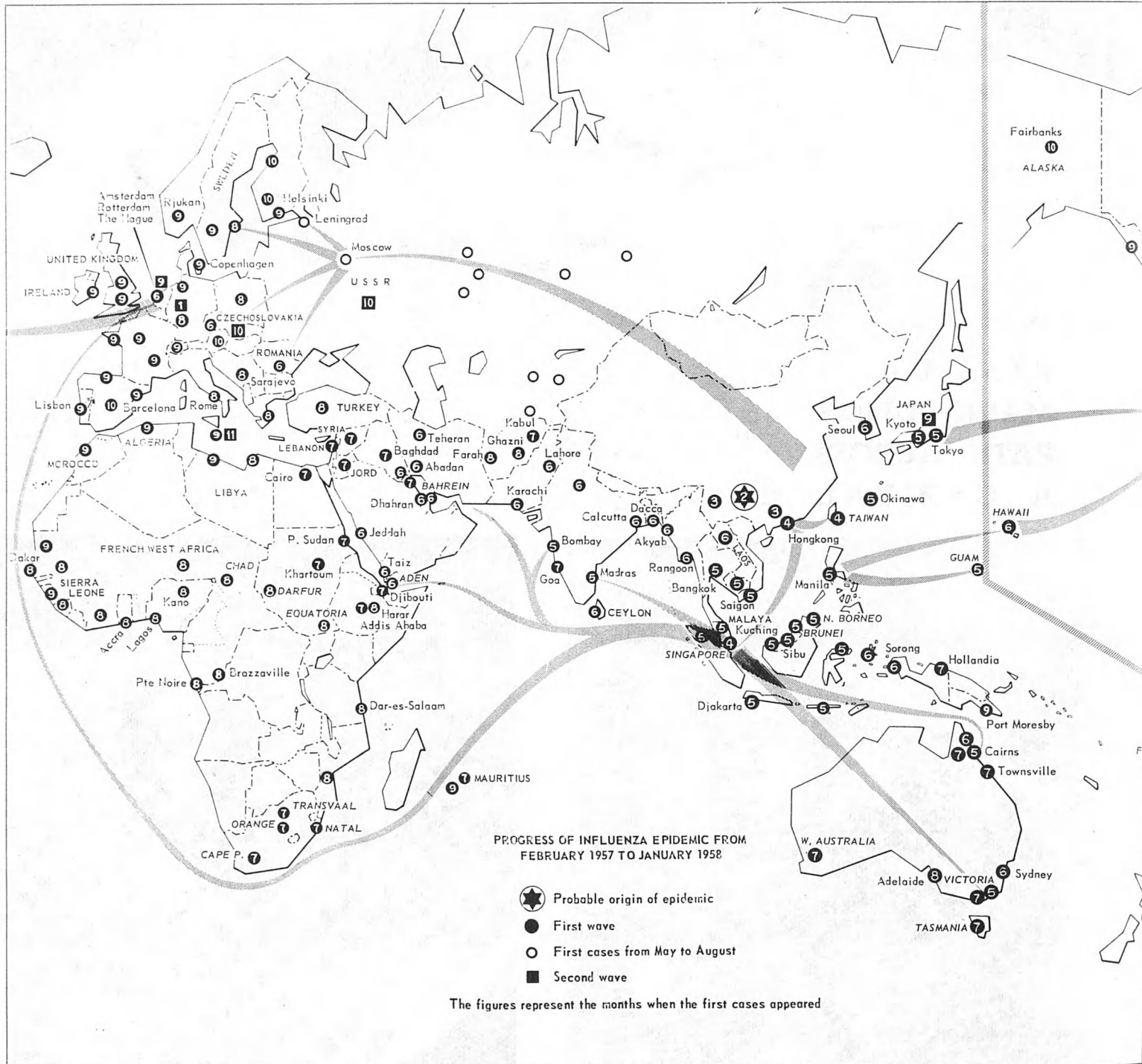
In the hospital of Hornbeck on the Danish coast close to Elsinore, a little girl is alive and breathing thanks to a Swedish apparatus connected directly with the trachea (above). She was one of the 3,000 people who caught polio when the city of Copenhagen experienced its worst-ever epidemic of this disease in 1952. The outbreak in Copenhagen was one in a long series of such epidemics which have been growing and spreading all over the world since the first occurred in Stockholm in 1887. Map of Copenhagen (below, left) is covered with a rash of pins, each representing a polio case (white ones show cases of paralysis of the respiratory muscles). Denmark had a polio rate of 131 cases per 100,000 inhabitants in the 1952 epidemic. Hornbeck hospital is a rehabilitation centre, and also does virus research. Below, right, test tubes filled with living tissue which have been infected with polio virus and liquid allowing the tissues to grow. This is part of the work involved in finding a vaccine.



# HOW ASIAN 'FLU SWEEPED AROUND THE WORLD

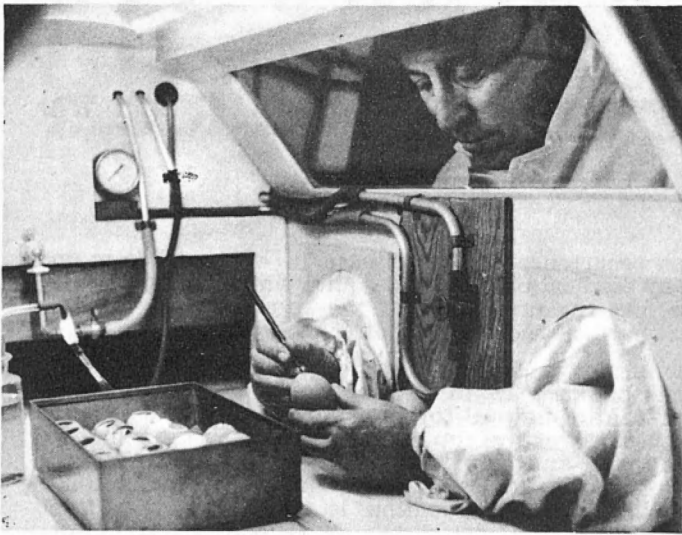
On May 4, 1957 reports of a 'flu epidemic came to the World Health Organization from Singapore. Within a few months "Asian 'flu" had girdled the world. (See map below). A WHO network of 57 influenza centres in 46 countries went into action. The micro-organism was found to be a "new" virus and was given the name Virus A/Singapore/1/57. All possible measures were taken to isolate the virus and produce a vaccine against it. Headquarters of the battle was the World Influenza Centre in London (entrance shown, far right) where a constant search is made for 'flu viruses and a universal vaccine against all types of influenza. Viruses are grown in fertile eggs for two to three days after which the fluid is removed from the infected eggs (right) in an ultra-violet chamber to prevent bacteriological infection. This fluid, after several days in a refrigerator, becomes the vaccine.

WHO photos



**VIRUSES**  
(Continued from page 10)

**'Tamed' ones give immunity**



The vaccine was effective, but not completely effective; furthermore, it was shown that although it prevented paralysis it did not prevent infection, and it was considered probable that the immunity after vaccination would be of relatively short duration, thus requiring reinforcing doses at intervals throughout life. The vaccine was unable to influence the spread of virulent viruses in nature so that there could be no prospect of eliminating the disease. Attention was therefore turned to the ecology of the natural disease and it was found that in many parts of the world the balance between infection, immunity and disease was as favourable as we have been able to achieve by artificial means in many other communicable diseases.

This favourable situation seemed to be associated with the widespread dissemination under conditions of poor hygiene of viruses, many of which seemed to be of low virulence, so that few very young children escaped natural immunizing infections at an age when symptoms were least likely to develop.

Considerable progress has now been made towards reproducing and improving on this natural process. In the laboratory, strains of virus of very low virulence have been developed and initial trials on humans shown that they can still produce alimentary infection and stimulate the formation of protective antibodies without producing disease, and there are good reasons to believe that this immunity is long lasting, possibly life-long. Furthermore, immunity is produced to reinfection of the alimentary tract, so that control of the circulation of natural virulent viruses becomes theoretically possible. However, more work is needed before we can be sure that these attenuated viruses will remain harmless when used on a large scale in man. This is the crucial question because these viruses get out and about in the stools and can infect other persons just as naturally occurring viruses do. This will not matter if they remain stable but we do not yet know whether they will.

**When antigen meets antibody**

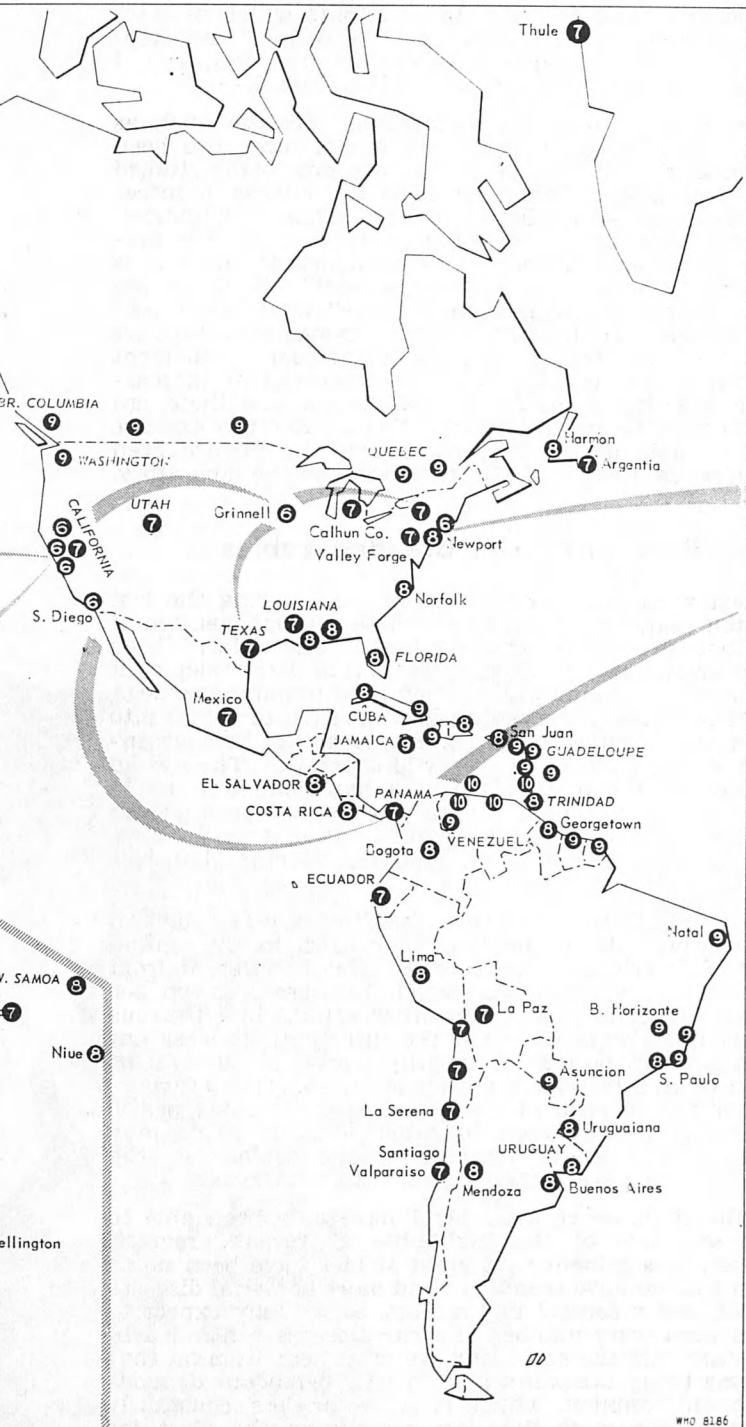
**I**n the field of respiratory virus diseases there have been similar developments. Many new viruses have been discovered and much progress has been made in the study of previously recognized viruses. Influenza remains the most important epidemic respiratory disease and, during the past ten years, two more influenza viruses, influenza c and d, have been discovered. However, the progress in the study of the two most important influenza viruses, A and B, especially the former, has been even more striking. World-wide studies of the evolution of the influenza viruses have been intensified since 1947 and certain patterns have emerged which increase our hopes of eventually limiting the effects of this disease.

Here again it is the interaction of the virus and its environment both inside and outside the host that is important. Protective antibodies are produced in the body in response to the stimulus of substances known as antigens which are part of the infecting micro-organism, and antibodies are one of the most important defences of the body against disease. They are generally highly specific: reacting only with the antigen which stimulated their formation. The influenza virus behaves as if it can change its dominant antigens so that previously existing antibodies can no longer interfere with its ability to produce infection and disease.

It now appears that one of the influences which brings about this change is the presence in the population of the antibody itself. An influenza A virus which has spread widely begins to find it difficult to infect new hosts because they already have antibodies, difficult to multiply, and difficult to get out and about. It is in danger of failing to survive. Some viruses in special circumstances do in fact die out in this way; measles in the Pacific Islands, where after causing a devastating epidemic the virus dies out from lack of susceptibles, is one example.

But the influenza virus is antigenically unstable, the dominant antigens which it presents on its surface and which are exposed to antibodies can change and, when this happens, the new virus has a

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# Flu virus has its 'fingerprints' taken

much better chance of survival, finding susceptible hosts, and getting out and about. This can be compared with evolution by natural selection. Minor changes of this kind occur fairly often, every two or three years, and the new virus causes the epidemics with which we are familiar.

However, at longer intervals, every ten to fifteen years or so, a much bigger change occurs so that the virus finds no antibodies to restrict its multiplication and spread, with the result that a pandemic such as occurred in 1957 may ensue. At first it seemed that the 1957 virus was entirely new but then it was discovered that some elderly persons already possessed antibodies which showed that a similar virus had been prevalent in the world before, some seventy years or so ago, and possibly had been the cause of the pandemic which occurred in 1889-1890.

## Seeking a universal vaccine

**I**F this is true, it raises the possibility that the changes which the influenza virus can undergo are limited and that viruses which have been prevalent in the past but which have apparently disappeared may reappear in the future. The process therefore may not be truly evolutionary but rather revolutionary in the sense that it may go round in a circle. When we know all the possible forms the virus can take we may be able by vaccination to produce antibodies against all of them. The virus will then be unable to take us by surprise as it did in 1957.

Implicit in these observations is the fact that infection with a virus leaves permanent traces in the form of the specific antibodies already mentioned. When we have the appropriate antigen we can discover whether man has had previous experience of that antigen during his lifetime. Such studies have wide applications in the understanding of virus diseases. In influenza it has been shown that the influenza virus of swine was prevalent in man about the time of the 1918 pandemic and it seems likely that it, or a closely related virus, may have been the cause of that pandemic. The postulated re-emergence of the 1889 virus from some unknown situation and the fact that the swine virus no longer affects man, but persists in pigs, has raised the possibility that certain animals may play a role in the ecology of human influenza. This is at present speculation but several important studies are in progress and, if it proves to be correct, it will be a major advance.

A number of other viruses causing upper respiratory infections have been discovered, the most important group being the adenoviruses of which several types have been identified. Some of them have been incriminated as the cause of epidemic respiratory disease and some can infect the eye, causing a form of conjunctivitis. An effective vaccine has been developed against these viruses. The common cold, although not serious in itself, remains one of the major pests of mankind. Several viruses causing a similar clinical picture have been discovered and it now appears that it is not an entity but may be due to a number of different agents. We are still a long way from a solution of this problem but the application of the new techniques gives us more hope for the future.

