Correspondence.

THE ANTI-MALARIA FAILURE AT MIAN MIR.

TO THE EDITOR OF THE "JOURNAL OF THE ROYAL ARMY MEDICAL CORPS."

Sir,—I have seen two notices in your Journal regarding the anti-malaria experiments at Mian Mir, in which those experiments are evidently taken very largely on trust as being quite sound, and as suggesting that similar operations made elsewhere are not reliable. I trust that you will allow me to point out to your readers that the work of James and Christophers at Mian Mir is not likely to pass without very close criticism from those who are practically acquainted with this subject, and to indicate three of those points on which I think there will be some discussion.

On page 84 of your current issue, the Mian Mir operations are spoken of as "this large scale experiment," but I may point out that the area treated was only between three and four square miles, being merely a small portion of the large military cantonment of Mian Mir. Moreover, according to the report of Capt. James, I.M.S., the whole operations within this area during the year 1892 cost only 7,216 rupees, and of these 5,364 rupees were spent on bricking a single water channel, leaving the sum of only 1,852 rupees (about £140) for the actual cost of the remaining operations. Now it should be remembered that the similar operations at Lagos are costing something like £10,000 per annum, while at Ismailia during last year they cost over £5,000. At Klang the cost appears to have been between £3,000 and £4,000, and at Port Swettenham more than double that amount. At Freetown, Sierra Leone, Dr. Logan Taylor spent over £1,000 for the preliminary drainage which he was able to effect. The expenditure at Mian Mir therefore scarcely appears to justify the work being called a large scale experiment. What the expenditure was during last year it is impossible to say, because, though such a thing can scarcely be believed in a practical sanitary report, Lieut. Christophers does not state it.

The method adopted by James and Christophers for estimating changes in the number of adult mosquitoes present consists merely in giving their personal impressions on the point. It is true that this was done by myself as regards Sierra Leone; but while I was unable to adopt more accurate methods, owing to my short stay there, we should remark that Capt. James and Lieut. Christophers have now been continuously studying this subject for years and should therefore have been able to devise some better gauge for mosquitoes than such an elementary one as they adopted. Even if they had been good enough to have stated the actual numbers of mosquitoes caught, and of occasions on which they were looked for, or to have attempted some kind of numerical estimate, however rough, it would at least have given us some confidence in the results which they claim to have obtained. Unfortunately I have searched their reports in vain for any accurate numerical accounts of this kind.

Their method of determining the change in the amount of malaria present is equally vague. Certainly the examination of native children
for parasites is a good way of arriving at an estimate; but this method
must be worked with the greatest thoroughness in order to reach any­
thing like accurate results. Not only should a large number of children
be examined, but their ages should be noted, as well as the number of
preparations of blood taken and examined from each. Moreover, an
elementary knowledge of statistics shows us that in all such cases efforts
must be made to determine the mean errors of observation. Instead of
all this, we often find in the reports of James and Christophers nothing
but the bare percentages, without any actuals regarding the number of
children tested and the number of specimens taken. In my opinion such
figures are scarcely worth the paper on which they are written. In short,
the whole work appears to me to have been of a very trifling nature and
completely indecisive as to results, one way or another.

I have never been to Mian Mir, but judging from descriptions of it
I should think it would cost well over £10,000 or £20,000 to clear it of
malaria, and moreover, the reduction in the disease would probably take
several years before it would be appreciable by such rough methods as
James and Christophers appear to have adopted. Lieut. Christopher's
conclusion that "The destruction of Anopheles within an area by attack­
ing their breeding-places is extremely difficult," is really meaningless,
owing to the inexactness of the word difficult. What may be difficult for
an expenditure of a few hundred pounds might be easily effected at an
adequate outlay. Malaria at Mian Mir probably cost Government in one
way and another some £2,000 or £3,000 a year, representing a capital
of £50,000 to £80,000; and it is such a sum—and not a few hundred
pounds—which Government would be justified in spending on the extir­
ipation of the disease in that cantonment, on economical grounds alone.
It is to be hoped that Government will continue the work on a more
practical basis.

Liverpool,
July 7, 1904.

Yours faithfully,
   RONALD ROSS.
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