Clinical and other Notes.

A REPORT ON THE TREATMENT OF ENTAMOEBA HISTOLYTICA "CARRIERS" WITH EMETINE BISMUTH IODIDE, GIVING A COMPARISON BETWEEN THE KERATIN-COATED TABLOIDS AND SALOL-COATED PILLS.

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(Late Biologist to the British Antarctic Expedition, 1910.)

AND

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A Report to the Medical Research Committee, from the Mont Dore Military Hospital, Bournemouth.

The treatment of the 104 cases dealt with in this report was carried out in a special ward set apart for the purpose.

The cases were under the care of one medical officer in order to keep the conditions of treatment as uniform as possible.

Both forms of the drug were given in doses of three grains per day for twelve consecutive days, without any additional treatment.

The tabloids and pills were given entire, as a full dose during breakfast.

We have considered a case to be cured when he has had at least six or seven negative tests over a period of not less than seven weeks from the termination of his course of treatment. The last one or two tests were made at the Barton Convalescent Depot. The great majority of the cases, however, had many more tests: some were examined almost daily and were under observation for nearly three months after the end of treatment.

First Course of Treatment.

The number of men treated with one course of the keratin-coated tabloids supplied by Burroughs Wellcome and Co. was seventy-nine, and the number of men who were given one course of salol-coated pills prepared by Allen and Hanburys was twenty-five.

We have found it advisable to divide these two sets of men into those who had injections of emetine hydrochloride before entering hospital and those who did not receive this treatment.

The results are as follows:

Cases without Emetine Injections.—Forty-five men were given one course of the keratin-coated tabloids and twenty-nine were cured, i.e., 64·5 per cent.

Seventeen men were given one course of the salol-coated pills and twelve men were cured, i.e., seventy per cent.
Cases with Emetine Injections.—Thirty-four men were given one course of the keratin-coated tabloids and twelve were cured, i.e., thirty-five per cent.

Eight men were given one course of the salol-coated pills and five were cured, i.e., sixty-two per cent.

Second Course of Treatment.

Twenty-four men who had relapsed after one course of the keratin-coated tabloids were given a second course of the same form of the drug and four were cured, i.e., 16.6 per cent.

Fourteen men who had relapsed after two or three courses of the keratin-coated tabloids were treated with one course of the salol-coated pills and four were cured, i.e., 28.5 per cent.

Effect of the Time Interval between the Onset of Disease and Treatment.

The object of this part of the inquiry was to ascertain whether those cases which relapsed after treatment could be shown to be "carriers" of longer standing, in whom E. histolytica had become better established and consequently harder to cure. In order to make certain, as far as possible, that the onset of the disease referred to was that of amoebic dysentery, only those patients were included under this section whose blood failed to agglutinate B. dysenteriae Shiga and B. dysenteriae Flexner.

Cases without Emetine Injections.—Out of nineteen men who were cured by emetine bismuth iodide seven (36.8 per cent) had an interval of over twenty weeks between the date of onset of their dysentery symptoms and the date on which they received emetine bismuth iodide treatment. The average interval for the nineteen cases was nineteen weeks.

Out of fourteen men who relapsed after treatment with emetine bismuth iodide eight (50.7 per cent) had an interval of over twenty weeks between the date of onset and treatment. The average interval for the fourteen cases was twenty-two weeks.

Cases with Emetine Injections.—Out of twelve men who were cured by emetine bismuth iodide treatment ten (80.3 per cent) had an interval of over twenty weeks between dates of onset and treatment. The average interval for the twelve cases was twenty-nine weeks.

Out of fourteen men who relapsed after treatment with emetine bismuth iodide eleven (78.5 per cent) had an interval of over twenty weeks between the dates of onset and treatment. The average interval of the fourteen cases was forty-two weeks.

Vomiting.

Out of forty-six cases cured by the keratin-coated tabloids forty vomited during treatment, i.e., eighty-seven per cent.

The total number of days on which the forty vomited was 285. The
average number of vomiting days for those men who vomited gives a convenient co-efficient for purposes of comparison, i.e., seven.

Out of twenty-one cases cured by the salol pills fourteen vomited during treatment, i.e., sixty-six per cent.

The fourteen who vomited had fifty-three vomiting days, i.e., vomiting co-efficient 3.7.

Out of forty-five cases who relapsed after the keratin-coated tabloids, thirty-seven vomited during treatment, i.e., eighty-two per cent.

The thirty-seven who vomited had 333 vomiting days, i.e., vomiting co-efficient 9.

Out of eighteen cases who relapsed after the salol-coated pills, fourteen vomited during treatment, i.e., seventy-eight per cent.

The fourteen who vomited had sixty-three vomiting days, i.e., vomiting co-efficient 4.5.

**Loss of Weight.**

Out of forty-six men cured by keratin-coated tabloids twenty-four lost weight, i.e., fifty-two percent.

Out of twenty-one men cured by salol-coated pills seven lost weight, i.e., thirty-three per cent.

Out of forty-five men who relapsed after keratin-coated tabloids eighteen lost weight, i.e., forty per cent.

