CLINICAL NOTES ON MALARIA.

BY JOHN LOVETT MORSE, A.M., M.D.,

Physician to Out-Patients at the Boston City Hospital and at the West End Nursery and Infants' Hospital.

DURING the past summer I have had the opportunity of observing 26 cases of malaria, most of them in the medical out-patient department of the Boston City Hospital. The blood of all cases in which malaria was suspected was examined microscopically for the presence of the plasmodium and the diagnosis never made unless it was found. Treatment was always based on the results of the microscopical examination.

The tertian parasite was found in 24, the infection being single in 13, double in 10, and single but later becoming double in one. The estivo-autumnal parasite was seen but once, in a man recently arrived from Panama. The character of the organism was undetermined in one case in which there were no chills and where only the hyaline form was seen. The quartan parasite was not met with.

There was a history of definite chills in all but two. Headache was a striking symptom. Thirteen of the cases with chills complained of a continuous headache, which was severe in ten and moderate in three. In one case there was a continuous severe headache for a month before the first chill. Headache was also severe and continuous in one of the two cases in which there were no chills.

The locality in which the cases originated is of some interest. Following the course of the Neponset River we find two cases in Dorchester and one in Mattapan. Following up the course of the Charles and its tributaries we find five along the course of Stony Brook, four being near Roxbury Crossing and one in Jamaica Plain; one each in Cambridge and Somerville, near Fresh Pond; one in Chestnut Hill; four in the Newtons; one in Waltham; three in Natick; and one in Franklin. As before noted, one case came from Panama. Three cases living in the South End and one in the South Cove gave no history of exposure elsewhere. One case occurred in a man who had just returned from a summer at Deer Island.

The method of administering quinine which was found most satisfactory in the tertian cases, is that based on the facts that the plasmodium malariae is most susceptible to the action of quinine just at the period of segmentation and relatively insusceptible while in the endo-globular stage. Segmentation occurs at or about the time of the paroxysm. Hence the quinine should be given shortly before it in order that it may be in solution in the blood when segmentation takes place. In this way a group of organisms may be almost entirely destroyed by a single dose. Where there are two groups, each one, of course, must be treated separately. It is usually advisable to give a second dose just before the time at which the next paroxysm would occur in order to destroy any organisms which may have escaped the first time. The value of the microscope in determining the nature and stage of the infection in cases where the symptoms are obscure and thus giving the clue to the time for treatment can hardly be overestimated. Most of the cases of malaria occurring in this vicinity will undoubtedly recover if quinine is given in any way or at any time. This method, however, seems the most rational one and has the advantage of requir-

ing but little quinine. I can see no justification for the so-called "intermittent" method of giving quinine recommended by Dr. F. H. Williams, as the life history of the malarial organism is 48° or 72° and not seven days. I have usually given fifteen or twenty grains for the first dose and ten grains for the second.

In the great majority of the cases no further treatment was necessary. The following case is an example. J. R., five years old, had single tertian fever in Natick the latter part of August, which was controlled by quinine. There was a recurrence of the paroxysms at 9.30 A. M., October 3d, 5th and 7th, several weeks after his removal from Natick. The blood showed a single group of the tertian parasite. He was given six grains of quinine at 9 A. M. on October 9th and 11th, that is to say, half an hour before the time at which the paroxysm should occur. There was no symptoms after the first dose and he has had no recurrence. In several cases, however, there was a continuance of general constitutional symptoms although there were no further paroxysms. In one of these the plasmodia persisted in the blood for thirty days, although quinine had been taken irregularly all the time. In another case they were demonstrated twenty-two days after the first paroxysm. This patient, however, had from the first taken his quinine three times daily. In three cases there was a recurrence after an interval of three or four weeks. In one, however, the type changed from single to double tertian and all were exposed to reinfection. The fact that in certain cases the plasmodia can be demonstrated in small numbers in the blood for some time after the paroxysms have ceased as the result of these single large doses and that they may in rare instances cause a recurrence of symptoms later, leads me to think that in some cases it is advisable to supplement them by further treatment. For this purpose I have usually given for ten days or a fortnight a dose of two or three grains at the times when the paroxysms would be expected to occur.

The period of incubation, in the only case in which it could be fixed, was five days. In a child of sixteen months the first paroxysm was represented by a convulsion, the later ones being chills. In a child of five the spleen, which at the beginning of treatment reached almost to the umbilicus, was not palpable after two weeks. The blood of the case of estivo-autumnal fever originating in Panama, the so-called "Chagres Fever," is interesting in that it contains a type of the organism almost never seen in cases originating in this vicinity. It shows hyaline forms; numerous small, round, pigmented forms within, without, and protruding from the corpuscles, the pigment being arranged in a circle about midway between centre and periphery; flagellated forms; and many semi-lunar forms, the pigment being arranged in a circle in the centre.

A NEW SURGICAL POLYCLINIC in connection with the Berlin University is to be opened shortly. Professor König is at its head and Professor Hildebrandt its chief surgeon.

THE BERLIN MEDICAL SOCIETY HONORS PASTEUR.—The Berlin Medical Society has subscribed a thousand francs toward the monument to Pasteur, which is to be erected at Dôle, his native town.

¹ Read before the '87 Medical Club, December 10, 1895.