

THE FIGHT AGAINST MOSQUITOES

Malaria germs are transmitted to man by mosquitoes. The measures taken therefore in fighting this disease partly concern mosquitoes, partly man. Let us first consider the former:

The female mosquito lays her eggs in water: where the eggs produce larvae, which must come to the surface of the water to breathe, and which are finally transformed into winged insects.

In consequence, we can attack either the larvae or the adult mosquitoes.

As the larvae are eaten by fish, it is sometimes sufficient to put certain fish into the ponds and streams to arrest the development of the mosquitoes.

Moreover, these insects need clear and at the same time stagnant water. The multiplying of the mosquitoes may therefore be arrested by letting into the streams alluvion or the soapy outflow of wash-houses, by creating a rapid current, by frequently fluctuating the level of the water or possibly by drying it up, by shading the water, by encouraging the growth of surface vegetation, at the same time removing from the banks the tufts of water weeds, or by letting sea-water into the coastal lagoons.

Finally, lacking other means, a thin layer of petrol, Paris green or other substances can be spread on the surface of the water; the larvae consequently are unable to come up to breathe, and die.

Mosquitoes, however, lay their eggs in the smallest puddles, even in those formed by the holes left by the hoofs of grazing cattle, in gutters, water jars, barrels, cisterns, saucepans, plates, jugs and in discarded preserve-tins. All excavations, therefore, should be filled in or covered with sand, the ground drained and swamps dried up; the throwing away of all objects likely to collect water should be prohibited; orders should be given to clean all gutters and cover all tanks and barrels with fine wire netting. The task seems at first sight an impossible one; nevertheless it has succeeded in Cuba, the Panama isthmus, at Rio de Janeiro, and elsewhere.

Furthermore, the destruction of mosquitoes in dwellings should be carried out by different methods of capture, or by fumigation or spraying. Windows should be covered with fine wire netting and a double door placed at the entrance of the house. These measures will only be effective if the walls and roof have no crevices.

Mosquitoes bite domestic animals, as well as man, without causing the former much harm. It has been proved that a stable situated at a certain distance from the house constitutes a means of protection. Cattle breeding should therefore, be encouraged.

Dwellings should be built on high ground, open to the winds and without trees or bushes. They should be at least $1\frac{1}{4}$ miles from the damp places where mosquitoes breed.

Finally, men should wear boots or leggings; women should put paper under their stockings; going out after sunset should be avoided and it is necessary to sleep under a mosquito net, which should be kept in good repair, and which should be tucked under the sheets in such a manner as to prevent insects from entering. The face, neck and hands should be coated with a protective ointment.

Each species of mosquito has its own habits; the means of destruction employed, therefore, must vary accordingly. The most effective method is the reclamation of waste land, —i.e., to drain, cultivate and settle such regions. In Malaya, Asia, Africa and different parts of America this method has been highly successful. In Italy, the Pontine Marshes were only used as pasture land for wild horses and buffaloes. The shepherds, taking shelter at night in huts made of reeds, were all infected with malaria. Thanks to the efforts of the Italian Red Cross and the Government, this region is today a sea of corn, from which have emerged three prosperous towns. Such transformations are very costly, but they not only turn the land into a healthy dwelling place, but also populate and enrich it. The millions thus spent are soon repaid, and continue to create wealth indefinitely.

Methods differ according to circumstances: certain types of cultivation, far from reducing malaria, favour it. Care should also be taken that the work being carried out does not result in a temporary recrudescence of the disease. The collecting of

stagnant water in trenches and terraces must be avoided; and the workmen must be well housed, well fed, and their health adequately safeguarded.

These methods can of course only be applied in certain regions. In others it will be well to take the precautions described above, or those with which we shall deal when speaking of the preventive and curative treatment. The disease may be completely stamped out in large cities. Elsewhere we must be content to reduce malaria to a minimum compatible with the strength and prosperity of the population.

Health Bulletins of special interest to you. Put out by the Malaria Institute of India :—

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| No. 5. | Lectures on Malaria, by Covell | ... | ... | Price Annas 5 |
| No. 11 | Anti-Mosquito Measures with special reference to India, by Covell | ... | ... | Price Annas 8 |
| No. 22 | Man-Made Malaria in India, by Sinton and Raja Ram, | ... | ... | Price Annas 4 |
| No. 25. | The prevention of Malaria incidental to Engineering construction, by Mulligan and Afridi | ... | ... | Price Annas 7 |

These are obtainable from the Manager of Publications, Civil Lines, Delhi.

Also be sure to read the book—Ronald Ross, Dragon Slayer, by J.O. Dobson. Also watch for the Walt Disney malaria film, "Winged Scourge." Little dwarfs take up the fight against the mosquito. This cartoon shoot is due to be released in India in May at both English and Indian cinemas.

THE ANCIENT NURSING ORDER OF ST. JOHN OF JERUSALEM.

By Miss Buchanan.

The Crusades, whose history must be studied elsewhere, are to us of special interest, because they constituted the direct reason for the founding of Military Nursing Orders. The earlier pilgrims to Jerusalem had used the hostels of Paula, and other hostels were established by different nations. But it was not until about 1050 A. D. that some wealthy Italian merchants of Amalfi founded two hostels. They were dedicated respectively to St. John, the Almoner, and Mary Magdalene.

A spirit of *noblesse oblige* which laid upon the nobly born the obligation of service, protection and defence of the weak, resulted in the high ideals of the Military Nursing Order into which knights and high-born Dames entered that they might meet the need arising from the crusades.

Three great military and chivalric nursing orders had their rise in those stirring and romantic times and assumed as their duty a combination of war making, charitable relief, and hospital nursing under devoutly religious forms.

They were in the order of their greatest renown, the Knights Hospitallers of St. John of Jerusalem, Rhodes, and Malta, commonly called the Knights of St. John, the teutonic knights, and the Knights of St. Lazarus. Each had provision for a corresponding order of women. In charge of the sisterhood of women nurses was a noble Roman lady named Agnes, of whom little is known.

In its inception the order of St. John was secular; towards the end of the 11th century, under the direction of Peter Gerard, an intensely devout man, a strictly religious form was adopted, the members renounced the world, took vows of poverty, chastity and obedience, but under its second director Raymond Du Puy, who was essentially a warrior, a markedly military character was adopted and became exclusively aristocratic, open only to members of a distinct social class.

As the war-like features increased, the order was divided for utility's sake into three sections. (1) Knights or men at arms whose first duty was to fight, yet who