## Monkeys spread yellow fever

**S**MALLPOX and yellow fever were in the past two of the most dreaded virus diseases. We can now exercise a large measure of control over these diseases but, nevertheless, problems still remain. With yellow fever the problem results from its ecology. In both the Americas and in Africa the infection persists in monkeys and certain other animals and cannot be eradicated. It is indeed spreading in the jungles of Central America. We can protect man with a highly effective vaccine and we can

prevent occurrence of the disease in epidemic form in towns by eradication of the mosquito which transmits the disease, but the prevention of the *spread* of the disease to other parts of the world requires constant vigilance.

In connexion with the studies on Russian Spring Summer encephalitis, an interesting concept has been developed, that of natural foyers or focal areas of disease in which, because of the total ecology of an area, including animal, insect and plant life and the physical conditions, a focus of infection can persist apparently indefinitely unless the ecological situation is disturbed by outside interference, such as destruction of vegetation, animal or insect life. Indeed, when the ecology of an area is known it is possible, within limits, to anticipate which diseases may be present. Such areas must be defined and steps taken to prevent human disease and the possible spread of the infection, by vaccination or other means.

The causes of other more mundane diseases such as the viruses of measles and chicken pox have also been isolated in the last ten years and are now being studied in the laboratory. Others, such as the viruses of infectious hepatitis, serum hepatitis (two forms of jaundice), glandular fever and trachoma are still elusive. The eye-disease, trachoma, is particularly important since it is widespread over a large part of the world. However, the so-called virus is probably not a "true" virus for various reasons including the fact that it responds to antibiotics which the true viruses do not. Furthermore, coincident bacterial infections seem to be very important in increasing the severity of the damage of the eye and these can also be controlled by antibiotics. We can therefore exercise a considerable degree of control over the disease even though we cannot as yet study the virus in the laboratory.

## Bats carry the dreaded rabies

**A** REVIEW of progress in virus diseases during the last ten years would not be complete without mention of that dreaded disease: rabies. There have been several important advances. The first is the development of a live virus vaccine which, when used to immunize dogs, is most effective in preventing introduction of rabies into human communities which commonly occurs through infection of dogs, sometimes by wild animals. The second advance was the preparation of a hyper-immune serum which, used in conjunction with vaccine, has been proved to be much more effective in the treatment of humans, especially after severe bites, than the vaccine alone as was formerly practised.

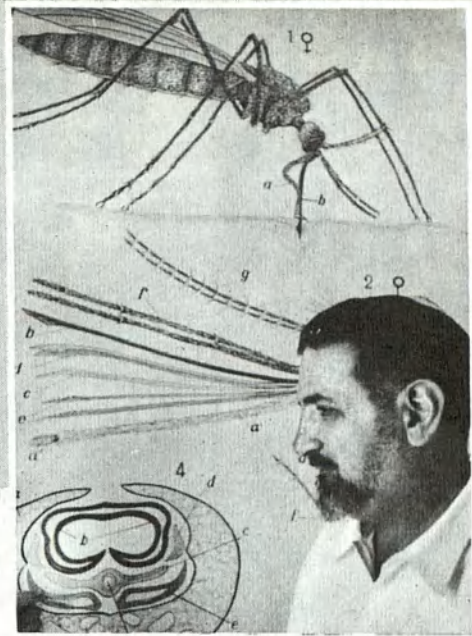
The third advance has been the discovery of rabies in insectivorous bats in the Caribbean area, in the United States of America, and in Europe. This is different from rabies in the vampire bat which has been known for decades. It seems that, unlike other animal, insectivorous bats do not always die from the infection; at least not within a short period. A lengthy period of survival of the bat in an infectious condition is obviously more favourable for the survival of the virus than the short period of survival usually seen in other animals. This may explain a number of features of the ecology of the disease which have hitherto been little understood.

In the short space available I have only been able to touch on some of the highlights of recent progress. However, it is evident that great strides have been made and just as we have seen more and more bacterial diseases brought under control in the past, so we may expect to see an increasing number of virus diseases controlled in the future. At the same time we must bear in mind that no living thing exists in isolation. Its behaviour depends on its environment which is more or less constantly changing. We must therefore remain on the alert for the emergence of new diseases or changes in the pattern of old ones.

# DOCTOR MALARIA

He has three million patients in an area larger than France

by Jean Manevy



**S**NUFFLING like a seal, "Doctor Malaria" emerges from the ice-cold water of a mountain stream, with the gills of a four-pound trout between his finger-tips.

"There's our dinner. All it needs is a few minutes in the pan."

In the heart of Kurdistan, in the rocky wilderness of the Gorges of Prince Ali, on the boundaries of Iraq, Turkey and Persia, the world is still in its Old Testament stage. If a man wants to eat, he must know how to catch a fish and snare a wild-fowl. If he wants to get any sleep, he must know exactly how to pick a safe camping site, and he mustn't be afraid of scorpions or snakes.

"In India", says Dr. Malaria, "I had to do away with a leopard which seemed to want to make a meal of my wife, and I had my car smashed to smithereens by elephants. In Dankala, a herd of wild donkeys ran amok in my camp, and three of my camels died of thirst. A bunch of bandits took me prisoner—so that they could use me as their family doctor. We've pitched camp in all sorts of deserts and forests—even volcanos. My daughter narrowly escaped being born in a tent. One fine day, my eldest

son fell into the camp fire. That's been the daily ritual for the last fifteen years."

For the last fifteen years, Doctor Malaria has gone on his rounds in Eritrea, India, Switzerland, Liberia, Sierra Leone, Gambia, the Sudan, Iraq—first for Italy's health authorities, and more recently as a technical expert of the World Health Organization.

Doctor Malaria was born, an Italian national, in Tunis. His father came from Sardinia. His real name is Luigi Mara. But that name can sound so like the word "malaria" that, throughout the whole length and breadth of Kurdistan and Iraq, where he directs the struggle against the marshland plagues, he has been christened "Doctor Malaria", or, alternatively, "El Mudie Malaria" (Big Chief Malaria)—which makes things simpler all round. In the same way, when the people of those parts talk about his family, they refer to "The Malaria Tribe", since most of the doctor's trips are made with the whole family in tow. The family consists of Tina, his wife, Gian Paolo and Enrico, his two sons, aged fifteen and thirteen (who are at present at school and temporarily parted from rest of the family) and Jordana, his daughter, aged eight.

It was six years ago that Iraq, worried because her economic development was threatened by the presence of malaria on the largest stretch of her territory, applied to the World Health Organization for help. And it was to Doctor Malaria that there was entrusted the most seriously threatened part of the country, Kurdistan, which stretches east of the Tigris to the Zagros Mountains and Anatolia.

The Kurds are mostly nomads, rough mountain folk who haunt the valleys of Anatolia and the Zagros Mountains. You can tell them by their heavy black woollen turbans, their caftans of bright cotton, their baggy trousers fastened at the ankle and kept up by thick waistbands, and their green and red and black cotton robes. You can also tell them by their women-folk, who are adorned with trinkets made up of gold and silver coins, and who wear rings in their ears and sometimes in their noses.

How many of them are there? Three million, say some. But who can really take a census of tribes which drift about between Turkey, Iraq, Persia and Syria? Who can say for sure how many Kurds there are who have decided to stop roaming and settle down in mud-hut villages—which are evacuated whenever the landowner decides not to go on cultivating his land, or whenever something which looks to the Kurds like Authority tries to count heads?

The doctor first tackled the problem of the non-nomadic clans; his team, which consists of an entomologist (a man who spies upon the secret life of mosquitoes), a sanitary inspector (who was responsible for the spraying, in 1955, of twenty-five tons of DDT), and eight other colleagues, established the campaign's first bridgehead by covering an area which contained five thousand villages and 245,000 miles of tracks and goat-paths.

The basic strategy of the struggle against malaria is simple: because it is established that



## Forbidden to wear blue

In the territory covered by Dr. Malaria lives a strange religious sect of people who are inaccessible to most foreigners. They are called Yezidis, number about 70,000, and are led by the tribal chief, Sheik Thassyn (shown here in conversation with Dr. Malaria). The Yezidis wear bright colours, such as red which they incorporate in their intricate turbans. Unlike most of their neighbours they consider blue as an evil colour. Their women-folk (never veiled) wear brightly coloured robes, but never blue ones.

WHO

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Dr. MALARIA  
(Continued)



WHO

**FRONTIER BRIDGE** over the Prince Ali Gorge is the traditional crossing place for the Kurds at the time of their mass-migrations between Iraq and Northern Persia. The Kurds migrate twice a year: in the Spring they cross to Persia to escape the extreme heat of the Iraqi plains (120 degrees F. in the shade); and in the Autumn they return to escape the bitter cold of the Iranian plateaux. The nomadic Kurds take shelter in mountain caves around the gorges. Those who have settled in one place live in huts of dried mud while the local sheik has the right to a stone house such as the ones in the photo. At the mouth of this gorge Dr. Malaria waits for nightfall and the coming of the nomadic tribes who are not allowed to cross until after dark—their numbers make the route impassable for all other traffic. Photo shows Kurds who have settled nearby, using the bridge during the day.

the parasite resides in the blood of the infected person, that the female mosquito of certain species feeds upon human blood (the males have a quaint preference for the pollen of flowers) and so transmits the malaria bug from a sick person to a healthy one.

Mosquitoes work at night, and they lie up for the day on the inside walls and surfaces of houses. DDT, sprayed on the mosquitoes during their daytime sleep, poisons them in the same sort of way as mosquitoes poison human beings during their sleep at night. Malaria can often be fatal in the case of very young children, but otherwise it usually clears up itself within three years, where there is no re-infection. So all efforts are directed to this target: to prevent the mosquitoes themselves from being infected during that three-year period—at the end of which, malaria itself will disappear.

For instance, if, by mischance, a traveller who has got malaria in his bloodstream turns up in a village from which the disease has previously been successfully eliminated, but to which mosquitoes have returned (for it is scarcely possible to wipe out an entire species) then there is bound to be an outbreak of fresh cases. And, this time, the infection will be spectacular in its severity, and may well lead to the deaths both of children and grown-ups.

That's why Doctor Malaria was obliged to extend his field of activity to the nomadic tribes, who carry the disease around with them in their blood and who, in the course of their wanderings may easily re-infect villages which have managed to get rid of the scourge. But the time available to him for such an operation was very limited indeed. For the Kurds wander around the uplands of Persia throughout the whole summer, and it is only in autumn that they come back down into the heat-

cracked lowlands of Iraq. So you have to catch them at the exact moment when they cross the frontier passes, and before they spill out and scatter over the whole vast plain.

This "nomad hunt" lasts nearly a fortnight. The chase takes the pursuers over 1,400 miles of rough tracks in the dust and debris of the mountains. Doctor Malaria, accompanied by his wife and daughter, is at the wheel of his jeep, for several hundreds of hours on end. A ten-man team follows along in a truck. The stake in this race with the evasive Kurds is an opportunity to take their blood tests and to spray the insides of their tents with DDT.

At the mouth of the Gorges of Prince Ali, Doctor Malaria waits for nightfall and the coming of the tribes. The latter are not allowed to cross the gorges until after dusk, because their numbers make the route impassable for all other traffic. The Oriental night comes down, a purely theatrical blue, and at a single stroke. Suddenly, there's a hubbub of whispering.

"Doctor Malaria, they're coming!"

Already you can smell, floating abroad in the night, the sour and suffocating stench of sickly dust, of greasy wool and rancid animal sweat, which is seeping into the dainty freshness of the Gorge of Prince Ali. The partridges have fallen silent. It's now that a deep rumble of noise starts to come out of the east. The nomads have reached the last bend in the road, heralded by a din like that of a mountain torrent—and by their shepherd with the bird's head and the cattle-hide coat, which makes him look rather like a huge performing nanny-goat. Behind the shepherd follow all the cattle and stock belonging to the whole tribe.

After the cattle, the women appear, walking with a long tireless



stride—or rather, first comes the most beautiful woman of each tribe, wearing her state of motherhood with the pride of an empress. On her back, trussed up in a shawl, rides a sleeping new-born baby, and her head rocks to the rhythm of her gait.

At the mouth of the Gorges of Prince Ali, the campfires of the various tribes light up under the dying night, the black tents are erected, the flocks disperse between the bushes and the rocks, the women come back from fetching water, and the men, squatting round the samovars, smoke their long pipes, with their hands lying lax on their knees.

Doctor Malaria doesn't give Sheik Salim time to turn in and recover from the night crossing of the Gorges of Prince Ali, nor from the cumulative exhaustion of the twenty days' forced march which has brought him to this place. He doesn't want to let him slip for fear that tomorrow, or even this very evening, he will vanish forever into the vast plains of Iraq. For the Sheik Salim, crouching there in his tent, surrounded by his two wives, his fifteen sons, his fifteen daughters-in-law and their children—fifty souls, in all, existing under one roof of woven goat's hair—represents a serious danger, not only to the villages of Kurdistan, but also to Iraq, and to the Middle East as a whole.

Sheik Salim and his entire family have the malaria bug in their blood. At more or less regular intervals they go down with fevers and are knocked out for a day or two with ferocious fits of shivering. In their particular case, it doesn't matter all that much, because while they themselves are shaking with fever, their flocks just go on grazing. Where it starts to become serious is when two of the four children that the wife of the Sheik's eldest son has brought into the world die before they are twelve months old, when the peasants of the nearby villages and the labourers who build the roads and the dams are away from work on the sick list for three days out of every month, their systems undermined by the mosquitoes' wicked bite.

It is true that in saying "yes" to Doctor Malaria's request, old Sheik Salim is only thinking about his own comfort, for he knows by common hearsay that Doctor Malaria is going to rid him of a most irritating annoyance—the mosquitoes that prevent him from sleeping properly at night.

But, for Doctor Malaria, Sheik Salim's "yes" is the last remaining facility that he needs in order to put in a general attack on the disease: it gives him the control of the nomads. This is the decisive step towards victory. For the first time DDT, which kills mosquitoes, fleas, lice and other verminous insects, is sprayed on to the insides of the tents; and its effect will last for months, however many times they are folded and unfolded. For the first time in their history, a doctor is looking after the wild Kurd nomads. Sheik Salim grins. Tonight, he'll be sleeping well. Without being aware of it, he, too, is one of the architects of his country's resurrection.

In the six years in Kurdistan, Doctor Malaria has seen the territory covered by his operations increase from an area the size of a large city to one the size of Corsica, and then to one the size of Switzerland (16,000 square miles). At the end of 1956, the territory liberated from malaria by him covered an area the same as those of Belgium, the Sarre and Switzerland combined (about 30,000 square miles). In 1960, when his anti-malaria campaign will have been completed, it is to a country larger than France, populated by a mere five million inhabitants, that he will have dedicated his vitality.



### Making light of 70 lb. loads

Kurd women are used to doing the heavier manual jobs. Water-duty means carrying filled goat-skin bags weighing about 70 lbs. for several miles. This water is often extremely dangerous because of the serious diseases—typhoid, amoebic dysentery and cholera—which it can transmit.

