

A note on external applications of creasote in the treatment of malarial intermittent fevers / by Leonard Rogers.

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A NOTE ON EXTERNAL APPLICATIONS OF
CREASOTE IN THE TREATMENT OF
MALARIAL INTERMITTENT FEVERS

Leonard ROGERS

Indian Medical Gazette, 1896.



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kine examined her 24 hours after the operations, and finding she had no fever, told her to show her side which she said was swollen and painful. Unfortunately for her she showed the *right* side instead of the left, and her deceit was discovered (the first inoculation is always given on the left side). Although she limped in her walk, and feigned pain on pressure, she had to acknowledge that she had made a mistake. Supposing this question had arisen a week later, when the local symptoms would have disappeared, there would have been no evidence by which to test her statement, except her name in the register, about which there was some question.

A second case to the same effect:—Dr. Haffkine had just finished the reinoculations on a certain garden in Cachar; a few days later it was authentically reported that a coolie belonging to the garden who had been *twice* operated upon had died of cholera. The manager was absent from the garden when the report was made, but on his return he tried to find the man's name in the inoculation register, and failing, made personal enquiries from which it appeared that the coolie had never been inoculated, but that his relations had spread the report hoping to gain some advantage, and their word had been taken as correct by the hospital assistant who reported it. Had the man been permanently marked, it would have lessened the risk of such a mistake, and it shows how essential it is where the results of the inoculations are to be watched, to keep accurate registers of the inoculated, in the absence of a more permanent record.

The length of time which may lapse between the first and second inoculations has not yet been decided. On two gardens in South Sylhet, the coolies were reinoculated after a lapse of six to seven months without unusually severe effects. Dr. Haffkine when testing the microbe to be used for the second vaccine in Cachar, inoculated himself after an interval of two years with about three times the ordinary dose ($\frac{1}{2}$ water). He had, I think, been inoculated twice previously; his temperature taken at the time of the operation was 96.8°F ., and 12 hours later it had risen to 101.4° or 4.6° of fever. The swelling at the seat of inoculation after an interval of a week or ten days, reappeared as a circumscribed painful lump, which was gradually absorbed.

The Microbes.—The microbes for the first vaccine were of the same race as had been attenuated in Europe some eight years previously; the cultures were characteristic, and it showed no tendency to degenerate. It was not, however, till the beginning of April that a microbe suitable for the second vaccine was found; the one which had been in use hitherto had shown signs of involution, and Dr. Haffkine had abandoned it hoping to find another which would be healthy, and more suitable for the local operations than one of foreign origin. *Post-mortem* examinations from one cause or

another were rarely made, and most of the attempts to isolate the microbe were made from the dejecta. Commas from three different sources were isolated:—

1. *The Kurkooi microbe* was taken from the jejunum of a woman who died of what was described by Dr. Powell of Kallein as cholera of a virulent type; under the microscope it was small but characteristic. As a test of its virulence $\frac{1}{10}$ of an agar culture of 24 hours' growth was injected into the peritoneum of a guinea-pig weighing between 350 to 400 grammes. The animal did not die.

2. *The Silchar microbe* was isolated from a very fæculent stool two days' old taken from a man who did not die. The test guinea-pig weighed 448 grammes; $\frac{1}{10}$ of a tube was injected into the peritoneal cavity, and the animal died in 14 hours.

3. A microbe was isolated from a case of cholera at Badarpur in a child who recovered. It was discarded, as not likely to be strong.

The choice of a microbe for the second vaccine lay between Nos. 1 and 2. The former had certain advantages, and it had been strongly recommended by Dr. Powell as a virulent microbe, but the test dose had failed to kill a guinea-pig. The Silchar microbe which had proved fatal was therefore chosen, and three preliminary passages were made to raise it to the "fixed strength." Dr. Haffkine inoculated himself with a culture from the second passage, and the Kurkooi, Digobar and Ilathall coolies were inoculated with cultures from the third passage. As the microscopical appearance of this microbe was not satisfactory it was abandoned in favour of the Kurkooi microbe, which was used for all the subsequent operations.

Dr. Haffkine isolated these microbes without the aid of peptone. Small quantities of cholera dejecta were placed in cups (previously boiled and covered with paper), diluted with an equal quantity of water, and put aside in a warm place; the microbe was found in colonies in the surface film in from 10 to 24 hours.

A NOTE ON EXTERNAL APPLICATIONS OF CREASOTE IN THE TREATMENT OF MALARIAL INTERMITTENT FEVERS.*

BY LEONARD ROGERS, M.B., B.S. (LOND.), F.R.C.S. (ENG.),
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A PAPER by Dr. Carter† on the antipyretic effect of external applications of creasote or guaiacol first suggested to me their use in the treatment of cases of intermittent fevers in which the temperature is high. Their action in producing free perspiration and at the same

* Towards the expenses of this research a grant was made by the British Medical Association on the recommendation of the Scientific Grants Committee of the Association.

