Clinical Notes and Cases.

Twenty Cases of General Paralysis of the Insane Treated by Benign Tertian Malaria. By JAMES H. MURDOCH, M.B., Ch.B., Medical Officer, H.M. Prison, Brixton; late Assistant Medical Officer, Glasgow District Mental Hospital, Woodilee, Lenzie.

MUCH work has already been done in this subject, and while it would seem that the ultimate manner in which the malarial infection acts in bringing about improvement in general paralysis is, as yet, open to doubt, the fact remains that malaria has a definite value in the treatment of this disease.

The experience of many people who have carried out the treatment has been varied: some have obtained good results, and others have had little encouragement. Such being the case, it would appear to be unwise to draw too many conclusions from a small number of cases.

Owing to the difficulty in obtaining a supply of mosquitoes, the following cases were treated by inoculation with infected blood. The cases were at first unselected, but later on patients were treated as soon as possible after admission to hospital.

The technique decided on was as follows: After the diagnosis had been confirmed by examination of the cerebro-spinal fluid, the patient was given 5 c.c. of malarial blood (benign tertian) intramuscularly, at the lower border of the scapula. After allowing seven rigors, blood was taken from a vein and the next patient inoculated.

The malaria was stopped by 10-gr. doses of quinine bi-hydrochloride, thrice daily for four days. The cerebro-spinal fluid was examined from time to time after recovery from the malaria.

From the former average admission-rate it was calculated that by treating one patient at a time the same strain of malaria would be kept alive.

Of the 20 cases, 14 were paretics and 6 were tabo-paretics; both types, however, followed a similar clinical course.

The average interval from the time of first infection with syphilis to the onset of insanity was ten years, the longest being 24 years and the shortest 6 years.

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The average residence in hospital was sixteen months, the longest being four and a half years, the shortest one month before treatment.

The results obtained were as follows:

20 Cases treated.	Paretics.	Tabo-paretics.	Total.
Number of cases discharged	6	4	10
,, greatly improved	1	1	2
,, arrested?	1	0	1
,, progressed	2	0	2
,, died	4	1	5
Cerebro-spinal fluid improved	7	5	12

I do not propose to discuss the percentage results obtained because of the small number of cases treated, but will confine myself to several points of interest which arose in connection with some of them.

With regard to the patients themselves, it would appear to be a difficult matter to decide when it ceases to be worth while giving the treatment. One was discharged who had been insane for two and a half years and had had congestive seizures; another who improved greatly had lost control of the sphincters and was bed-ridden, but he was not discharged as he had been a mental defective from an early age, and had no friends. On the other hand, all the deaths occurred in advanced cases which were bed-ridden before treatment, and from those it would seem that heart disease, bed-sores and septic conditions generally are contra-indications in treatment.

Next, with regard to the course of the malaria, the average incubation period was twelve days, the longest being twenty-one days and the shortest five days. Only those rigors in which the temperature rose beyond 104° F. were counted.

The malaria was arrested in those cases in which the pulse failed to return to normal with the temperature, or rose beyond 160 per minute, or in which signs of cardiac weakness appeared.

Two cases had previously been given full courses of neo-salvarsan, but had gradually become worse; they improved after malaria, and were discharged.

On the other hand, one patient had been discharged from the army with malignant tertian malaria, and although parasites of benign tertian were present in his blood, he never had rigors, and the treatment had no effect on the course of his general paralysis.

All the patients were rather irritable and childish and required tactful nursing after the rigors had been stopped, and it is perhaps of interest to state that all were attended by female nurses.

One patient, who had improved greatly, sustained an intra-capsular fracture of the left femur by slipping on the polished floor. He developed a large bed-sore in the course of the treatment of the

fracture, but made a complete recovery from both conditions. Going back over the hospital records I found that two similar cases of fracture, who had not had malaria, died inside a month from the date of injury.

The most marked change in the cerebro-spinal fluid was in the cell-count, which came down to 5 at most in those cases which showed marked improvement. The globulin content was diminished slightly, but the Wassermann reaction and the colloidal gold curve remained unchanged.

In only one case was the cerebro-spinal fluid examined after discharge from hospital; in this case two years after discharge the cell-count was the only test that was normal, all the others being unchanged since the examination prior to discharge.

Of the cases who were discharged, one died six months after going home. He became depressed at certain financial difficulties with which he was faced. He was examined by a consultant physician who was aware of his history, but no physical signs of general paralysis of the insane were present. Two days later he threw himself over a banister, fractured a femur and sustained a head injury, and died eight days after. No *post-mortem* examination was carried out.

It is now three years since the first of those cases was treated and more than two and a half years since the first was discharged. All of the discharges have been at home at least a year, and all of them are following their ordinary occupations; moreover in a period of three years only 5 cases have died, excluding the one who died after discharge.

These remissions are of a considerably longer duration than natural remissions, and it seems reasonable to suppose that they would not have occurred had the patients not received malaria therapy.

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