WHO



© Pierre-André Pittet

## Using drugs & spray-guns in a fight against time

**M**ALARIA must be wiped from the face of the earth! When the World Health Assembly took this decision in 1955, it was no longer a pious intention but an imperative necessity. Within a few years, mosquitoes, defying all insecticide, would multiply all over the world. Malaria would again be out of control; eradication was the only answer. With modern drugs and methods that has become possible. Malaria can be attacked in two ways: by destroying the mosquitoes which transmit it, and by fighting the parasites in the blood of its victims. Malaria cases can thus be reduced to numbers which can be individually treated. Thus when resistant mosquitoes emerge in force there should be no infection to transmit.

In the world wide strategy against malaria, Africa is a major battle-ground. The disease is probably more common there than in any other continent, but an adult African appears to have a remarkable degree of immunity. When malaria control was accepted by the WHO Conference at Kampala in 1950 it was recognized that in spite of such natural immunity in the adults, large numbers of children were always dying of malaria. It was therefore necessary to prosecute the campaign most vigorously indeed. In Yaoundé, the capital of the Cameroon, there is a map spattered with multi-coloured stars. Each represents a village or a hamlet that must be sprayed with insecticides. Among the white-robed nomads, the naked animistic bush tribes and the village tillers, the age-old scourge of malaria was accepted with fatalism. Today the hopelessness has gone. The tribes have become the doctors' willing allies.

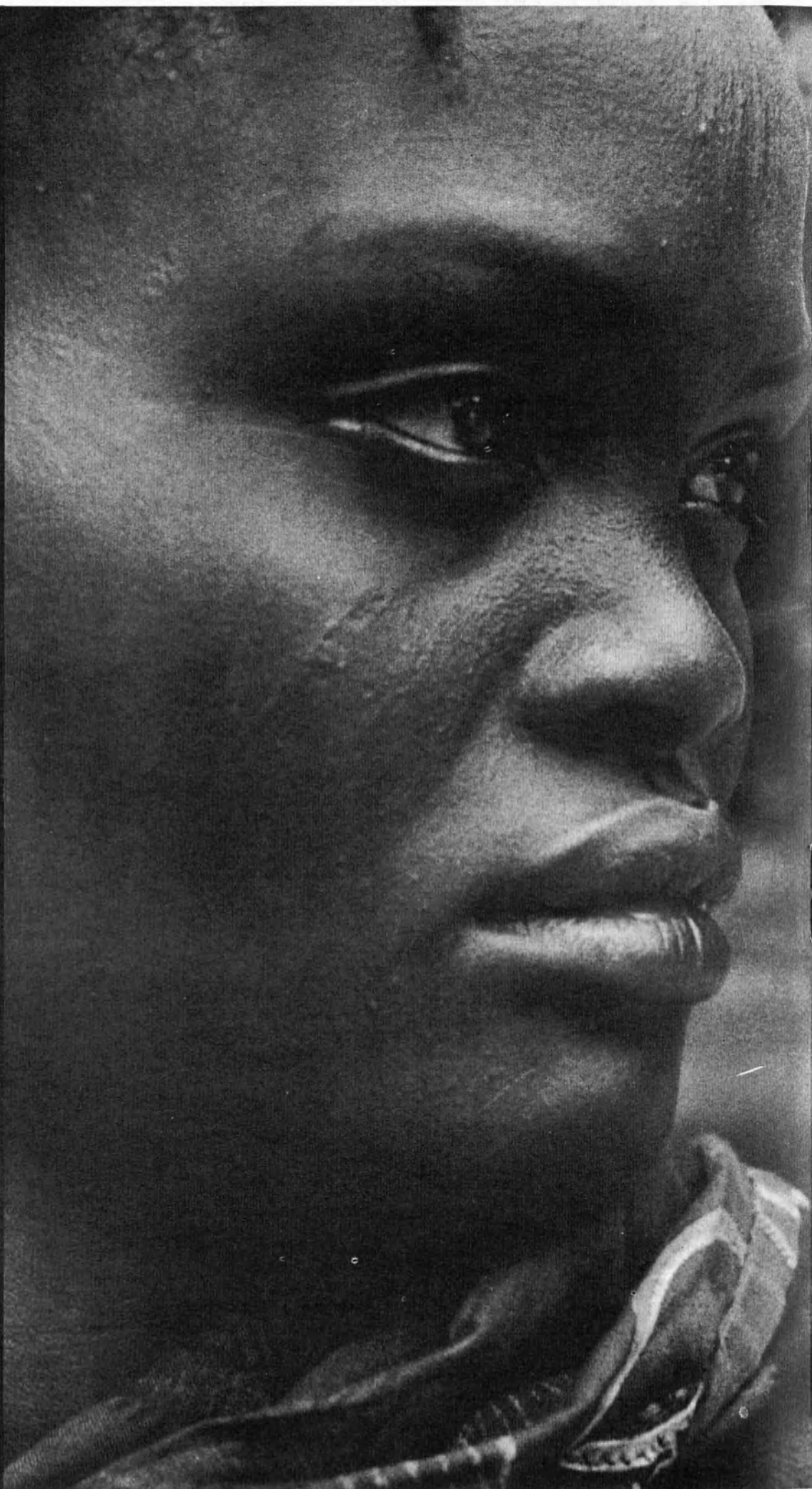
In Mexico war has been declared. But this is a war to save lives, not to sacrifice them. It calls for thoroughness of military organization in planning and logistics. Mexico has decided to eradicate malaria, and to deliver its 30,000,000 citizens from the disease which has crippled empires and destroyed civilizations. High-ranking military officers direct the campaign from an operational headquarters, from which they deploy their spray-teams as though they were combat troops. "Supreme Headquarters" is WHO's Regional Office, the Pan American Sanitary Bureau, which sees Mexico as a sector of the wider battlefield of all Latin America. The U.N. Children's Fund has provided equipment. There are motorised columns and the "Malarial Cavalry" with mounted spraymen and packhorses to climb the rough paths into the High Sierras. Khaki-clad men, in paratroop boots and helmets, boast the badges and flags of "CNEP" (National Commission for Eradication).

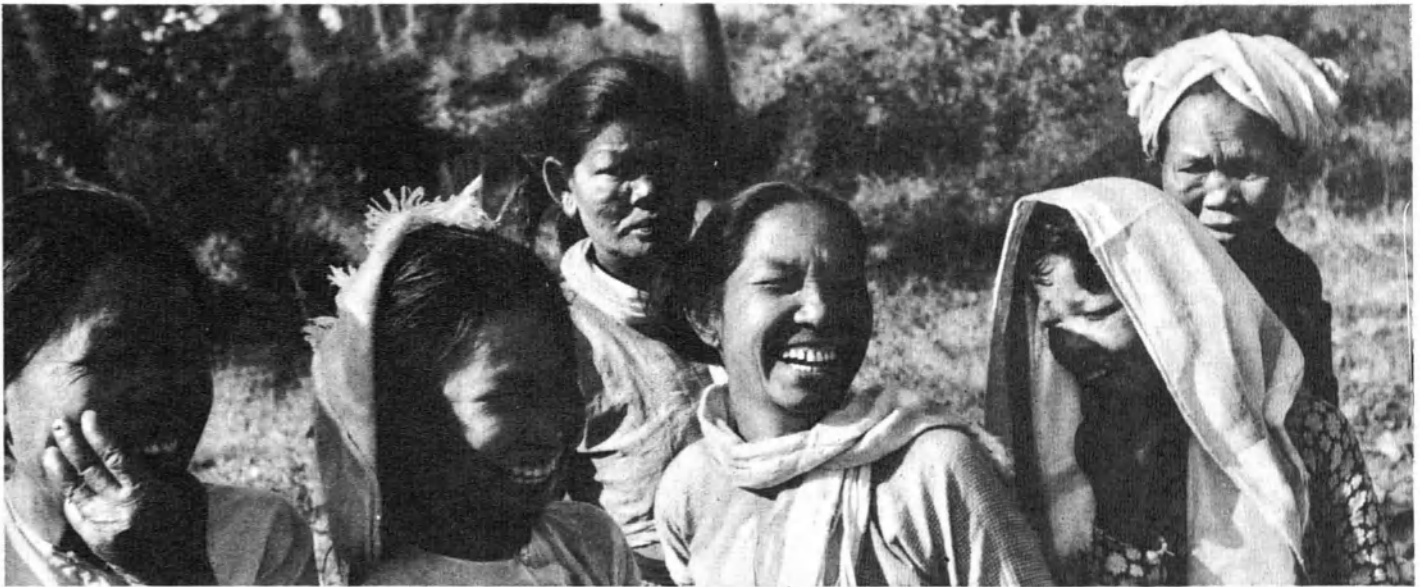
When the mosquito gorges itself with blood it can only fly so far before it has to "touch down"—usually on the walls or hangings of the room or tent where it has bitten someone. One of the most important aspects of any anti-malarial campaign therefore is the spraying of insecticides on these surfaces so that mosquitoes landing on them will die before they can transmit malaria. The killing effect of the insecticides can last for several months, but respraying must be carried out for several years—the time needed to treat and cure people with modern anti-malarial drugs.

# THE NEW FACE OF LEPROSY

Adama, the young African woman (right) has just learned that she has leprosy. Her situation is tragic, but not hopeless. Medical science now has new drugs to arrest and in some cases to cure leprosy. For centuries this has been hated and feared as the most hideous of man's afflictions and its victims called "unclean". But today more and more are being treated in colonies like the one at Schwebo, Burma (opposite page) where there is a community life and, after the day's work, singing, dancing—and plenty of laughter.

Photos © by Pierre-André Pittet and Ernest Scheidegger





ONE wet, warm day in July 1950, an eight-year old little girl named Ma Boka Sone was brought to the Mission Institution in Kemmendine, a suburb of Rangoon. It seemed unlikely that she would live very long, for she was in an advanced stage of leprosy. But within three years little Ma Boka Sone had made a remarkable recovery—thanks to treatment with sulphone drugs. By 1955, she was entirely free of symptoms and without deformity. Two years later, she was again living happily with her family.

Maung Bone, a youth of some 20 years, is another example. He went to the Htaukkyan sanatorium near Rangoon in 1953. Apart from other symptoms his face was a mass of unsightly "bulbous" tumours. He, too, has hopes of rejoining his family this year. And yet a third case, Tun Myint, still receiving treatment at the Kemmendine Mission, is another Burmese child who is being saved from a life of pain, unhappiness and ostracism by sulphone treatment.

Burma is typical of many countries, especially in the Far East, that have seized eagerly upon the new

techniques made available by the advances of medical science for the relief of leprosy victims. In 1952, with the help of the World Health Organisation, Burma launched a country-wide anti-leprosy campaign using mass sulphone treatment. Not only had medical science provided a new treatment to arrest and, in some cases, cure leprosy but it was encouraging an entirely new outlook toward the leprosy sufferer: the concept that leprosy is no more contagious than, for instance, tuberculosis and is, therefore, a disease for which treatment should be sought in the normal way.

To encourage such thinking was progressive, but to translate it into action was another matter. Down the centuries, leprosy has been feared and hated as the most hideous of all man's afflictions and the "leper" has been ruthlessly cast out from the society of his fellow men. Thus the leprosy sufferer has, from necessity, sought to conceal his disease, considering it a disgrace. When the fatal marks could be hidden no longer, the victim

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# No longer a disease apart

was either driven out or allowed to leave "voluntarily", to live alone, hidden from view, or to join the bands of wild and homeless beggars roaming the countryside and cities.

When the campaign first started, Rangoon alone had some 6,000 cases on record and preliminary estimates put the total number of leprosy sufferers in Burma at around 100,000. Today, as more and more people come forward for treatment, this estimate has been revised to nearer 200,000 cases. This means that the prevalence rate of leprosy in Burma (over ten cases of leprosy per thousand population) is twice that in India or Thailand and is, therefore, the highest among the larger countries of S.E. Asia.



**T**HE campaign was based on the new theory that only a small proportion of leprosy patients represent a danger of contagion for their families or for the community. The great majority can safely be given "ambulatory" treatment at newly-established outdoor clinics while continuing their normal occupations and living at home. (They are taught, nevertheless, elementary precautions.) These patients are given modern sulphone treatment which not only arrests the disease but reduces infection. (This means that the reservoir of infection eventually will be reduced and the spread of the disease checked.)

The programme required five phases of implementation: training, propaganda, case-finding, mass treatment in the capital and mass treatment in the provinces. The first need was for specially trained leprosy inspectors who could travel the country "screening" and treating cases, visiting leprosy colonies and sanatoria and organising as many treatment points as possible. Some elementary training in the diagnosis and treatment of leprosy was also given to some 250 health assistants—village workers posted in areas where qualified doctors are unknown.



**T**ODAY, there are some 30 leprosy inspectors at work in Burma. During the coming year, it is hoped to increase their number to 36. The leprosy assistants and inspectors also played a large part in the propaganda programme. Wherever they travelled they talked to the people, explaining to them that "leprosy is nothing to be ashamed of and that effective treatment is available." The co-operation of the religious leaders of the villages contributed in no small way to the successful course of the campaign.

Training was mostly given in Rangoon, where the first clinics for ambulatory treatment were opened.

To emphasise that leprosy is just a disease like any other, the site chosen for the main centre was next to an out patients' clinic at Rangoon General Hospital. The Prime Minister, His Excellency U Nu, who took a keen interest in the launching of the campaign, personally recommended this central situation. To avoid the stigma that superstition had attached to the words "leper" and "leprosy," it was called the "Special Skin Clinic." Auxiliary clinics were opened in the city's outskirts and an existing clinic connected with one of the old-style leprosy asylums was brought into line with the new programme. By 1954, 24,000 people were receiving am-



WHO photo by Ernst Scheidegger

**SPECIAL COLONIES** for temporary isolation of leprosy sufferers have been opened in Burma where so far 200,000 cases have been reported—a prevalence rate which is the highest in South East Asia. Above, drugs are distributed to patients at the Schwebo colony.

bulatory treatment and some 3,000 patients living in Rangoon were attending the clinic regularly.

For those suffering from the disease in its dangerously contagious stage, special colonies and sanatoria for temporary isolation are still necessary. But gone is the "Abandon-hope-all-ye-that-enter-here" atmosphere of the old leprosy asylums. The Schwebo colony is typical of those in rural areas. Patients are encouraged to do productive work and to live a community life with, in most cases, the knowledge that they will return to normal life as useful members of the community when the period of contagion is over. Near Rangoon, at Htaukkyan, a state sanatorium has been built with accommodation for 500 advanced cases. The main buildings face a busy highroad and bear, for passers-by to see, the name: "State Sanatorium for Special Skin Diseases."

An important part of the propaganda campaign is not only to break down the deep-rooted belief that leprosy is a disease apart and that nothing can be done to arrest its course, but to encourage the public to assist patients after discharge from leprosy institutions (in the past many ex-patients, though fully cured, have been shunned by family and neighbours) and to help the dependents of patients hospitalized or unemployed on account of their sickness. In rural areas, leprosy relief associations have been formed and are widely supported.

Like all serious illnesses, leprosy still brings tragedy to many homes—mothers with the disease in its contagious stage must leave their husbands and children for what may still be a long period of treatment in a special colony or sanatorium; fathers, too, often must be separated from the families they are supporting.

