

Can Malaria be Eradicated ?

by

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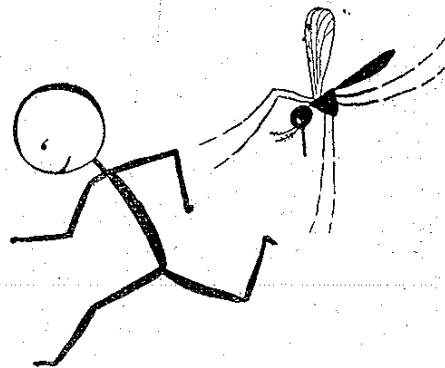
There is much talk these days about malaria eradication. For example, the World Health Organization and the Pan American Sanitary Organization, with the help of UNICEF, are co-operating in an international project to eradicate malaria from all of North and South America and the West Indies, a tremendous undertaking ! Similar plans are in preparation for the Middle East. Recently, in this connection, I visited Iran, Iraq, Syria, Jordan, Lebanon and Turkey, and found health ministries all eager to join a five year inter-regional scheme to eradicate malaria.

But some persons are asking if "malaria eradication" really means what it says. Is it possible to eradicate malaria from a country ? Must you kill all the mosquitoes ? Isn't the cost too great ? These and other questions suggest that some explanation may be useful.

In the first place, what is malaria ? Malaria, often referred to as "chills and fever" is a disease caused by parasites in the blood. These microscopic invaders are remarkable animals. They live two lives—one in mosquitoes and one in man. They cannot fulfil their destiny in man until they have first lived for ten days or longer in the body of certain kinds of mosquitoes called Anopheles. In the mosquito they mate and reproduce their dangerous seeds. After these malaria seeds are ripe the mosquito spits them through its feeding tube into man's blood. Before long the seeds become malaria parasites in red blood cells.

Now these cells, as everyone knows, are exceedingly important to

health. We say a man is red-blooded—meaning that he is strong and energetic. Unfortunately, it is the nature of malaria parasites to live in red blood cells and at the same time to eat them for food. Great numbers of cells are destroyed in this way.



Do not flee from danger !

But while destroying a red cell, the parasite becomes robust. Soon it splits into several parts, each of which becomes a new parasite ready to destroy another red cell. If not checked by anti-malaria remedies, this process continues until the man dies or until the parasites are defeated by the white-cell militia of the blood. This may take a month, or a year, or even two.

Some of the parasites in the blood do not divide when they grow up. Instead, they become sexually mature. They are then ready to infect a mosquito and thus to start the malaria chain all over again. So it goes, on and on—mosquito to man to mosquito to man, until almost everyone in a community has the disease. Probably 200 million persons were infected with

malaria in this way in 1955.

Those who have malaria naturally become anæmic, they lack vitality and ambition, can't farm or work properly, can't provide for their families, get into debt, or maybe die prematurely. Without doubt, malaria is bad for an individual, bad for a community and for a nation. It ought to be eradicated. But is this possible?

Observers of wide experience believe that in many countries malaria eradication is completely possible. The United Nations Children's Fund (UNICEF) has backed this belief by millions of dollars. Already, malaria has been nearly eradicated from Argentina, British Guiana, Ceylon, Cyprus, French Guiana, Italy, Mauritius, Venezuela and the United States. Other countries, such as Formosa and Greece, have made great strides towards malaria eradication. Several more, for example the Philippines and Thailand, have started intensive malaria eradication projects.

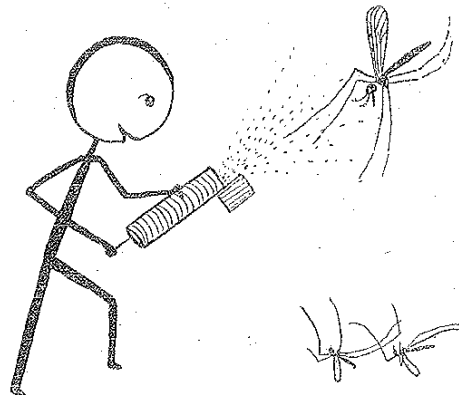
Specifically, we say that malaria has been eradicated from a country when for a period of three years no one has been infected with malaria by a mosquito in that country. Very few malaria parasites can live in the blood for more than three years and these few can be killed by modern remedies.

Therefore, the first objective in malaria eradication projects is to keep mosquitoes from spreading any malaria for three years. Then comes the task of locating persons who still have parasites in their blood and giving them proper treatment. After that there remains a routine guarding of the investment—"patrolling the beat". The regular health services keep eyes open for new cases which are dealt with promptly.

But how can mosquitoes be kept from spreading malaria? The answer lies partly in a fact I have already mentioned. No mosquito can infect a man for at least ten days after it has taken malaria parasites into its body. The mosquitoes may become infected

but if they don't live long enough they can't pass on the infection. If the mosquito can be killed during this ten-day period then any undeveloped malaria parasites die with it.

So the idea is to kill the malaria-type mosquitoes before they are ten days old. We know that they must take blood every two or three days. Mostly, they come into houses at night for this blood and then they generally rest a day after feeding. Most frequently they stay quietly on walls. These are the places to kill them because here are the potentially most dangerous mosquitoes.



Fight the enemy

We now make use of certain insect-killing substances called DDT, BHC or Dieldrin, sprayed on surfaces where we know the mosquitoes are apt to rest. The wonderful quality of these new insect poisons is that one application on a wall remains deadly to mosquitoes for several months. As the mosquito stands on the sprayed surface, tiny parties of the insecticide cling to its feet and these are sufficient to destroy the insect. In a few hours it and its developing malaria seeds die. This **residual spraying**, as it is called, is effective in much of the world today. But there are a few exceptions where malaria type mosquitoes do not feed or rest indoors and do not stand on sprayed surfaces. In such places other methods of eradication must be used.

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