

PUBLIC HEALTH WORK IN AFRICA

THE FIGHT AGAINST THE GREAT ENDEMIC AND MALNUTRITION



WORLD HEALTH ORGANIZATION
REGIONAL OFFICE FOR AFRICA
BRAZZAVILLE

This round-up of some important public health problems in Africa South of the Sahara, derived from the 1957-1958 annual report of the WHO Regional Director for Africa :

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completes and brings up-to-date information on these problems contained in the booklet issued in 1958 by the WHO Regional Office in Brazzaville, on the occasion of the 10th Anniversary of the Organization, entitled:

PUBLIC HEALTH WORK IN AFRICA

TEN YEARS OF PROGRESS

Issued by the Information Unit
of the
WHO Regional Office in Brazzaville

MALARIA

FOR CENTURIES MALARIA HAS TAKEN A HEAVY TOLL IN HUMAN LIVES AND ECONOMIC LOSS - WHEREVER IT EXISTS HUMAN PROGRESS HAS BEEN RETARDED - MAN'S STRUGGLE AGAINST THIS DISEASE HAS BEEN UNREMITTING AND AGE-LONG - YET AS RECENTLY AS 1955 IT WAS STRIKING EACH YEAR 200 MILLION PEOPLE AND CAUSING TWO MILLION DEATHS - TODAY MORE THAN 1100 MILLION PEOPLE ARE EXPOSED TO MALARIA, AMONG WHOM ABOUT 116 MILLION IN AFRICA SOUTH OF THE SAHARA - WITH THE GROWTH OF INTERNATIONAL TRAFFIC THE DANGER OF ACCIDENTAL REINTRODUCTION OF MALARIA INTO COUNTRIES FROM WHICH IT HAS BEEN ERADICATED IS EVER PRESENT

THE CONSEQUENCES OF MALARIA CANNOT BE RECKONED ONLY IN TERMS OF THE HUMAN DEATHS AND SUFFERING THAT LIE BEHIND THESE FIGURES - THE IMPORTANCE OF THE DISEASE FROM AN ECONOMIC AND SOCIAL POINT OF VIEW DERIVES FROM ITS MANY INSIDIOUS EFFECTS - MALARIA IS THE WORLD'S GREATEST SINGLE CAUSE OF DISABEIMENT - IT STUNTS PHYSICAL AND MENTAL DEVELOPMENT - IT HAMPERS THE EXPLOITATION OF NATURAL RESOURCES, REDUCES AGRICULTURAL PRODUCTION, AND IMPAIRS INDUSTRY AND COMMERCE.

AFRICA'S GREAT HOPE

Malaria Eradication

Malaria eradication and pre-eradication campaigns in Africa are carried out in close liaison, not only with the Regional Office of the World Health Organization in Brazzaville, but also with the Headquarters of this Organization in Geneva, which is playing an important part in the coordination of the vast efforts at malaria eradication on a world scale. The fight against malaria must be an international undertaking so that all countries concerned can combat at one and the same time. Only by this means can the efforts of the many Governments be combined in order to prevent the recurrence of infection in the areas from which it has been eradicated. Only a combined effort by the national and international organizations can hope to achieve ultimate success in eliminating malaria from the world.

Science and money

Two factors are essential if malaria is to be eradicated from the African Region. The first is a precise knowledge of the problem as it presents in the varying conditions of climate and transmission in the continent. This demands detailed studies of epidemiology of the disease and with particular reference to the behaviour of the mosquito vectors. The second, but equally important factor, is the availability of sufficient funds to enable the campaigns to be conducted on the scale which eradication demands. In the African continent, eradication of malaria is feasible only if it can be achieved at a reasonable expense and within a limited period.

A mysterious enemy

In the pre-eradication phase, WHO is putting at the disposal of Governments advisory teams of experts whose work consists mainly of :

- a) studying the distribution of malaria throughout the territories
- b) studying the factors related to transmission, and preparing the way for the "attack phase" of the eradication programme. This entails an investigation of the susceptibility of the anopheles mosquito to insecticides, behaviour of these mosquitoes in the absence and presence of insecticides, with particular reference to their tendency to rest and bite outside houses (exophily). The length of residual effect of insecticides in local conditions when deposited on the walls of houses must be demonstrated and a study must be carried out of the effects of different anti-malaria drugs and determining the best means of distributing them.

Anopheles gambiae has always been considered to be the principal vector of malaria in Africa. Unfortunately, the behaviour of this mosquito is very variable and a great deal more study is needed before it can be fully understood. There are, however, many other vectors in the region, particularly, A. funestus, A. nili and A. moucheti, which may play a vital role in certain parts of the continent.

A two-front attack

It was originally hoped that the use of residual insecticides inside houses would always be sufficient to break the cycle of transmission of malaria. Unfortunately, however, the vectors have in many instances developed either a physiological resistance or a behaviouristic resistance to the insecticides. The latter is best illustrated by the phenomenon of exophily, where the mosquito bites and rests outside houses, and is no longer, therefore, affected to any extent by the insecticides on the walls. Today, therefore, the battle proceeds simultaneously on two fronts:

- against the mosquitoes with insecticides, and
- against the malaria parasites within the human body by the mass distribution of effective anti-malaria drugs.

Combined experiments with insecticide spraying and drug distribution are under way in 12 different projects, mainly in tropical Africa. It is hoped that by the end of 1959 the results of these mass experiments, together with the data obtained by the Malaria Advisory Teams, will enable the formulation of the most effective method for interruption of malaria transmission in even the most difficult parts of Tropical West Africa, where conditions are perhaps more unfavourable to eradication than anywhere else in the world.