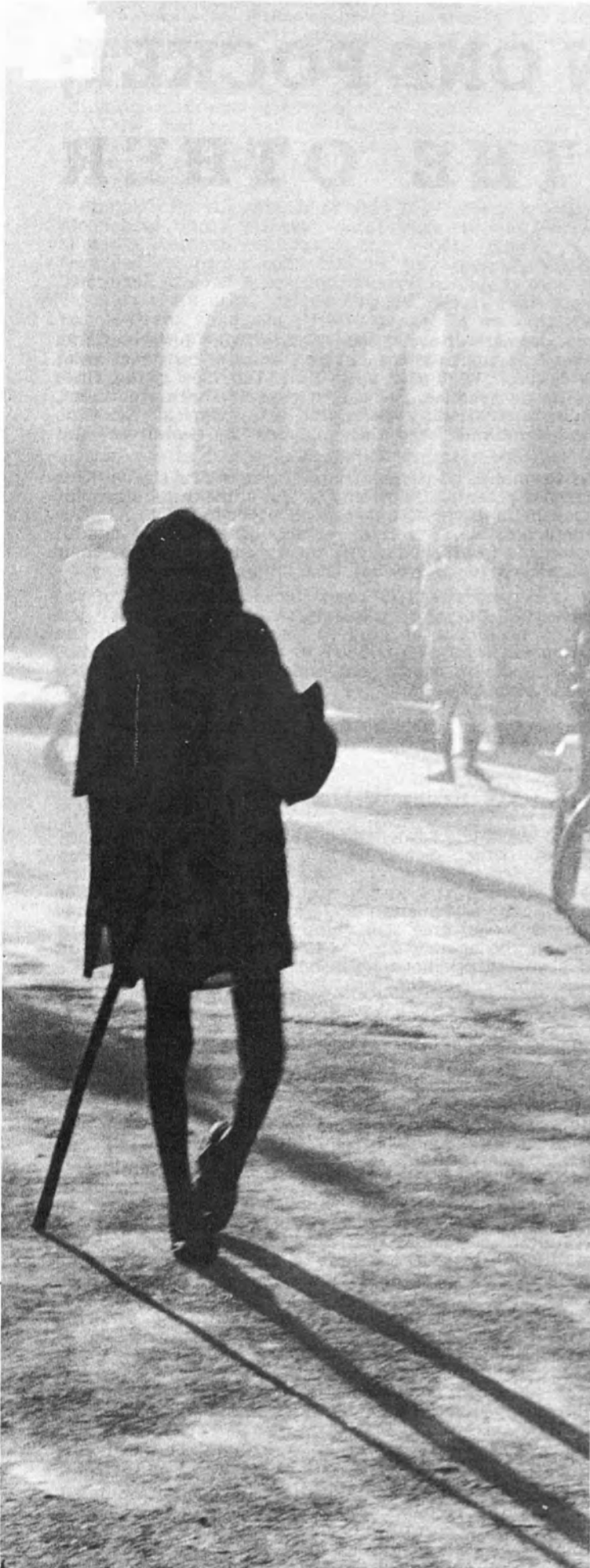
By the end of June 1957, 42,000 cases had been registered and 33,500 were receiving treatment. In 1954, the Dutch leprologist assigned by the World Health Organisation to help the Burmese Government get the programme under way in 1952, moved to another project and the Burmese Ministry of Health carried on the campaign. This year, with renewed WHO and UNICEF assistance, it is hoped that the number of cases receiving treatment can be increased to 50,000 by the end of 1959.



**A**MONG the thousands finding new hope who, in former days, would have been condemned to live as outcasts, there are innumerable human stories. Maung Tun, for instance, a former government official, could no longer stand the disgrace of being a helpless burden to his wife and children. He left home to become a beggar, until rounded up by the police and sent to a sanatorium for treatment. One of many "success" stories concerns Ma Khin Nyunt, a girl who is now in her late teens. She was turned out by her stepmother several years ago when the neighbours realized that she had leprosy.

Frightened, she carried her sleeping mat and little bundle of belongings to the "Special Skin Clinic" in Rangoon, crying only for a corner to sleep. She is now a pupil nurse in the hospital ward of the New State Sanatorium for Special Skin Diseases.

As more cases are discovered and treated and the reservoir of infection is reduced, children now growing up will be less and less liable to contract leprosy. Dr. U. Tha Saing, Assistant Director of National Health Services, who is tireless in his campaign to bring a better understanding of leprosy and easy access to treatment for people in all walks of life, looks forward with confidence to the day when this age-old scourge will be conquered once and for all.



Photos © Pierre-André Pittet

## OUT OF THE SHADOWS THEY COME FOR HELP

A shadowy figure in the early morning mist, leprosy victim (left) limps painfully out of a Bengal railway station where he has spent the night. So begins his long day of begging from passers by. Millions like him around the world have never had a chance to receive treatment with sulphone drugs which could improve their condition. Today, anti-leprosy campaigns are seeking out these sufferers, segregating the dangerously contagious cases and providing out-patient treatment for those in the early stages of the disease. From Tirumani, in the State of Madras, a remarkable system of mobile treatment now operates in 53 villages, taking care of nearly 15,000 sufferers. From an Indian Ministry of Health Centre, teams of medical workers are led and trained by a group founded by a leading Belgian leprosy specialist, Professor Franz Hemerijckx (see page 36). To aid him he has a Belgian woman doctor and three nurses—French, Belgian and Canadian. Above, the Belgian nurse, Simone Liegeois, at the bedside of a man in an advanced stage of leprosy, being cared for at the Tirumani Hospital. Nobody really knows how many leprosy sufferers there are in the world. In 1952 the estimate was "between two and seven million." A revised one last year was "ten or twelve million" because more and more victims are seeking treatment.

# A modern dilemma : TRANQUILLIZER IN ONE POCKET; 'PEP' PILL IN THE OTHER

by Ritchie Calder

On July 19, 1957, letters went off from the Mental Health Section of WHO to eminent experts in Canada, Denmark, France, India, Nigeria, Sweden, Switzerland, the United Kingdom and the United States, inviting them to meet in Geneva to consider the use and abuse of drugs in the treatment of mental conditions.

The letter said: "The Organization realizes the problems likely to be presented, and even created, by the ever-widening use of psychotropic agents..."

"Psychotropic agents!" The "tranquillizer" in one pocket; the "pep" pill in the other. Drugs to dispel nightmares; drugs to invoke dreams; drugs to escape from reality into fantasy or from fantasy into reality. Even Alice-in-Wonderland drugs by means of which adults can shrink back into childhood.

That is the caricature of one type of Modern Man, harassed by headlines; tortured by the ticker-tape; tormented by the telephone; as "manic-depressive" as his sales-charts; wakeful when he should be asleep and drowsy when he should be awake; worrying about his blood-pressure and nursing his duodenal ulcer; driving himself like a highspeed car through dense traffic, braking or accelerating in turn, running away from himself and taking himself with him. He has 2,500 million neighbours in the wider world; he is alone in that private world—himself.

There are still other types—those whose tensions become intolerable through being chained to piece work machines, white-collar workers dogged by economic worries and "wife trouble," hungry and miserable peasants driven to take hashish for solace.

An exaggeration? But also a symbol of the anxieties and tensions and stresses which deny countless millions that "complete physical, mental and social well-being" which WHO defines as health.

In fighting diseases and promoting conditions conducive to health, WHO is trying to fit the environment to man. In its mental health activities the increasing problem is, How to reconcile man and his environment?

## Revolution in psychiatric treatment

THE decade in which WHO has "grown-up" has seen the development of drugs which have revolutionized psychiatric treatment, until some authorities make bold to claim that the practice, once routine, of sending disturbed patients directly to a mental hospital is "against good medical practice." Instead, with drugs as the first means of attack against acute psychosis, patients could be cared for at home or, if home conditions were unsuitable, at general hospitals, even on an out-patient basis.

In the United States where the care of mental patients costs \$1,000,000,000 a year, there was in 1956 a reduction, for the first time in 184 years of U.S. mental institutions, in the total number of hospitalized mental cases. Instead of the predictable 12,000 increase, there

was a decrease of over 8,000. Nearly 20,000 fewer patients meant a saving in treatment and hospital construction of \$200,000,000. With the advent of the new drugs into psychiatric practice, the use of electric shock treatment, insulin coma therapy, packs and tubs, physical restraints could sometimes even be replaced by sedatives and tranquillizers.

In the hands of psychiatrists, the new drugs have thus beneficial potentials, not only in the clinical management of psychotic patients but also in other respects. It has become possible to relate certain drug-induced mental phenomena to psychoanalytic theory and to examine their implications for individual and group psychotherapy.

It is also necessary to know the mode of action of the drugs—the "psychophysiological correlates," as the experts would call it—and to classify them. With the growing experience in the use of the drugs, an appraisal of the effects on the patient under treatment and of the general atmosphere and future functioning of the mental hospitals should be made. Other questions are how far such drugs can safely be used in general practice and, most important, whether "self-medication" is permissible.

## Fantasy drugs of the priest-physicians

SUCH problems came under review by the WHO study group which met in Geneva in November 1957. But, included in the group, were those who could contribute something over and beyond the pharmacological, or clinical, or psychoanalytical approach, because they belonged to cultures still "unpressurized." One of the items on the agenda was: "Differences in the effects of, and need for, psychotropic drugs in different cultures."

In a way, the contribution of those experts is a kind of reverse "lease-lend." Advanced pharmacology, in the shrunken world of modern communications, will almost certainly be reflected in the new medical practices of older cultures, but experience is usually a good substitute for experiment and these tranquillizing and hallucinatory drugs have, apart from modern synthesis, a tradition which goes back to time immemorial. In the history, and prehistory, of ancient cultures they played a part.

Rauwolfia, the natural basis of synthetic "tranquillizers" such as reserpine, rescinnamine and deserpidine, is a plant from the foothills of the Himalayas which figured in Aryan-Dravidian medicine and the ancient *Ayurveda* of the Indian sub-continent. Medical historians are just beginning to learn the extent of mushroom-lore and its relationship to the hallucination-producing drugs used by the priest-physicians in older civilizations. Moreover cultural "conditioning" can produce strangely differing psychiatric reactions to such drugs and, as in so much of the experience of WHO in other fields, may indicate the hazards of transplanted practices. These are questions which give wise men cause to reflect and pose the problems which can only be resolved by shared knowledge on a world scale.

Apart from the advances made in clinical treatment of mental illness in the past ten years the attitude towards the mentally sick and the "misfits" has changed. Gradually the recognition, which it is WHO's policy to encourage, has grown that mental illness is something as matter-of-fact as physical illness and not something unnatural or supernatural which must be whispered about in shame or treated in secret. There is the realization that the demands of society can be over-exacting

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*This article is taken from "Ten Steps Forward", a book describing the battle for world health between 1948 and 1958, written by the British science writer, Ritchie Calder, and published by WHO's Division of Publication Information, Geneva (Price: \$0.50 ; Sw. fr. 1.50 ; 2s6d). The texts published on pages 26 and 28 are also taken from the Ritchie Calder book, courtesy of WHO.*

for certain individuals, who are just as much social-casualties as the traffic-cripples.

More and more, WHO has been emphasizing the social, as well as the medical, approach to mental health and encouraging the examination of causes rooted in the social structure. WHO studies of the "deprived child," who becomes the social misfit, have stimulated new thinking and new attitudes. The clinical psychiatrist sees the end results; the social-psychologist sees the family, the group, and the social relationships which produce these results. Mental health predicates prevention, not cure.

Similarly in the studies of, and the campaign against, alcoholism WHO's attitude is that the chronic alcoholic is not a drunken reprobate but a sick person, to be regarded sympathetically and to be medically treated. The drink of good-fellowship, when it is socially sanctioned, may relax other people but for him it becomes the escape-route from his private jungle of emotions and frustrations and psychological malaise, and some who have reached this stage become chronic alcoholics. Such an attitude towards the alcoholic does not condone excess nor encourage drunkenness, but it calls for a rational approach to a growing problem—the increase of chronic alcoholism as a symptom of the stress-diseases of today.

The growing incidence of mental illness in the advanced countries is a public health problem of the first magnitude, but WHO with its world-wide responsibilities to all peoples and to governments has to anticipate the extension of

the problem, as changing conditions and the spread of technology bring new stresses to bear on peoples whose cultural patterns are being drastically modified. Industrialization, automation, atomic energy and increased productivity, which can bring prosperity and material well-being to many countries, have their psychological hazards which WHO is seeking to examine. Even the lengthening of the span of life, the fruit of medical progress, brings its problems. WHO is directing attention to the mental health aspects of the care of the old.

Thus, in its tenth decade, the World Health Organization is opening windows and broadening the horizons on problems which themselves are opportunities and which, only a few years ago, would not have been popularly regarded as its function. But they have been since its inception because, by definition and by charter, it is a *health* organization and health is not just a question for doctors. It is bound up with the whole social process and with each individual who is involved in that process.

No international agency, no government and no society can provide health but only the opportunities for the person to enjoy it.

Just as modern medicine accepts the fact that body reacts on mind and mind on body, that mental and emotional stresses produce organic disorders and organic disorders produce mental and emotional stresses, so the concept of world health recognizes the reciprocity of the individual and his environment and the ideal of The Whole Man in the Whole World.

## THE INCREASE IN MENTAL ILLNESS: RESULT OF FASTER LIVING

**T**HE problem of mental illness is one which affects particularly the economically well-developed countries. It has been estimated that in these countries there is an insanity rate of something like 20 people per thousand. Yet in most countries of Europe the number of mental hospital beds ranges only from one to four per thousand of the population.

In the better-off countries, moreover, there is also a rate of neurosis—defined at the level of partially-disabling illness—of about 10 per cent.

During World War II (to August 1, 1945) 18 per cent of the nearly five million Selective Service Registrants in the U.S., aged from 18 to 37, had been rejected because of mental disorders. In addition, large numbers were discharged for the same reason.

These figures, of course, are not a measure of the incidence in the general population, since the stresses of military life are exceptional. However, it has recently been reported that of the men processed by the U.S. Selective Service for the Armed Forces pre-introduction examination, 20 per cent are classified as unavailable because of psychiatric disorder.

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**W**ITH regard to serious mental disease in the more developed countries, there is some progress. Until a few decades ago many of the patients occupying beds in mental hospitals remained chronically ill and in need of care for the whole of their lives. Of those who did recover many later relapsed and had to go back to hospital for a further period. However, new methods of physical treatment—insulin therapy, electro-convulsive therapy, and the use of drugs such as chlorpromazine—have led to a more optimistic outlook in the therapeutic field and to the possibility of permanent cure for many patients whose prognosis formerly offered no hope.

Growing evidence of the influence psychological factors can exercise on these patients has drawn attention to the role of unfavourable psychological states and emotional influences in the etiology of their disorders. An individual, for instance, whose personality development has been weakened in childhood may fall into a state of permanent ill-health when faced with some unaccustomed stress. There is clinical evidence that a large number of neurotic breakdowns take place in response to stresses which would in healthy people create no more than a temporary disturbance.

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**I**NTEREST has thus been aroused in the possibility of measures to mitigate stress situations that may impinge upon basically weak personalities. There seems no doubt, also, that many cases of schizophrenia and melancholia can be prevented by mental hygiene methods, particularly through the prompt handling of emotional disorders brought about by immediate environmental stresses.