Out of ten cases who relapsed after salol-coated pills five lost weight, i.e., fifty per cent.

**EFFECT OF AGE ON CURATIVE RESULTS.**

The average age of thirty-eight cases cured by keratin-coated tabloids was 27.6 years.

Eleven men out of the thirty-eight were over thirty years of age.

The average of thirty-eight cases which relapsed after keratin-coated tabloids was 28.9 years.

Eleven men out of the thirty-eight were over thirty years of age.

The average age of seventeen cases cured by salol-coated pills was 28.7 years.

Four of the seventeen were over thirty years of age.

The average age of seventeen cases which relapsed after salol-coated pills was 28.4 years.

Five of the seventeen were over thirty years of age.

**EFFECT OF AGE ON VOMITING.**

Thirty-six men under twenty-five years treated with keratin-coated tabloids had 271 vomiting days, i.e., vomiting co-efficient 7.5.

Twenty-six men over thirty years treated with the same tabloids had 157 vomiting days, i.e., vomiting co-efficient six.

Seven men over forty years treated with the same tabloids had twenty-two vomiting days, i.e., vomiting co-efficient 3.1.
CONCLUSIONS.

The conclusions which we think may be drawn from the foregoing facts are as follows:—

(1) (a) That "carriers" of *E. histolytica* who had not had any injections of emetine hydrochloride were cured to the extent of seventy-eight per cent by two courses of the salol-coated emetine bismuth iodide pills. (b) In the case of men who had had emetine injections 72-8 per cent were cured by two courses of the salol-coated pills. (c) In the case of men who had not had emetine injections seventy per cent were cured by two courses of the keratin-coated tabloids. (d) In the case of men who had had emetine injections 45-4 per cent were cured by two courses of the keratin-coated tabloids.

The difference between the percentages in (a) and (b) are within the range of experimental error and need not be considered. But in (c) and (d) the difference is too great to be ignored.

This difference may be due to variation in the quality of the keratin-coated tabloids, but such a defect would be common to both cases which had received injections of emetine and those which had not.

It is generally admitted that certain "carriers" of *E. histolytica* are not cured by emetine in any form and it may be, as Mr. Dobell suggests, that these cases became segregated in (d). It seems possible that the difference on the two percentages may be due to the injections of emetine rendering the "carriers" less liable to be cured by emetine bismuth iodide.

For comparisons with the above percentages of cures by a maximum of seventy-two grains of emetine bismuth iodide carried out in the special ward, we give the number and percentage of cures in the other wards of this hospital.

The number of grains of emetine bismuth iodide which these cases received varied from 36 to 200. A case was regarded as cured after not less than five negative examinations over a period of not less than five weeks after the end of treatment. The last test was made at the Barton Convalescent Depot. Out of 160 cases treated 142 were cured, i.e., 88.7 per cent.

(2) There is no evidence that the length of time between the dates of onset of dysentery symptoms and the treatment has any effect upon the chances of cure by emetine bismuth iodide.

(3) There is no ground for the belief that the vomiting diminishes the chances of cure by the emetine bismuth iodide treatment. There is nearly as much vomiting among the cases which are cured as among those which relapse.

(4) The age of the patient has no effect upon the chance of cure by the drug. But there is evidence to show that men over forty years of age vomit less while undergoing treatment.
Clinical and other Notes

(5) The salol-coated pills are a distinct improvement upon the keratin-coated tabloids from a curative point of view. They also cause less vomiting and loss of weight.

In conclusion we express our hearty thanks to Temporary Honorary Captain A. C. Inman, R.A.M.C., Mr. W. O. Redman King and Mr. A. G. Thacker for making some of the examinations for us and for help in many ways.

To Lieutenant-Colonel T. H. F. Clarkson, R.A.M.C., Officer Commanding, Mont Dore Military Hospital, Bournemouth, we are indebted for permission to publish this report.

DETECTION AND TREATMENT WITH EMETINE BISMUTH IODIDE OF AMEobic DYSentery CARRIERS AMONG CASES OF IRRITABLE HEART.

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AND

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(Report to the Medical Research Committee.)

Amebic dysentery as a direct or aggravating cause of irritable heart was found amongst soldiers returned from the Mediterranean Force [1]. It was therefore considered of importance in dealing with this condition to determine the number of cases who were carriers, and to attempt to cure them. From October, 1916, to February, 1917, we examined the stools of all cases from the Mediterranean Force who were admitted to the Hampstead Military Hospital suffering from irritable heart. No selection of the men was made in so far as the presence or absence of a history of dysentery was concerned. In all sixty-five cases have been examined, of which twenty-five had a definite history of dysentery.

INFECTIONS.

The microscopic examinations of the stools were made in the usual way, and we aimed at giving each man at least six careful examinations before discharging him as uninfected. How far we were able to carry this out the following figures will show:

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This work was done at the Hampstead Military Hospital. The treatments were carried out by one of us (J.C.M.) and the examinations made by the other (M.W.J.).

* This was done at the suggestion of Mr. Clifford Dobell.