

Rome the *Bacillus malariae* is found fully developed; and there is little difficulty in producing them in large numbers by artificial cultivation. They have not been found in the salubrious districts of Lombardy. (2.) This *Bacillus* accumulates in such quantities in the air about marshes, during the hot days of summer, that special apparatus is not necessary to collect them. It may be found in abundance in the perspiration on the hands and forehead. (3) During the acme of fever the sporules of *Bacillus malariae* have invariably been found. (a) In the blood of rabbits exposed to malarial infection. (b) In blood drawn from the veins of men attacked with malarial fever. (c) In the blood taken from the spleen of these patients by a process devised by Dr. Sciammana. (d) By cultivation, perfectly developed bacteria (*Bacillus malariae*) have been obtained from this blood. (e) The same results have been obtained by cultivation of the spleens of persons dying of pernicious fever. Cultivation of the spleens of persons dying of other diseases in non-malarious districts did not reveal the presence of *Bacillus malariae*. (4) If blood taken from the veins of persons attacked with malarial fever is injected into the subcutaneous tissues of dogs, these animals will be seized with typical malarial fever. (5) In every case when the blood has been taken from the veins of fever patients during the cold stage or period of invasion, it has been found to contain *Bacillus malariae* fully developed. During the acme of fever, on the contrary, the *Bacillus* gives place to sporules.

This circumstance is of great importance, analagous in nature to

the *spisillum* which causes typhus fever. It gives us an explanation of the results obtained by Prof. Marchiafava in 1879, who examined immediately after death the blood of five persons who died from malarial fever. In three of these the blood of the heart and veins contained large numbers of fully developed *Bacillus malariae* while in the other two cases not a single perfect *Bacillus* could be found; but there were great abundance of spores.

Now, the recent observations at Rome lead us to believe that these three first cases died during the cold stage of the fever, and that the two other cases died during the acme or hot stage.

Experiments on animals have demonstrated that the favorite seat of the malarial parasite is the spleen and marrow of bones, organs which show the most important alterations in persons who have died of malarial fever. It is probable that generations of parasites change rapidly and spread in these organs according to the idiosyncrasy of the patient, and perhaps, also, according to the nature of the marshes in which they originate. This may explain the difference observed in the duration of intromissions.

The fever probably begins the moment the parasites leave the spleen or marrow of bones and fill the blood. Possibly the cold stage is due to the irritation of the vaso-motor nerves caused by this army of invaders in the circulating system. The conditions most favorable for their development are found in the blood (elevated temperature, stores of oxygen, etc.) and it would not be strange if their destruction was likewise accomplished there. Tissue and blood changes as displayed