In European communities many patients have physical symptoms without signs of mental disorder. Such patients can often be shown to be suffering from a prolonged emotional state which either causes, or contributes to, what is essentially a neurotic condition. The trouble can frequently be traced to unfavourable attitudes developed in early childhood within the family. The numbers concerned are so vast, however, that a wholesale attack on the problem would require an expenditure of time and money which could not readily be made available.

We can nevertheless hope to mitigate certain forms of ill-health and reduce their incidence through the protection of persons at periods of stress; and we can, through existing medical services, make earlier treatment available.



## EDE AND THE MOON FESTIVAL

A few months ago 5-year-old Ede Nwaebgo was a very unhappy little boy. For Ede, who lives with his father and mother in a bush village known as Owo, in the Udi Division of Eastern Nigeria, suffered from the painful and unsightly disease of yaws.

Few outsiders ever take the narrow dirt road that branches off the main highway from Enugu to Bamenda, winding through dense jungle and across streams straddled only by rough logs, to the huddle of forty-odd conical-shaped clay huts with thatched roofs that make up Owo village.

Ede's parents have a small yam field and a few chickens. Ede is their remaining child: they had previously lost four—probably through nutritional disease. When Ede fell ill with yaws the family, disheartened, took less and less interest in village life. His mother rarely went to market as she did not like leaving Ede alone. Village children rarely play together: from their earliest years they are too busy helping their parents. Chasing the busy mongrel dogs, pushing wooden carts or trailing tin cans comprise the rare childish games. Little Ede was too sick even to play at anything. He just sadly sat and watched.

He was not the only one. Many of the villagers, children and grownups, were suffering from the same disease, their bodies covered in the painful lesions. Little work was done: what was more, the monthly moon festival had not been celebrated for some time.

One day a messenger arrived and announced that a doctor would visit the village and cure the villagers of their crippling disease. The villagers were not impressed. They had never seen a doctor in their lives and nobody imagined that any great change would take place if one were to come. Five days later, Dr. Oboiha, a Nigerian working with the World Health Organization's yaws team in the Enugu area, found no crowds awaiting his arrival. Patiently he explained the purpose of his visit and of the help he could bring to the suffering people of Owo.

One or two of the more adventurous villagers volunteered for treatment. Little Ede, accompanied by his mother, was among them. Those suffering from yaws were given a shot of long-acting penicillin which clears up the disease within eight to ten days. After two days, when the lesions of the first patients treated had started healing, the number of villagers presenting

themselves for treatment increased. Eight days later, when Ede and his little friend Igwe were shown to the assembled villagers—their skins clear but for a few small scars—everybody in Owo queued for examination. Dr. Oboiha had won. Every yaws case in the village was treated.

The next moon feast was celebrated with gay abandon. But as it had always been a tradition among the villagers—long before the village was stricken by yaws—to paint their bodies with red and black spots for each moon festival, young Ede was painted with nut juice by his mother. When the make-up job was finished, little Ede was just as spotty as he had been before the yaws team arrived—the only difference being that these spots did not hurt.

Yaws is widespread throughout Nigeria—in some areas the prevalence is as high as 20%. But, like little Ede, thousands of Nigerians have been freed from the disease by penicillin injections. In 1954 a mass campaign began with the aid of WHO and UNICEF, and by the middle of 1955, 1,107,000 people had been examined and 237,000 active cases as well as many contacts and latent cases had been treated.



# 'THE NIGHTMARE OF THE TROPICS'

**Y**aws begins as a small insignificant sore on the foot or leg, a sore which grows, and as the disease develops fresh sores break out anew elsewhere. The disease attacks the bones and eats away the tissues like termites, undermining the strongest physiques. The face may lose all human aspect and become nothing more than a nightmarish mask worthy of the legends of the Middle Ages.

These are the effects of yaws (also known as framboesia) which ravages the tropical regions of Africa, America, Oceania and Asia.

The contagious disease of yaws has for a long time been confused with syphilis. Both diseases are caused by identical micro-organisms, or treponemes, i.e. *T. pallidum* in the case of syphilis and *T. pertenue* in that of yaws. Bejel, another treponemal disease, is prevalent above all in the Eastern Mediterranean area. The climate most favourable to yaws is a humid tropical one, where intense heat alternating with heavy rain, falls on a soil which is not very porous and gives rise to a luxuriant vegetation. It has been found that yaws tends to decrease during the dry season and to increase during the wet season. Primarily a rural disease, yaws is transmitted by human contact as well as by contact with dirty linen or clothing and other articles of everyday use. No decision has yet been reached as to whether insects act as vectors of the disease (flies, mosquitoes, etc.). Undernourished individuals living in overpopulated areas are much more receptive than others.

It is extremely difficult to discover, before the characteristic lesions appear, whether a patient is suffering from syphilis or from yaws. Yaws itself is not hereditary, but a child born healthy to infected parents will in turn be infected by contact with them during infancy.

One of the main obstacles confronting doctors combating the disease is superstition. In fact, in some regions there is a popular belief that the men will not be strong and able to face life successfully unless they have contracted some very spectacular form of yaws.

Not only do those infected adopt completely inadequate measures to check the disease (e.g. by swallowing a decoction made from snakes with a skin showing patterns similar to those left by yaws on the human skin), but children may even be deliberately infected from earliest youth, with the possible resultant mutilation of their bodies by the age of 12.

Doctors often need much ingenuity to coax patients to come for treatment. For example, a Who physician has related how he lured sufferers in Haiti by giving them a cake of soap and then, at the end of the consultation, a red ticket with the promise of a second piece of soap some days later on presentation of the ticket... and a second treatment. Unfortunately, the doctor did not foresee that the ticket might be given away or... sold. This is what happened. The patients who attended the second time were not always those whom he had treated on the first occasion.

It should be noted that the majority of patients prefer to undergo injections, sometimes painful ones, rather than swallow other remedies, such as pills, etc., perhaps in accordance with the theory that "something that doesn't hurt cannot do any good". Nowadays the disastrous consequences of yaws can be prevented: a single shot of penicillin will cure it in about nine cases out of ten; a second shot will usually cure the tenth. The effects are rapid: the worst skin lesions clear up in about ten days, and the average cost of each cure, including examinations and other expenses, is about \$1 per person.

Mass campaigns to treat yaws with penicillin are being carried out by national health authorities in many parts of the world with the aid of the World Health Organization. To treat the 20 million or so Africans who are affected by it will take an estimated ten years, but already remarkable results have been achieved. The job of curing the 15 million cases in Asia was begun eight years ago and is already half accomplished. Campaigns are also being waged in the Pacific. Thus are men stamping out the disease that has been called "The Nightmare of the Tropics".



WHO photos by Eric Schwab

Photos show: Opposite page, "three faces of Ede"—before he had received a shot of penicillin; five days later and, finally, after ten days, when his sores had almost disappeared and he was able to smile again. His happiness had cost about \$1. Right, on the day of the Moon Festival, Ede's mother paints spots on his skin with nut juice. Above, after they have seen effects of penicillin, villagers of Owo come for examination and treatment.

# SCOTLAND YARD OF EPIDEMICS

## Broadcasts the daily health bulletin of the world

ON February 18, 1948 the following signal went out from Geneva to the health authorities of the world: "Egypt now declares whole country free from cholera—Epidnations."

The doctors in the public health administrations could now relax, after four anxious months; to them, it was as though a major war had been averted. Once again, the "West Wall" in the defences against Asian cholera had held, as it had done for thirty years but not without heavy casualties. The Egyptian death-roll had been 20,472.

The outbreak began at El Korein, on September 22, 1947. The merchants had gathered from all the Egyptian provinces for the annual date fair at this centre on the eastern edge of the Nile Delta, close to the Sweet Water Canal, which provides the drinking water for the cities and villages of Suez. Besides the traders, there were 6,000 workmen engaged on construction work nearby.

Three labourers contracted cholera, from a source never officially established; but it must have come from one of the areas of the East where cholera persists. The sick men carried it into the crowded billets of the workers and, before quarantine measures could be established, the transients, the hired labour and the merchants, panicked. So great is the dread of cholera that, as throughout history, they fled from El Korein.

Instead of escaping the disease, they took it with them. Within three days, cases had appeared in Cairo. Within four, it had spread to Ismailia. By October, the whole of Egypt was involved and 33,000 cases of cholera had been discovered.

### Vaccine flowed to Cairo

WITHIN a few hours of cholera being recognised in El Korein, *Epidnations* had warned the world that cholera was on the march. *Epidnations* is a code name which, since 1923, has been impressively familiar to public health administrators in all countries. Throughout the entire existence of the League of Nations; throughout the war, with the concurrence of the belligerents; during the transfer from the League, through the United Nations, to the World Health Organization to this day, *Epidnations* has been the password on the picket-lines of disease. It stands for the Section of International Quarantine.

When cholera broke loose in Egypt, the World Health Organization did not yet officially exist; it was still an "Interim Commission". That did not hamper action in an emergency of this seriousness. In those hectic first hours, telegrams went out from Geneva to vaccine laboratories in several countries, including the Pasteur Institute in Paris, the Lister Institute in London and the Haffkine Institute in Bombay, asking how much cholera vaccine they had available; how much they could produce

within a week and how quickly they could get it to Cairo. The response was immediate and ungrudging.

This was followed by the "Cholera Air-lift" which made medical history. In America, stocks of vaccine were rushed to the airport with motor-cycle siren escorts to clear the traffic. The Russians dispatched supplies. From India, where cholera is still persistent, succour was sent to the Egyptians. Crates converged on Cairo, until there were 20,000,000 doses—enough to vaccinate every man, woman and child in Egypt. A third of the supplies were gifts.

### The ship nobody wanted

WITHIN the first fortnight, a group of experts assembled in Geneva. They included authorities on the disease and on quarantine methods, and the doctor who had diagnosed the first cases. They re-examined cholera quarantine regulations which had been made 20 years before and found them adequate for the emergency. One country which had prohibited entry to anyone coming from Egypt had to be reminded, sharply, that this exceeded the International Sanitary Conventions and was putting the clock back a hundred years.

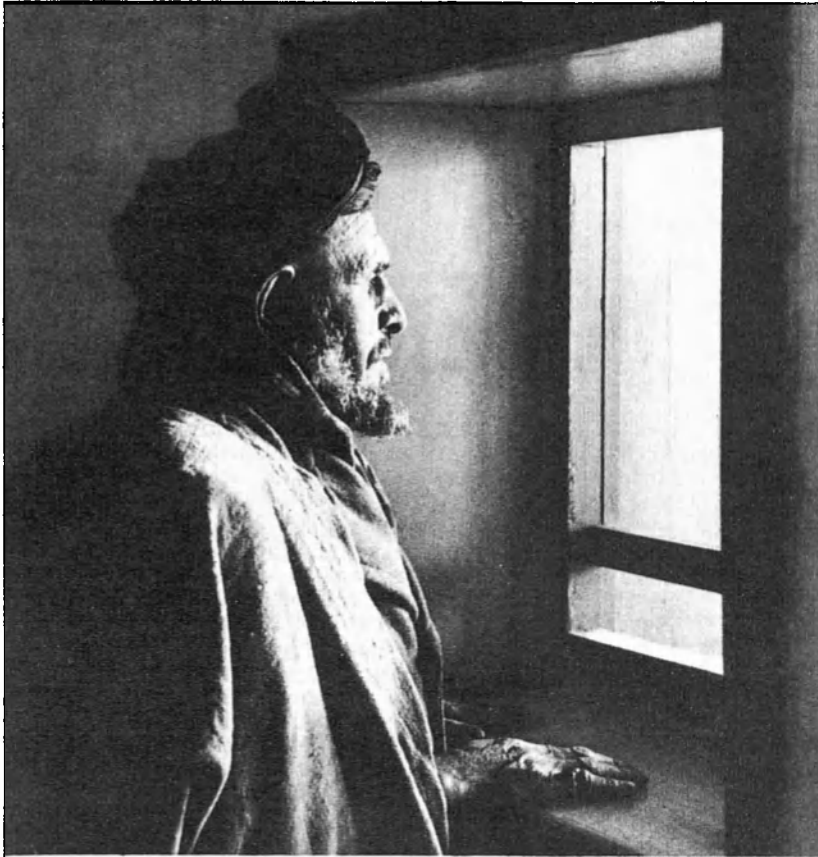
At that time (in 1848) cases of cholera were discovered on board the *Matteo Bruzzo*, out of Genoa with 200 passengers. Country after country on both sides of the Atlantic refused to allow the ship to dock or the passengers to land. For four months they were kept at sea before being disembarked at Leghorn, 78 miles from where they started. This and many other incidents, in which the dread of cholera and other pestilential diseases had frightened countries into excessive quarantine measures, led the mercantile nations of the world into international co-operation. Cholera, it has been said of that period, was the founder of the public health services, and this is indeed true of many countries.

When, with material help from outside and prodigious efforts by its own doctors, Egypt quenched the epidemic of cholera, the disease had once again served as a salutary reminder. In September, when it broke out, only 19 countries had ratified their membership of the World Health Organization, which could not formally exist until 26 states had done so. Before the "All Clear" was sounded, ten more had ratified and all was set for the First World Health Assembly to meet on June 24, 1948.