A patient and cautious approach

The remarkable complexity of the problems which must be faced by research workers in the laboratory and the field in conditions which vary greatly from one part of Africa to another, explain the patient and cautious approach of the Governments of the Region to a continent-wide eradication project. However during the last three years, since the recommendations of the Lagos Malaria conference in 1955, the efforts of the Governments have been greatly extended in an attempt to discover the method of interrupting malaria transmission in their own territories. This prepares the ground for nation-wide operations at a later date with the most up-to-date of techniques. In order to demonstrate the extent of the work already carried out in this important field, there follows a summary of the present developments in a number of countries in the Region whose Governments have welcomed WHO assistance or advice in an attempt to solve their many difficult problems.

In Senegal, a pilot zone created several years ago in the region of Thiès, has been gradually extended. It now protects a total of almost half a million inhabitants and several important drug experiments are at present being tried on a large scale.

In Dahomey, the population protected by the malaria project in the coastal strip amount to 620,000, with a further 150,000 in the townships of Cotonou and Porto Novo, which have been protected indirectly, although spraying ceased in 1959.

In Togo, the project began in 1953, with a protected population of 75,000. This has been increased and is covering almost 300,000 people during 1959. As there is a new project envisaged to follow the present pre-eradication survey

in the neighbouring territory of Ghana, it has been decided to extend the work in Togo during 1959 so as to protect the eastern border of this project from the introduction of fresh infection from Togo. As in some other territories considerable propaganda has been carried out for health education of the public. This has been aimed at achieving success from drug distribution by the local people themselves at town and village level instead of committing large numbers of health services staff to this important aspect of the work.

In Upper Volta a small but very efficient pre-eradication study project is under way involving a total population of about 50,000. Some very valuable entomological studies have been carried out which have greatly advanced the understanding of the anopheline mosquito and its habits in the presence of insecticides. There are three problems which have made this project more difficult from the operational point of view. First, the farmers build temporary "Farm huts" during the time of sowing and harvesting of the crops. These huts are often very remote and difficult of access, and unfortunately they are inhabited by the farmers and their families during the greater part of the peak malaria transmission season. The second factor of importance is the presence of vectors other than A.gambiae, most of which are exclusively exophilic and therefore little affected by the residual spraying. The third problem of importance has been the appearance of resistance of A.gambiae in this area to one insecticide group.

In the French Cameroons two large scale projects are in progress in the north (420,000 inhabitants protected) and in the south (930,000 inhabitants protected). Whereas results in the north have been in most cases similar to those produced elsewhere in tropical Africa, and the malaria rates have not fallen below an 80% reduction on pre-spraying figures, in the southern forest zone which includes the pilot zone of Yaoundé, the results have been outstanding. Due chiefly to the close relationship between the vectors and man in the forest, a factor which is very favourable to breaking the chain of malaria transmission, residual insecticides alone have succeeded in practically interrupting transmission throughout the greater part of this vast territory. So encouraging have these results been in fact that it has been decided to introduce the third phase of the eradication programme, namely that of "surveillance", in the pilot zone of Yaoundé during 1959/1960, with the aim of suspending spraying operations and of eventually extending this phase to the rest of the South Cameroons forest area.

In Ghana a pre-eradication survey began in 1958 in the Trans-Volta territories with a population of about 450,000. Work is proceeding well and it is hoped that a plan will soon be prepared for an eradication programme which join up with the existing programmes in Togo and Dahomey.

In Kenya, the use of spraying and drugs in the highlands of the Nandi district where severe epidemics used to be recorded, have succeeded in eliminating the disease. Although spraying has been discontinued for one year, there has been no evidence of any re-introduction of the epidemic.

In Liberia, a population of about 300,000 is being protected in the central province of the territory. This is a rural forest area and once again the problem of farm huts far away from the villages have presented a serious obstacle to effective malaria operations. These farm huts are even more difficult to find in the forest than in the savannah country of Upper Volta. At the same time, a widespread resistance of the principal vector A.gambiae to one insecticide group has effectively removed one of the weapons at the disposal of the malariologist. This project was re-organized in 1958, and the results recently obtained are encouraging. The methods at present in use include the spraying of all habitations with DDT and the distribution of anti-malarial drugs.

In North Nigeria a project began in the Western Sokoto district a number of years ago, and it was in this project that the resistance of A.gambiae to one insecticide was first demonstrated in the field. In spite of this serious drawback in the relatively early stages of the work, the project has not only been successful in reducing the malaria rates to a very low level, but the extent of the work has been increased and now involves a population of about half a million.

In Uganda, the Government has for some time been contemplating the resettlement of inhabitants from the southern part of the Kigezi Province on the shores of Lake Edward to a fertile area in the northern part of the province. Malaria infection below the 4,000 feet contour has been a serious obstacle to this resettlement and WHO is assisting the Government in an eradication project within its natural frontiers. The project also includes a pre-eradication survey in the neighbouring province with a view to a later extension if funds permit.

In the Somaliland Protectorate, the problem is a very different one as over 90% of the inhabitants are nomadic. It is therefore difficult for the epidemiologist to follow the course of epidemics, as the wandering herdsmen with their families are continually moving in search of grazing which varies according to the irregular rainfall in this arid country. A great deal of study is proceeding at the moment with the aim of carrying out an eradication project within the whole of the territory which will link up with the work proceeding in Somalia and Djibouti, the neighbouring territories.

