We have described ourselves as non-immunes, for none of us have had Mediterranean fever, and we have only lately been exposed to the disease for short periods during the last few months. None of us have had a day's illness during that time, with one exception—the case of G. M. L., who had three attacks of spring tertian malaria, contracted in Sardinia, when the parasite was found in his blood. The attack gave way readily on the exhibition of quinine. Moreover, we have all been tested with the serum reaction for Malta fever, which has given uniformly negative results.

The greatest care also has been exercised by all of us concerned to prevent the possibility of the accidental occurrence of the disease among us. Thus, the contact with cases, or the handling of living cultures of the micrococcus melitensis have been avoided, drinking water carefully examined mosquito netting utilized when necessary, and we have refrained from sleeping on shore. Places where the disease is known to be endemic have been avoided as far as possible.

Up to the present, therefore, these experiments have failed to reproduce the disease, but we trust that our efforts will be ultimately rewarded, and that the true nature of the transmission of Mediterranean fever be fully ascertained, and its prevention practised.

We publish these, our preliminary results, with the hope that they may prove to be of use to those now engaged in investigating the disease, and that, with the kindly help of others, we may have better opportunities for the furtherance of our researches.

Reference.

Reed, Carrol, Lazear, and Agramonte, *Journal American Medical Association*, 1901, vol. xxxvi.

INTERMITTENT FEVER IN MALTA.*

BY

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This is the first time that the existence of intermittent fever has been noticed in these islands. At least this is the first time that cases of ague contracted in Malta have been dealt with by the medical profession. There has always been a vague notion amongst us that there was a time when malarial fever was not an unknown disease in this island. Abela, a knight of the Order of St. John, mentions in his history of Malta, published in 1647, that a certain type of malignant fever was known, against which a certain powder was administered. Many places in old times were marshy and probably malarious. The valley beyond Naxar, on the way to St. Paul's Bay, was marshy for a great extent, and that district was called "Bûr-Marrôd," pronounced now "Benwarrad." Bûr-Marrôd means literally "unhealthy plain." The Marsa was known, in quite recent times, to be marshy and the whole district to be malarious. In the Capuchin convent at Floriana, which overlooks the Marsa, malaria is said to have been endemic at one time, and the friars were even forbidden to go down to church before daylight for fear of contracting the disease. This is what can be gathered from written and unwritten history, but it is a fact that, so far, nobody has demonstrated that a case of ague had been contracted in these islands.

During the month of August, 1904, cases of fever of a type unknown here, came to the notice of medical practitioners at Rabat. All the cases could be traced to a certain district not far away. On September 13th we visited the locality and collected information from the peasants of the neighbourhood.

Wied-il-Kligha is a deep ravine, distant about a mile from Rabat. In 1887 a portion of that ravine was dammed, with a view to collect the rain water for agricultural purposes. The length of the ravine between the two dams is 1,430 ft., and it was hoped to collect about 1,000,000 gallons of water at a time. Water collects there during the rainy season, and is then gradually conveyed as required in pipes to the eastern part of the country. On the western side of the ravine several groups of huts are seen, and a few rock caves have also been turned into habitations. The inhabitants of this cluster of huts number about 50, and they all sleep there on week days, to be ready in their fields early in the morning. On Sunday they generally go to Rabat where they have their proper dwelling houses.

Early last summer some of these peasants had a sudden rise of temperature, preceded by fits of shivering and followed by profuse perspiration. As they felt quite well soon after, medical aid was not immediately asked for, and it was only when children were attacked that the district medical officer was consulted. All the cases yielded readily to quinine treatment.

When we first visited the locality we saw two persons who had had a rigor about an hour before:

One, a man over 30, was lying in bed, hot and perspiring; the temperature in the mouth was 103° F. He had been ill twice during that week, and had taken a small dose of quinine. We made a good number of preparations from his blood, and Laveran's parasite was found in fair quantities.

The second patient was a woman of about 40, who was found sitting in the middle of a field, where she had been at work. She had been attacked there an hour before, and was not capable of moving a limb. That was her first attack, but nearly all the members of her family had been down with the fever. A good number of films were prepared from the blood of this woman, and the parasites were abundant.

On September 16th we visited once more the small community and found that other persons had been attacked, and that some of those who had been infected before had recurrences.

A young girl was found in bed with high fever, but she did not complain of having had fits of shivering. We took blood from the lobe of one of the ears, and the films showed the parasite in a fair quantity.

In all the cases the parasite was of the same type, globular, with the infected blood corpuscle hypertrophied.

We showed the preparation to Major Horrocks, R.A.M.C., and some films were sent to Professor Leishman, R.A.M.C., who kindly undertook to examine them for us. We all agreed that the cases were of benign tertian. Having satisfied ourselves as to the clinical symptoms and as to the presence of the parasite, it was natural that an attempt to find the mosquito that spread the disease should be made. We knew that so far nobody had found *Anophelides* in Malta. Indeed, the conditions of our land service are not very favourable to the breeding of those mosquitos. Experience, however, had shown elsewhere that mosquitos can readily adapt themselves to conditions which seem unfavourable to their species. The suspected ravine with its collection of rain water was not an unfavourable place for this species of mosquitos.

When we inspected the place in September the rainy season had not yet set in, but pools of water covered with green vegetation were numerous all along the bottom of the ravine. At the lower end of the same a considerable amount of water was collected, teeming with animal and vegetable life. At a superficial inspection on the first day of our visit we could not discover any larvae, but on the second day we went over the ground very carefully and succeeded in collecting both larvae and pupae. We were so lucky on that day that in one of the huts close by we found, by the help of an acetylene lamp, two female mosquitos in a dark corner. Although the characters of these insects were clear enough, we preferred to have an expert opinion on the same, and we therefore sent the mosquitos to Mr. F. V. Theobald, of the Zoological Department. That expert, with his usual kindness, was not long in informing us that the mosquitos sent to him were *Anopheles maculipennis*, a species common along the shores of the Mediterranean.

Our inquiry was then complete, and the only problem that could present itself was as to how the fever was brought to that distant part of the island. Undoubtedly the *Anopheles* have been among us from time immemorial, and surely the artificial lake at Wied-il-Kligha offered a good breeding ground.

The erection of the great military camp on Mtarfa hill, which overlooks and is not distant half a mile from the collection of water, brought with it the elements of infection. The regiments stationed there were bound to have in their ranks men who had contracted the fever in India, in Africa, or in Crete. The passage of the parasite from the infected men to the *Anopheles* in the valley below was simply a question of time. Last summer the circuit was closed and malaria in an epidemic form spread for the first time among the peasants of the Kligha district.

Fortunately, so far, the disease has not extended beyond its endemic focus, and considering that the collection of water in the ravine is artificial and fully under the control of the authorities, it is more than probable that the infection will not spread and will be also eventually eradicated.

* Read before the Malta and Mediterranean Branch.

The Berlin Municipality has made a grant of £4,000 to be applied towards the prevention of infantile diseases.