For all practical purposes, and despite this dilatoriness of governments, however, Who had existed since 1946. The United Nations had inherited the functions of the League of Nations, including *Epidnations*, the epidemiological control. An international Health Conference had been held and the need for Who had been wholeheartedly endorsed. An Interim Com-

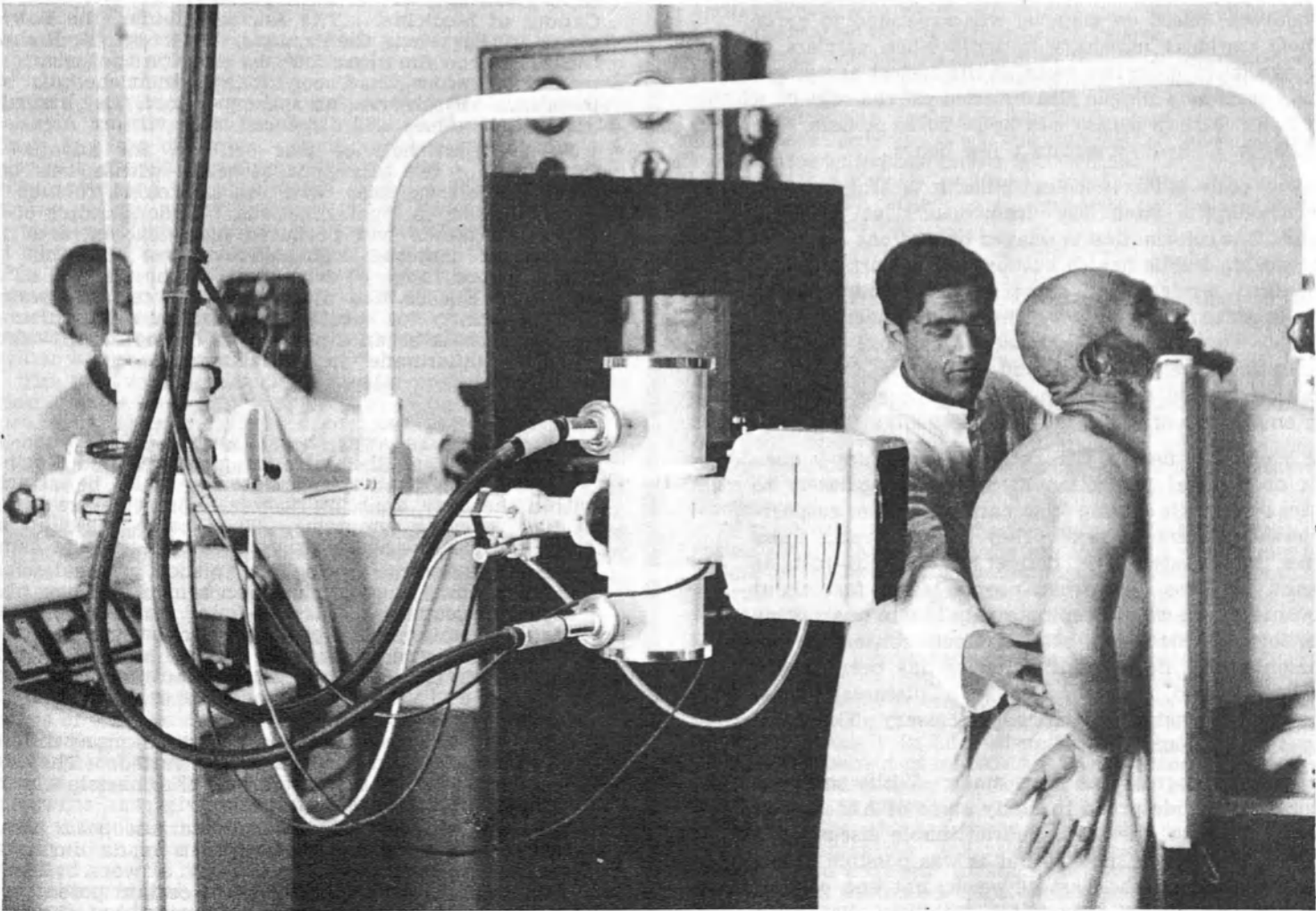
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page 28

## PATIENT FROM A COUNTRY OF JAGGED PEAKS



A Moslem priest, or Mullah, was troubled by a cough and fevers, and decided to travel the 200 miles from his home in the solitude of the Hindu Kush mountains, a gigantic "cactus hedge" of jagged peaks, in northern Afghanistan, to the Government's Tuberculosis Control and Training Centre in the capital, Kabul, for advice and treatment. This centre, which also serves to train health personnel, was started in 1953 with the aid of WHO. Left, arriving at the centre, the Mullah waits for his examination card to be filled in. Below, a miniature X-ray is taken of his lungs. It has been estimated that there are some five million active cases of tuberculosis in Asia. The disease is treacherous, highly communicable and hard to cure. Even so, the outlook is today more promising, and if it does not worsen, medical authorities believe that this disease can be brought far down the list of important enemies within the next 25 years.

WHO photos by Marc Riboud



## SCOTLAND YARD OF EPIDEMICS

(Continued)

mission had been set up and with money advanced by the United Nations and funds from UNRRA (United Nations Relief and Rehabilitation Administration), it had begun operations, manning the defence lines of health in a world ravaged by war and menaced by pestilences which are the campfollowers of wars.

*Epidnations*, which had acted so swiftly and thoroughly when cholera appeared in Egypt, was itself the product of the diseases which ran amok after the first World War. Then, in Eastern Europe, there were at least twelve and a half million cases of typhus, spread by the lice infesting broken armies and wandering refugees. To prevent its spread westwards a "Cordon Sanitaire"—a health frontier—was established from the Baltic to the Black Sea. To assist the control, epidemiological centres were established by the League of Nations in Moscow and Warsaw, in January 1922. The collection and dissemination of information by those centres were so effective that the system was extended to the whole world in 1923.

### Pestilences have no politics

SINCE then, despite political upheavals and total war, the epidemiological services have continued without interruption: pestilences have no politics and even belligerents can recognize a common enemy. In 1948, the World Health Organization improved and extended the system and speeded up the exchange of information. Its radio network, based on Geneva, was expanded to cover the whole world—a necessary measure when carriers of disease can travel with the speed of the fastest aeroplane. A typhus louse or a plague flea brushed off the rags of a beggar in an Eastern bazaar can be in Tokio or Oslo, New York, Moscow or Sydney, within a few hours.

Today, a daily epidemiological bulletin is broadcast on eight wavelengths from the transmitters at Geneva-Prangins. The information is relayed by stations throughout the world. Public health authorities, seaport and airport medical services and ships at sea, monitor those broadcasts as a fixed routine. The main concern is still with the quarantinable diseases—smallpox, cholera, typhus, plague, yellow fever and relapsing fever—but information is also given about other diseases, like the sudden emergence of Asian influenza in 1957.

With such information, the authorities can apply quarantine or medical inspection measures immediately to any ships or aircraft coming from danger areas or suspected of having cases on board. They can also relax those measures immediately the danger has passed—just as important, in these days when people travel fast about their business, and when keeping a ship idle in quarantine costs a fortune each day. By common consent of all governments, this network of defences has been spread around the world. As long as such diseases persist anywhere such constant vigilance is necessary. The world is not yet rid of them.

Nevertheless progress has been made. While smallpox infection is still widespread in many areas of Africa, Asia and South America, the other quarantinable diseases are entrenched in "plague spots". But it was possible to say in 1958 that, during the past 10 years, not one case of quarantinable diseases—except for smallpox—has been brought into a country from abroad by ship or plane, and given rise to secondary cases.

R. C.

# THE LABYRINTH OF MODERN DRUGS

On May 19, 1950, the Third World Health Assembly formally approved the publication of the *Pharmacopoeia Internationalis*, the first volume of which was ready for the printer.

Nobody paid much attention. It will not be found in the headlines of the day and historians will not consult that volume to find, on page 11, *acidum acetylsalicylicum* as the cure for the political headaches of that moment. Nevertheless it was topical and it was historic.

Doctors, who knew, sensed the urgency. Medical science was advancing rapidly and pharmacologists were moving even faster than the doctors themselves. Patients, encouraged by newspaper discussion of "miracle drugs"—sulfa compounds, like sulfathiazolum; antibiotics, like penicillin; and hormones, like cortisone—were expecting "White Magic" from the practitioners.

Here was a drastic new departure. Every culture, throughout history and from prehistory, has had its traditional drugs. Many countries have had their *pharmacopoeia*, assemblages and assays of drugs. Four thousand years ago, the Chinese produced the *Neiching*, the Canons of Medicine. The Ancient Hindus, the Babylonians, the Egyptians, the Persians, the Greeks, the Romans, the Arabs, the American Indians and the apothecaries of medieval Europe, had contributed their herbals and metalics. By observation and experience, they had measured their values and dispensed their virtues.

In the first half of this century, the advance in knowledge of the behaviour of germs within the body made possible vaccines, sera and antitoxins, to help the human system to repel infections. Understanding of the endocrine glands had produced biological extracts, like insulin for diabetes. The discovery of vitamins had placed a new range of substances at the disposal of the doctors. Ehrlich had discovered that certain dyestuffs had an affinity for specific organisms and his *salvarsan* against syphilis began a new era in chemotherapy—drugs could be "tailormade" in the laboratories.

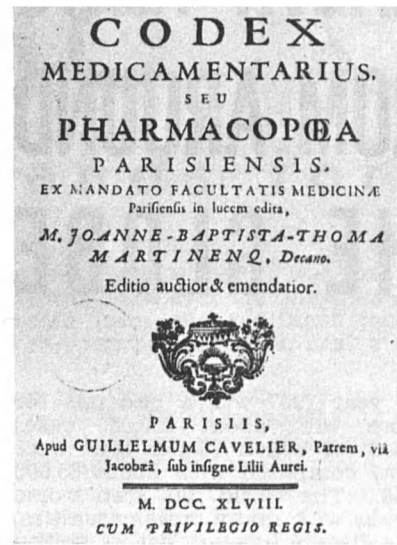
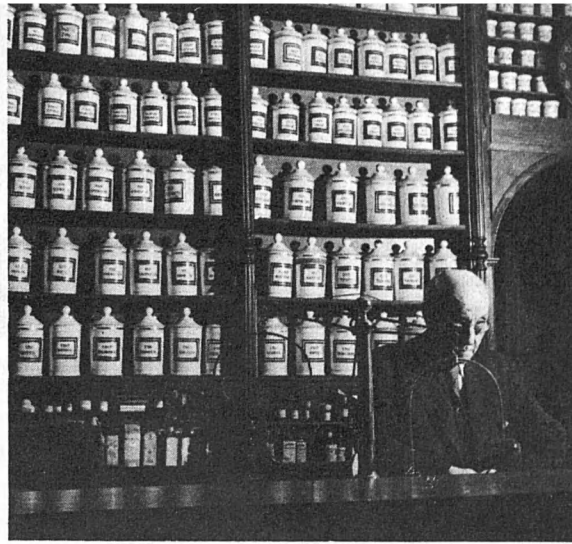
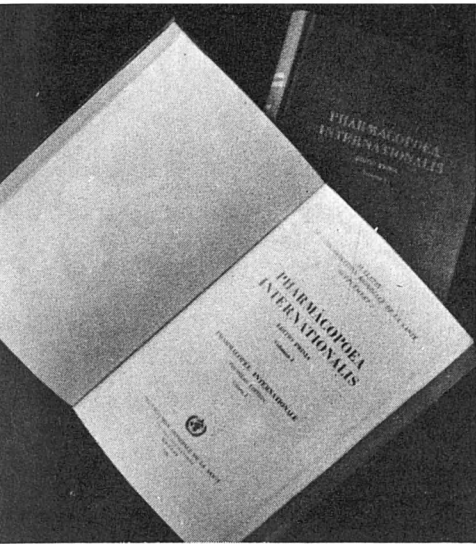


The big breakaway, began around 1935, when the discovery of the sulfa drugs underlined Ehrlich's principle that specific germs could be attacked within the body, enabling doctors to treat causes instead of just relieving symptoms. Then came penicillin and other antibiotics—again drugs to attack specific causes.

When the Second World War finished, medical science and the chemists had produced an armoury of new pharmaceutical weapons. This new-found mastery over man's invisible enemies was a gratifying achievement, but the multiplication and world-wide use of the new drugs involved hazards. They replaced traditional drugs, the production and use of which had the safeguards of long experience.

They were adopted and manufactured in many different countries, and standards and assays varied. They were placed in the hands of doctors and pharmacists who had to accept them at their face-value.

That was why an *International Pharmacopoeia* became essential. Many attempts had been made during the preceding century to produce such a work. Limited agreements had been reached about certain potent drugs and methods of assay and dispensing, but there was



WHO photos

**ROW UPON ROW** of jars, each inscribed with the Latin name of its contents, still give some chemists' shops (centre) the traditional appearance of the old apothecaries' establishments. But there is as great a difference between the skill and knowledge required by the modern druggist and that of his predecessors as there is between the *International Pharmacopoeia* recently published by the World Health Organization (photo, left—French edition cover) and the two centuries' old volume *Codex Medicamentarius seu Pharmacopoeia* (right) which came out in Paris in 1768.

nothing comprehensive. True, excellent national pharmacopoeias were available but there were variations in national specifications and, in a world of fast travel, a patient's prescription could mean many things in different countries, and drugs acceptable in one country would be rejected by another. Nomenclature varied and proprietary names added to the confusion.

★

**T**HE World Health Organization ventured into this difficult field. Apart from national susceptibilities, pharmaceuticals had grown into a vast industry and firms were naturally suspicious and sensitive about intervention which might impugn their products or restrict their freedom of action. Even in laboratory terms, the assaying, checking, counter-checking and defining of basic substances and the application of standards with respect to the safety, purity and potency of biological, pharmaceutical and similar products was a major undertaking.

What was made abundantly clear from the outset was that WHO had neither the power nor the intention to impose this pharmacopoeia. It was designed to be a basic document, the recommendations of which governments, or the national pharmacopoeia commissions, could either adopt, or reject.

The first volume included a greater proportion of traditional drugs than of new drugs; the second included more new drugs than traditional ones; and the supplement to both dealt preponderantly with innovations. Modern drugs wax and wane in medical popularity. A new discovery, or a fresh variant, will prove more effective, or safer, and will displace predecessors.

Another cause of uncertainty and confusion was the use of proprietary names, in addition to the introduction of trade names. It was soon apparent that international usage must find non-proprietary names which could have universal validity, and now the object is to provide a proposed non-proprietary name in advance. Again, this has no legal sanction. Yet the practice works smoothly through the goodwill of governments, of pharmacologists and of manufacturing concerns. The doubts and suspicions of ten years ago have long since disappeared. Over 40 leading pharmacologists in various parts of the world have placed themselves and their laboratories freely at the disposal of WHO, and the misgivings of commercial concerns have given place to full co-operation.

In the public interest, it is well that this is so. A WHO Study Group of Experts, meeting in December 1956, pointed out: "It has been estimated that several hundreds of new medicinal substances are being introduced into the *materia medica* every year. This large number of new

substances presents a certain hazard to public health, especially considering the relatively short time between the production of a new substance and its use. Twenty years ago, this interval may have been five to ten years. Today it may be as short as six months."

As a further safeguard, WHO arranged, in May 1957, for a chemical reference centre to be established in Stockholm. There, authentic chemical substances are held by the *Apotekarsocieteten* ready for distribution to governments and manufacturers for comparative assays.

That was one more addition to the WHO international reference centres, which already dealt with biological standards, blood-groups, salmonella, shigella, escherichia, poliomyelitis and influenza viruses. And these world centres are only part of the network of co-operating laboratories which has grown up. There exist six regional laboratories for polio inquiries, six stations for rabies research and 57 centres in 46 countries for the constant checks on influenza.

★

**B**y 1957, with the completion of the Supplement to the two volumes of the first edition of the *International Pharmacopoeia*, the World Health Organization had to consider a new approach to the problem of multiplying drugs. Printed volumes take time to prepare, especially when every detail has to be checked and checked again by references to forty experts in all parts of the world. As the 1956 Study Group pointed out, in certain cases, by the time of publication, the actual use of a preparation may be already diminishing or may have practically disappeared.

To meet this situation, it was proposed that the Organization should compile information sheets on new products which, on the best advice available, would provide accurate appraisals of new preparations and methods of assay for the use of doctors and pharmacists everywhere.

All this is possible only because of the earnest goodwill which experts everywhere have shown towards the Organization. It now maintains close and active collaboration with nearly 1,800 scientific institutions and laboratories, all over the world. The great majority of these work voluntarily, solely in the interests of scientific progress and for the benefit of mankind. In the same spirit, more than a thousand scientists are on call for service on the expert advisory panels.

Thus, in the first ten years of its existence, the World Health Organization has established mutual confidence among those engaged in this work and, by providing services, can command disinterested service.

R. C.

# HEALTH NEWS FROM AROUND THE GLOBE

The year 1957 was a bad one for smallpox with about 120,000 cases reported (of which 70 per cent were in Asia) compared with about 85,000 in 1956. The world has seen worse outbreaks with many more casualties, but the disease has not lost its ability to travel and to attack unsuspecting persons who are not protected by vaccination. Today smallpox persists in many areas of Africa, Asia and South America, but it is in countries outside such areas where it has become practically extinct that outbreaks are becoming more likely to occur. One reason is that because of its rarity it is not almost immediately recognized; another is that in many countries people are less protected by vaccination than at any time in the past century. Smallpox is not defeated and as long as it persists anywhere in the world, health authorities everywhere must be on the alert.