† *British Medical Journal*, 1894, Vol. II, page 6.

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time lowering the body heat seemed to mark them out as ideal drugs in such cases, and held out hopes of their being able to shorten the duration of a paroxysm of fever. In this expectation I have not been disappointed in the few cases I have tried this treatment during the last few months, and although I have accurate notes of only eight cases, the beneficial action has been so uniform that I think it deserved a wider trial than I am likely to be able to give it, in order to determine in what cases its action is most valuable, and therefore I wish briefly to draw attention to its use.

The dose used was 15 minims of creasote rubbed into the axilla and covered up with cotton wool. In each case the temperature was taken twice with an interval of 15 minutes in order to ascertain whether the temperature was falling or not at the time, and it has only been used when this has been stationary or rising, so that any marked fall occurring within an hour or two of its administration, and accompanied by free perspiration, may fairly be attributed to the known physiological action of the drug.

A brief analysis of the cases in which it was used will serve best to illustrate its action. It was only used in cases in which the temperature varied between 103.2 and 104.4°F. In six out of eight cases it was over 104°F. and stationary at the time the drug was applied. In five cases free perspiration came on within three-quarters of an hour of its use, and in the other three, within two hours. The usual time is from half to three-quarters of an hour. In seven cases the temperature had fallen from 0.8° to 2.2°F. three-quarters of an hour after the application, the average fall being 1.6°F. and after one and three-quarter hours the average fall was 2.3°F. After four hours the temperature had fallen from 1.8° to 4.2°F., or an average of 3°F. for the eight cases. In one case there was but little fall until the third hour when it fell 3.6°F. in one hour, the perspiration not having come on until nearly two hours after the use of the drug in this instance. In half the cases there was no subsequent rise during the paroxysm treated, but a more gradual fall to normal, and in only one case was there an after rise of more than 1°F. In this case, one of irregular remittent fever, the temperature had risen 3°F. eight hours after the use of the drug, but was still 1.2° below the original height; and the break had caused great temporary alleviation of suffering. In some of the cases, in previous or subsequent paroxysms of the fever, which were not treated with creasote the temperature had remained high for eight or 12 hours, a much longer period than when the creasote was administered, which seems to show that the severity and duration of the attacks were lessened by the use of the drug.

The reduction of temperature, however, is not the only advantage, as in every case with the event of the perspiration and the accompanying

fall of temperature the general symptoms, and especially the severe headache, were markedly lessened, and the patients stated that they were greatly relieved and made quite comfortable. The uniformity of this fortunate occurrence was very remarkable and leads me to think that the drug is likely to prove of great service in the treatment of intermittent fevers with high temperatures. Its superiority over the ordinary diaphoretics, such as acetate of ammonia, is very marked. I would also urge that it has decided advantages over the antipyrin class of drugs, as in my hands it has had quite as good, if not a better, effect as they have, both in lowering the temperature and in relieving the headache, while it has not the disadvantages of depressing the heart's action, and, what is of more importance in the intermittent class of fevers, of tending to reduce the number of the red corpuscles of the blood,* which effect being added to the destructive action of the malarial parasite, renders the resulting anæmia and weakness greater than it would be if antipyrin, etc., had not been used. I should add that in five out of seven cases in which I examined the blood during the progress of the fever, I found the malarial parasites present, and all but one were typical cases of quotidian ague.

I have also used the drug in a case of a 21-day continued fever, which was neither typhoid or malarial in the sense of being caused by Laveran's organisms. On two occasions it afforded considerable relief, once being followed by refreshing sleep, although it only lowered the temperature about one degree, but on a third trial it failed either to lower the temperature or to relieve the headache, although followed by free perspiration. The subsequent course of the temperature chart, however, gave reason to believe that its use did for a time prevent a further rise of the fever.

This method of treatment is, I think, worthy of a careful trial as an antipyretic in remittent and continued fevers, while I feel sure it will prove of great service in shortening and lessening the severity of the paroxysms of intermittent fevers, while the further development of the organisms, when present, is being prevented by the use of quinine.

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BY HAYMAN THORNHILL, M.B.,
Colombo, Ceylon.

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EACH individual therefore harbouring even only a few of these parasites is a source of danger to himself and to others, and it is only a question of time and continued residence in the infected area where he swallowed the few parasites that are now producing no symptoms, as

* Hare's Therapeutics, page 61.



