sleep, and often their bites are not noticed in consequence, for with all blood-sucking insects the irritation of the bite is much greater if the creature is disturbed. To begin with it injects an irritating fluid. If it gets a good suck it draws most of this out again, if it is disturbed the fluid remains and causes swelling and irritation. A nibbling mosquito or flea is much more annoying than one that gets a good bite.

These facts explain three statements which are often made and are supposed to refute the mosquito theory, viz.:—

(*a*) "I have often been terribly bitten by mosquitoes, but have not had malaria in consequence." Answer: The mosquitoes were Culices, so this is easily explained.

(*b*) "I have never been bitten by mosquitoes, but have had malaria." Answer: The bites of Anopheles occurred during sleep and passed unnoticed.

(*c*) "There are no mosquitoes here, but people suffer from fever." Answer: This generally means mosquitoes are scarce; what there are, are Anopheles, and their night attacks are not observed.

3. Thirdly, the *Anopheles must have been infected with malaria, and the germs must have had time to come to maturity.* Fortunately for us the percentage of Anopheles thus equipped is small, so that one can be frequently bitten by Anopheles before one is unlucky enough to be bitten by an infected one, just as, though a lancet is the instrument of vaccination, one could scratch oneself hundreds of times with no result until one got a lancet charged with active lymph.

The source from which the Anopheles derive infection is nearly always native children. Contrary to what is often supposed, it has been shown that natives are not naturally immune to malaria. Practically all native children under five are in a chronic state of latent malaria. They may seem well, but they have parasites in their blood. Many children in fact die from malaria, those that grow up have acquired considerable immunity. The native of twenty is on a par with the white man who has been twenty years in Africa, and both are to a great extent immune against malaria.

Further, mosquitoes are poor fliers. They very seldom travel a quarter of a mile, and never half a mile from the water in which they are bred, and to which they return to lay their eggs. Hence, in considering the site of any station, a knowledge of their breeding-places is of prime importance. Culices breed in any stagnant water, often in artificial collections, such as tanks and pots and tins thrown away in the neighbourhood of houses. If they are bad in any place, a hunt will almost invariably reveal their breeding place close at hand.

On every station all tins, &c., should be collected and buried in a pit before the rainy season begins.

Anopheles breed mainly in natural collections of water which are not quite stagnant, but kept fresh by rain, or by a trickle of water through them.

In the dry season Anopheles breeding grounds may be absent, but the mosquito can live on for months in native houses, so this fact only reduces their numbers and does not exterminate them.

The above is a summary of the facts of malarial infection as worked out by the Royal Society's Commission and the various expeditions from the London and Liverpool Schools of Tropical Medicine. Let us now consider their application.

Three possible methods of preventing malaria have been propounded.

1. *The extermination of Anopheles* by draining their breeding places, thus preventing the carrying of infection.

2. *The extermination of malarial parasites in natives* by the compulsory administration of quinine twice a week.

3. Avoidance of the bites of infected mosquitoes. This is the method that must be aimed at by members of the mission. It may be procured by:—

(*a*) Special precautions applicable to the individual.

(*b*) General precautions as to the site of the Mission Station.

(*a*) Under special precautions come:—

1. The *constant* and *intelligent* use of mosquito nets which are free from holes. In view of what has been said above about the night habits of the Anopheles, this is of prime importance.

2. As far as possible, after sunset, waiting about on the lake shore, or in native villages, where infected Anopheles are sure to be present, should be rigorously avoided.

3. During the evening, when mosquitoes are troublesome, wearing gaiters or two pairs of socks, fumigation with pyrethrum powder, and the use of oil of lavender help to protect from mosquito bites.

(*b*) General precautions as to the site of the Mission Station aim at either *isolation* or *segregation*, or at a combination of these.

By isolation is meant securing freedom from Anopheles by building a station at a distance of a quarter to half a mile from their breeding places.

By segregation is meant separating the European dwellings by a like distance from native dwellings, then, even though Anopheles were present, they would not get the opportunity of becoming infected, and would be harmless.

This method, which is the simplest and the most certain, has been employed largely in India and in some Government and trading centres on the West Coast. It is obvious that it is only partly possible in a Mission Station. It is possible, however, to arrange that all married workers should live with their children away in the village, and thus by removing the children under ten most of the objects of segregation would be secured.

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