## Europe's bloodthirsty roads

The risk of death on the roads of Europe, for a given distance, is ten times that involved in travel either by train or aircraft. In 1955 the number of fatal road accidents in 14 countries of western Europe reached a total of 35,000 and well over 600,000 people were injured. Since then the number of vehicles on Europe's roads has been rising by 12% each year. Recent figures for every 100 millions of kilometres travelled by road vehicles were: 18 people killed in Western Europe, 10 in Great Britain and less than 5 in the U.S.A. Accident responsibility on the roads of Europe has been apportioned as follows: Faults of motor vehicle drivers: 20 p.c.; faults of cyclists and pedestrians: 5 p.c.; faulty vehicles 5 p.c.; faulty roads : 70 p.c.

## Air travel and health

Last year 90,000,000 people travelled by air scheduled flights throughout the world compared with 2,500,000 in 1937. During 1958 the figure is expected to reach the 100,000,000 mark. This tremendous increase in air travel may soon overtax the facilities at many international airports—and not least of all with regard to sanitary conditions. The problem was discussed recently by the Who Expert Committee on Sanitation of International Airports, at its first meeting in Geneva. International Sanitary Regulations already set up by Who deal with quarantinable diseases such as smallpox, cholera, yellow fever, etc.



WHO-INCAP

**CIRCLE = GOITRE.** Six countries of the Americas—Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua and Panama—combined, with the help of WHO and the Kellogg Foundation, to attack their nutrition problems by setting up the Institute of Nutrition of Central America and Panama. Since INCAP came into existence over eight years ago it has made possible preventative measures, on an international scale, against endemic goitre, and has attacked the problem of undernourishment by finding inexpensive means of improving local diets. Above, the circle being marked on the throat means the child has goitre. Photo was taken during a survey which revealed endemic goitre as a grave public health problem in INCAP countries. One of the ways in which it is being tackled is through the iodization of salt for all human consumption.

and such questions as safe water supplies, disposal of waste, control of insects, rats and other disease carriers.

## What do doctors die of?

The life expectancy of physicians corresponds to that of the population as a whole according to a recent study in the United States. However, there is a striking prevalence among doctors of cardio-vascular diseases, which cause the death of two doctors out of three, while the rate for the male population in general is one to three. According to the study, cancer is the second largest killer of American doctors, causing one death out of every six.

## Perils of air pollution

With industrial growth, more and more gases, vapours, fumes, dusts and other impurities are poured into the air we breathe. This increasing pollution of the atmosphere must be prevented if our health is to be safeguarded from its disastrous effects. Some cases of air pollution in Europe: Harmful effects on animal and plant life have been reported near aluminum factories in Switzerland and on plant life in Sweden through gases from shale-oil factories, iron works, phosphate factories and other works. In Germany animal losses have occurred near plants

releasing arsenic compounds into the air. A recent study of air pollution in Paris showed that motor-traffic accounts for 30-40% of the total pollution and domestic heating for about 50%. Who has set up an Expert Committee on Air Pollution which groups medical and public health specialists from Africa, America, Asia and Europe.

## Occupational hazards

The prevalence of peptic ulcers among business executives over 50 years of age was 78.43 per cent., compared with 23.56 per cent among other employees of the same age, according to a recent study in the U.S.A. In another study on 5,000 executives chosen from 30 American companies, large and small, it was found that 51.3 per cent. between the ages of 40 and 65 suffered from either hypertension, organic heart disease, overweight or such serious conditions as diabetes, prostatitis, hernia, blood deficiencies etc. Yet more than half of the executives examined had previously shown no symptoms and expressed no complaints.

## Deathtraps in the home

Accidental death is nowadays of increasing concern to public health authorities. Among children and adolescents it often ranks as the

leading cause of death, primarily because preventative medicine has succeeded in lowering the loss of life which previously occurred through infectious and parasitic diseases. Forty per cent. of fatal accidents which happen to children between one and four years of age take place in and around the home. Pills containing dangerous substances, but sugarcoated to make them palatable are often left lying around. Sometimes children chew cigarettes imitating their elders smoking, and get nicotine poisoning.

### The snail menace

One of the most difficult diseases to fight is being tackled with the help of WHO in various countries today. It is snail fever (medical term: schistosomiasis or bilharziasis) and it is estimated that 150 million people are menaced by it in Asia, Africa and Central and South America. It is caused by the presence in the human body of parasitic worms which feed on the blood. Water snails help to transmit the disease because embryos from eggs laid by the worms use them as hosts while reproducing about 200,000 larvae which attack humans by penetrating the skin. For centuries snail fever has been a scourge. Eggs have been found in Egyptian mummies dating back to 2000 B.C. Egyptian medical authorities say it is "the most serious and ruinous disease" in their country.

### 'Harmless' little house-fly.

House-flies are, far and away, the most numerous of all insects which live close to man. They have fantastic powers of reproduction—with all the dangers that this implies in the spreading of many diseases. It has been calculated that one single female house-fly laying 120 eggs on April 15, could theoretically, by September 10 have been responsible for a "family" of no fewer than 5,598,720 MILLION adult flies. Another estimation was that one pair of flies could produce in a single summer, 325,923,000 MILLION descendants. In one single fly 100,000 bacteria originating in human excrement have been found. Few realize the losses caused to the dairy industry by flies. In U.S. tests during the fly season insecticide-treated beef cattle gained an average of 50 lbs more in weight than those heavily infested by the biting horn-fly.

### Puzzle for pathologists

A puzzle has been set for pathologists in a WHO study which compares mortality from various types of cancer occurring in different countries, and shows that a malignant tumour of a kind which is particularly fatal in one country may be relatively much less so in another. It shows that by far the highest death-rate from cancer of the respiratory system in men occurs in England and Wales (45.5 per 100,000). Japan, where the death rate from this type of cancer is lowest (6 per 100,000) has the highest rate of deaths from cancer in the digestive system in men (98.2 per 100,000).

# WHO

## what it stands for

**T**HE creation of the World Health Organization in 1948 was the culmination of a long series of efforts made over the centuries to prevent the spread of disease from one continent to another and to achieve international co-operation for better health throughout the world.

After the Second World War, when the Charter of the United Nations was drawn up in San Francisco (1945), Brazil proposed that health should be included in the U.N. Charter as one of the vital factors for the stability and wellbeing essential for world peace.

The World Health Organization was set up the following year in New York, at an international conference called by the United Nations. It gradually absorbed the existing international health organizations (Office International d'Hygiène Publique, Health Organization of the League of Nations, UNRRA Health Division). The Pan-American Sanitary Bureau retains its name and individuality while acting as the WHO Regional Office for the Americas.

In April 1948 sufficient countries had ratified their membership to enable WHO to come into official existence, and in June 1948 the World Health Assembly met for the first time.



**B**y 1958, its tenth anniversary year, WHO had grown from the 26 states who were members on April 7, 1948 to 88. Ten years ago its budget, contributed by Member States, was less than \$5 million; in 1958 it is \$13,500,000.

In 1948, direct assistance to national governments in the form of international staff and field projects was a new and almost revolutionary idea. Today the World Health Organization has over 500 professors, doctors, nurses and other health personnel in the field, and in one way or another is assisting 700 health projects in 120 countries and territories.

To enable it to adapt its programme to varying and evolving needs, WHO set up six regional organizations with offices: for Africa at Brazzaville, French Equatorial Africa; for the Americas at Washington D.C.; for South East Asia at New Delhi, India; for Europe at Copenhagen, Denmark; for the Eastern Mediterranean at Alexandria, Egypt; and for the Western Pacific at Manila, Philippines. These regional offices maintain close co-operation with national health services "to assist public health administrations everywhere to take the next feasible step in their development."



**I**n Geneva, a true nerve centre of international health work, regional programmes are co-ordinated in a single programme of WHO activities with accompanying budget, which are studied, discussed and approved by the annual World Health Assembly.

Types of assistance which WHO has given during its first ten years include: strengthening of national health services; establishing and maintaining epidemiological and statistical services; controlling epidemic and endemic diseases; maternal and child health services; promotion of mental health; improvement of sanitation and preventative and curative medical services.

WHO Member States benefit from its technical services (epidemiological intelligence, international quarantine, statistical, standardization of therapeutic substances, technical publications) and from its training programmes and fellowship awards (6,396 fellowships given to health personnel from 149 countries).

The day-to-day work of WHO is carried out by a Secretariat of about 850 international officials (54 different nationalities) either at headquarters in Geneva, at Regional Offices or with field projects. First Director-General of the WHO was Dr. Brock Chisholm (Canada); present Director-General is Dr. M.G. Candau (Brazil).

# THE WANDERING DOCTOR OF DEVIL'S MOUNTAIN



**ALONG A STONY TRACK,** Dr. Hugh Russell's mobile health team sets out (left) to visit an Ethiopian mountain village. Armed guard on right is to protect party against bandits. At the village the first patients wait for attention (right) even before the camp is ready. Woman on ground has collapsed in front of Dr. Russell's tent. Her husband watches over her. Below, the doctor examines a village woman. He found many of the people suffering from tuberculosis due to undernourishment.

WHO photos



**F**EW physicians have ever been given so difficult a task as that assigned to New Zealander Dr. Hugh Russell by the Ethiopian Government and the World Health Organization. His two-year mission is to discover from which diseases Ethiopians suffer and die. From his report the Government will be able to organize health services on a practical basis among some 15 million people who so far have never received any kind of medical care.

For staff he has a British male nurse, Robert Ousby (a much-travelled ex-member of the Royal Navy), a French administrator named Mr. Schilling (the right name for the man who holds the purse strings), two Ethiopian male nurses and a Somali cook. He is always escorted by an armed guard to protect him against the *shiftas* (the bandits who sometimes roam the mountains). And he takes with him thousands of doses of penicillin, vaccines against smallpox, typhus and rabies, ampules of vitamins, pills against malaria and intestinal worms, aspirins and powdered milk.

Journeying by Land Rover, by truck and by mule—but often on foot—among some of the world's most magnificent scenery—the rugged Devil's Mountain region bordering Ethiopia's northern frontier with Sudan—"The Quiet Doctor", as the members of his team call him, invites sick people to his camp. Often it is the whole village which arrives—they are all sick in one way or another with malaria, syphilis, tuberculosis, anaemia, typhus, leprosy and a whole gamut of intestinal diseases.

Bending over to listen to the chest of a child he detects a shrill note. He shakes his head. The father of the child leans towards the interpreter who translates the blunt verdict: "Double pneumonia. It's too late. I can do nothing for him; the child will die." The doctor nevertheless orders a penicillin injection so that the parents, who have tramped all night and morning to reach him, may not feel they have come for nothing. Dr. Russell has to pass on without waiting to find out what happens to his patients. He must fold his tent and move on to the next village for his survey will only be of value if it covers a sufficiently large number of people.

The result of his work will be of paramount importance for Ethiopia which has today only seven national and about 150 foreign physicians—the latter being of 15 different nationalities and, as a rule, not speaking any of the country's ten dialects. Later this year his report will enable the Ethiopian Government to organize, on a firm and permanent basis, the health services of which these rural areas are in such urgent need.





# Letters to the Editor

## KEEP IT SIMPLE

Sir,

As you ask for suggestions and criticisms, here are mine. Tell us about the daily life of people in all parts of the world as often as possible. I should like to see, for example, articles like "A Woman's Life in an African Village" (March and April, 1957). I also feel that your magazine can and should be widely read by countryfolk and industrial workers... but the technical and scientific language in which many of the articles are written is somewhat discouraging. Very often the articles would be far more pleasant to read if the same things were expressed in more familiar terms which could be immediately understood. It is a great pity that people who are intelligent, though they may not have attained the top standards of education, should be forced to say "It's quite above my head" or "The subject is far too difficult for me", because of a few phrases or words which could easily be replaced by more simple ones. In making this point I am solely concerned with the wider readership of your magazine, and I hope that you will also think of readers who are not "intellectuals" but who wish to educate themselves and also develop a better understanding of the rest of the world. Take it from me, there are many such people.

Mlle J. Raiton  
Paris, France

## PROTECTING THE CHILD

Sir,

In Paul Almas's article, "The Rights of 900 Million Children" (THE UNESCO COURIER, October 1957) no mention is made of Spain. In issue N° 55 of the *Revista de la Proteccion de Menores* (a review dealing with the protection of young people) there appeared a very full account of the legislation applied by the juvenile courts which exist in all the provinces of Spain. One would have to consult the *Fuero Real* (King's Grant), the *Leyes de Partida* (Local Bye Laws), the *Institución de Padre de Huérfanos* (The Creation of Orphanages) and especially the *Cedula del Consejo* (Royal Council Charter) of July 12, 1771, recorded in the *Novissima Recopilación* (Code of Laws), to find the earliest antecedents of Spain's preoccupation with the problems of children in need.

A law of 1904 created bodies for the protection of children and in 1918 another law set up protective courts for minors. Institutions operating under these laws are alone taking care of 60,000 boys and girls in boarding and semi-boarding schools, special homes, reform schools, supervisory establishments, agricultural centres etc., There are also other official organizations and many centres run by the Church which look after young people and make themselves responsible for children even before their birth, and until they reach

their majority. Corporal punishment is forbidden and in the centres for minors needing special education, the latest psycho-pedagogical methods are employed. The work thus carried out by the Committees for the Protection of Minors and by the Ministry of Education is of an educational and preventative nature and it has so reduced the proportion of young delinquents that we have been obliged to transform certain reform schools into protective centres. The legislation on education is a model one. Since 1535 preoccupation with social problems has been reflected in Spain's laws. A law on the employment of women and young people which went into effect last summer is one of the most advanced forms of labour legislation in the world.

Candido Martín Alvarez  
Consejo Superior de Protección  
de Menores, Ministerio de Justicia,  
Madrid

## NEGLECTED NORTHERN AUTHORS

Sir,

I read with great interest THE UNESCO COURIER of June, 1957 and in particular Mr. Arrhe's "Great Literature of East and West." I would like both to congratulate and thank you for your work in breaking the "translation curtain." In reading through your list of published and to-be-published books in English, I thought of a few suggestions. In your series of the works of writers no longer living why not Karl Gjellerup and Henrik Pontoppidan, Danish co-winners of the Nobel-Prize for Literature (1917). None of their works is available in either English or French. Juhani Aho is highly regarded in Finnish literature. The works of Nikolay S. Leskov are, unfortunately, totally unavailable in English. Surely Leskov as a Russian classic deserves translation. In Mirsky's classic on Russian literature, Leskov is described as "generally recognized by Russians as the most Russian of Russian writers and the one who had the deepest and widest knowledge of the people."

In your listings of contemporary writers I noticed a Swedish to English and Norwegian to French UNESCO translation. With no disrespect to Swedish literature, surely with Pär Lagerkvist, Peter Nisser, Vilhelm Moberg, Frans G. Bengtsson, and Harry Martinson—all available in English—Swedish would not be "a language of little diffusion". However, the absence of Finnish writers seems apparent. None of the works of Frans Eemil Sillanpää, Nobel prize winner (1939) is available in English. Heikki Toppila, Toivo Pekkanen, Unto Seppänen and Pentti Haanpää all seem to be languishing behind the translation barrier.

Howard L. Landon  
Bedford, Indiana, U.S.A.

*Ed. Note: Unesco is very conscious of the importance of translation from the Scandinavian languages, particularly Finnish. In the immediate future,*

*however, attention is being concentrated on translations from the Asian languages. Future projects envisage at least one translation from Finnish.*

## DANGERS OF NUCLEAR FALLOUT

Sir,

I would like to suggest an issue on the scientific facts regarding the dangers of fallout from nuclear weapons; also the need for enlightened public opinion regarding the moral implication of bomb testing.

Albert V. Baez  
California, U.S.A.

## WEATHER DOWN THE AGES

Sir,

Would it be possible to publish an article showing and explaining the climatic changes over historical periods. One could touch on the Upper, Lower and Middle Paleolithic, the Mesolithic and Neolithic and enlarge as far as possible on historical times. Vineyards were once common in England, at Lincoln, in the Salisbury area and elsewhere, then a cold spell came in; recently it has been warming up again. A comparison between England, the rest of Europe, the Americas and elsewhere would be of interest, I know of no book which covers the subject from any angle.

Climatic changes must affect history but no history attempts to deal with the effects. Food habits, clothing, housing, apart from agriculture are all influenced by the temperature and humidity.

I often wonder if the old castles built say in the 12th century were erected for a warmer climate—and what was the climate like in Britain during the Roman occupation? Again what was the Italian climate like in early Roman times, did it get warmer so that malaria spread?

S.N. Jenkinson  
Bradford, England

## TELLING THE UNESCO STORY

Sir,

I would like to express my appreciation for your excellent magazine whose papers have unfolded to me during the last year a great wealth of knowledge and interesting facts on countless topics. As I have an interest in nearly all the arts and in many fields of science, I find the breadth and scope your magazine remarkable and pleasing.

The most impressive thing, however, that your magazine has conveyed to me is the wonderful and extensive work that UNESCO carries out to impart peace and humanity and liberty in this far from perfect world of ours. I shall continue to bring your magazine to the notice of my friends, as I feel everyone should interest themselves in the problems and tasks with which UNESCO deals, and which I strongly feel concern us all.

Marian Leach  
Croydon, England

# From the Unesco Newsroom...

**NEWCOMER TO U.N.:** A new U.N. Specialized Agency—The Intergovernmental Maritime Consultative Organization (Imco)—has just come into being in London. The Convention governing the functions of Imco—to serve the interests of international shipping and seaborne trade—was drawn up in 1948, but needed ratification by 21 states, including seven with at least one million tons of shipping each, to bring the Agency into being. Recent ratification of the Convention by Japan fulfilled these conditions.

**ATOMS FOR PEACE:** More than 200 scientists from 26 countries have been invited by the European Organization for Nuclear Research (CERN) to attend the International Conference on High Energy Physics which opens in Geneva on June 30. India's third atomic reactor is expected to go into operation during 1958-59. Known as "Zerlina," it will assist scientists and engineers making research in new designs for atomic reactors. An "Atom School for Business Men" will open in the United Kingdom in September. It will demonstrate to senior industrial executives the many applications of radio-isotopes in industry and research.

**THE UNIVERSE OF MUSIC:** One of the largest gatherings of musicians, composers and conductors from all parts of the world ever to meet in Paris will take place in

October and November next. This Music Festival, together with a Congress on "The Universe of Music and its Different Cultures," is being organized by the International Music Council which was created by UNESCO in 1949. These events will coincide with UNESCO's Tenth General Conference, in Paris and the inauguration of the Organization's new headquarters building.

**PICASSO MURAL FOR UNESCO:** Last month Pablo Picasso handed over to Dr. Luther H. Evans, Director-General of UNESCO, the monumental mural he has completed for UNESCO's new building in Paris. Commissioned as one of the works by internationally famous artists to decorate the new building, Picasso's painting—consisting of 40 panels—will be mounted on a wall 31 feet wide and will cover nearly 900 square feet in the Conference building.

**LIBRARY FROM SUGAR:** The National Library of Cuba recently vacated a former artillery barracks where it had been housed for many years and moved to a new home in Havana. The cost of the new building was obtained partly from a duty of 0,005 pesos imposed on every sack of sugar produced in Cuba and partly from an advance by the Bank for Economic and Social Development. Its facilities include a museum, a theatre and a music room. It has a 17-storey tower which can house one and a quarter million books.

**UNESCO 'BEST SELLERS':** The two most translated UNESCO publications are The UNESCO Source Book for Science Teaching (See THE UNESCO COURIER, February, 1958) and Nuclear Energy and Its Uses in Peace by Gerald Wendt. The book on Nuclear Energy has already been translated into 15 languages and the Source Book for Science into ten, although other translations are being considered. The first edition of the science teaching book is now practically sold out, but the second edition (cloth bound) can be obtained from UNESCO's National Distributors (See page 35). The price is U.S. \$3.00 or 15/- (stg.)

**TV GUIDES TO MUSEUMS:** Museum, film and TV specialists are to meet during the International Exhibition which opened in Brussels last month to discuss how they can collaborate to give better service to the public. Films and TV offer new opportunities of showing unique collections in museums to a wider public than ever before, providing certain technical problems are overcome. The Brussels meeting, or-

## ENTRY OF GHANA BRINGS UNESCO MEMBERSHIP TO 79

UNESCO now has 79 Member States. Last month Ghana, the year-old West African nation deposited the instrument of acceptance of membership in UNESCO, in London, and thus became its 80th Member State. But a few days later, the listing of Egypt and Syria as two states was formally changed to one—the United Arab Republic. UNESCO officially came into existence on November 4, 1946 with 20 Member States. Since then its home has been the Hotel Majestic in the Avenue Kleber, in Paris. This year it will move to its new permanent headquarters now nearing completion near the Eiffel Tower on Paris's Left Bank.

Ghana became UNESCO's newest member on April 11 when its representative signed the UNESCO Constitution which is kept in the Foreign Office in London. The state of Ghana was born at midnight on March 5, 1957, when the former colony of the Gold Coast joined with the former British-administered trust territory of Togoland, to become an independent sovereign nation. The Gold Coast had been an Associate Member of UNESCO for some years.

ganized by the International Council of Museums, will enable specialists from different countries to exchange ideas and experience.

**SUN-MADE FRESH WATER:** Sun energy in the Antarctic is being used to operate a solar still for transforming salt water into fresh by the Australian Expedition at Davis base in Antarctica. With a simple, compact still, which produces fresh water by evaporation, the expedition is making about two gallons of drinking water daily. It can be used in all climates since normal daylight is all that is needed to set the process in motion.

**BEAUTY IN ROCKS:** Nearly 100 tons of decorative rocks and stones are now being put in place in the 20th century Japanese garden which is one of the decorative elements of UNESCO's new headquarters in Paris. Construction of the garden is being supervised by Isamu Noguchi, an artist, sculptor and landscape gardener, who recently arrived from Tokio bringing magnolia, cherry, plum and bamboo trees—a gift from the peoples of Japan.

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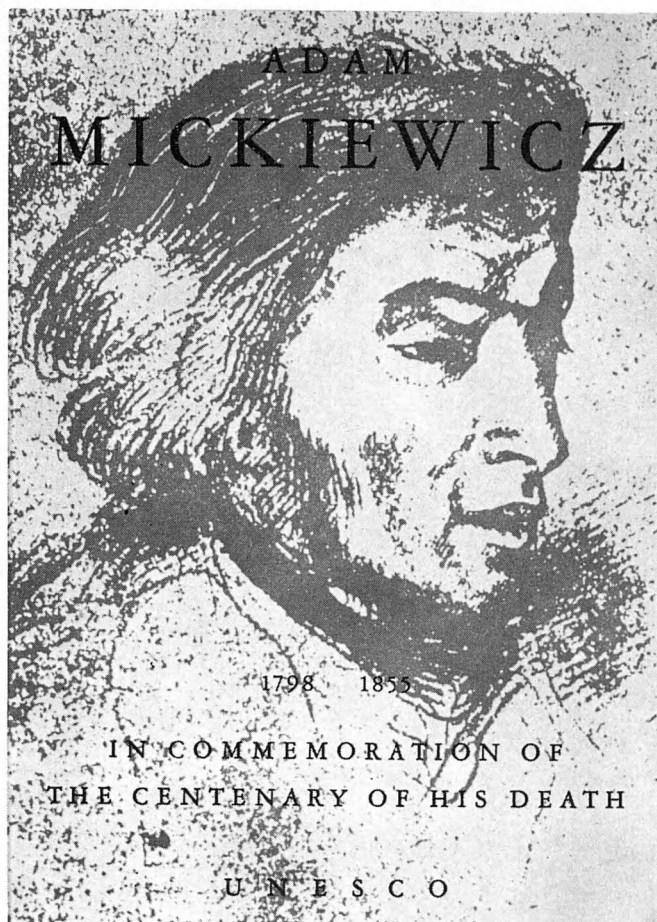
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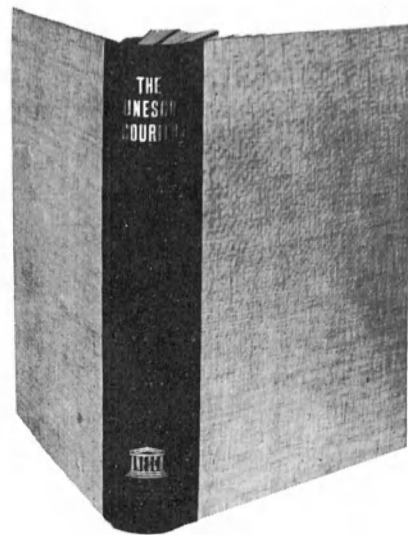


UNESCO'S tribute to Adam Mickiewicz on the 100th anniversary of his death (1855) was the publication of a work which pays homage to the memory of a great poet who "brought honour not only to Poland but to all mankind". This work, which has since aroused the greatest interest in all parts of the world, consists of two parts. The first comprises a series of studies and essays by prominent writers and professors on the various aspects of the life and works of the great Polish author. Jan Parandowski, President of the Polish Pen Club, has contributed an introduction to the life and work of Mickiewicz, while Jean Fabre of the University of Paris analyses the role of Mickiewicz in the European Romantic Movement. The influence of Mickiewicz's writings in Russia, France and Italy is examined by Serge Sovietov of Leningrad University, Maxime Leroy of the Institut de France, and Giovanni Maver of the University of Rome. In another essay, Karel Krejci, of the Charles IV University in Prague, discusses Mickiewicz's influence on the literature of the western and southern Slavs, while his most famous poem *Pan Tadeusz* is analysed by Jules Kleiner of the Polish Academy of Sciences. To complete the volume there are selections from some of Mickiewicz's major works.

Unesco Publication, Paris. Price: U.S. \$3.00; 15/6 (stg.); 750 fr. F. Obtainable from UNESCO'S National distributors, see below.

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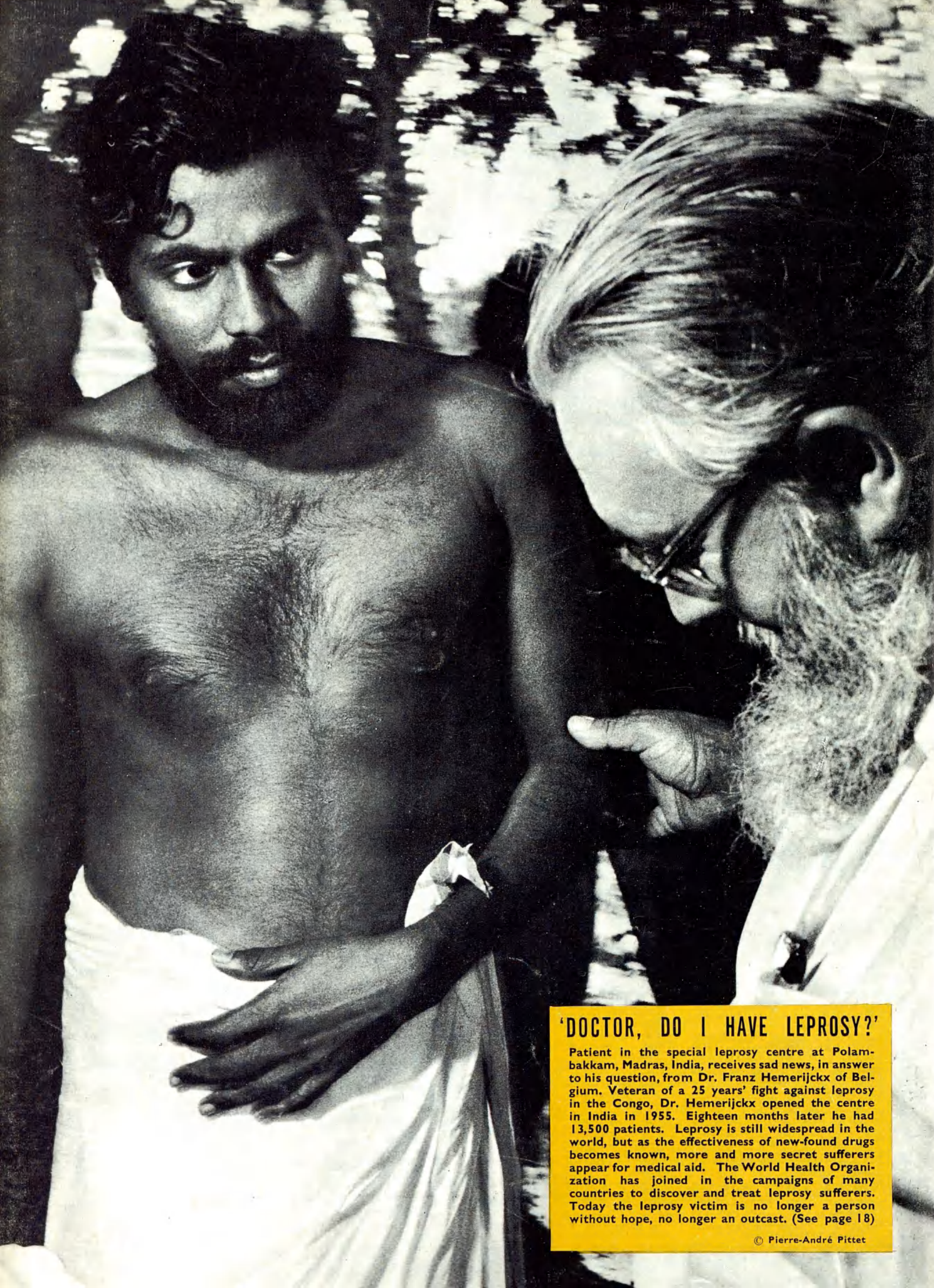
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### 'DOCTOR, DO I HAVE LEPROSY?'

Patient in the special leprosy centre at Polambakkam, Madras, India, receives sad news, in answer to his question, from Dr. Franz Hemerijckx of Belgium. Veteran of a 25 years' fight against leprosy in the Congo, Dr. Hemerijckx opened the centre in India in 1955. Eighteen months later he had 13,500 patients. Leprosy is still widespread in the world, but as the effectiveness of new-found drugs becomes known, more and more secret sufferers appear for medical aid. The World Health Organization has joined in the campaigns of many countries to discover and treat leprosy sufferers. Today the leprosy victim is no longer a person without hope, no longer an outcast. (See page 18)