

July 8, 1941

Dear Dr Peters,

Thanks for your letter. I am here really any time, if you care to take a bus over, either sending the data in advance or bringing it with you. The particular analysis I have in mind will not, I expect, alter any conclusions; but I hope to get my head clearer by its means as to how more complicated cases can be treated.

Using your rough costings and the analysis as it stands, it appears that one might gain appreciably by sampling the sheep six times instead of three, and taking only one count per sheep per occasion. With four or five sheep in each set of parallels, this would, I imagine, make nearly the same laboratory work as is now done, with higher accuracy in the comparisons. Of course it may be that, on increasing the number of sampling occasions, one does not get the full increase in accuracy expected if successive occasions come to be so close together that the results are not independent; but I imagine you are still far from this limitation.

Your parallel counts agreed excellently with the ideal Poisson variance, so that the precision of a single count depends only on the total number of eggs counted. It is, therefore, only a matter of laboratory convenience whether you count one large area or several small ones, e.g., fields chosen at random from a single

slide or a set of slides. I imagine also that the actual labour of counting is nearly equal to the number of eggs counted, so there is no room for gain by any rearrangement here. I had expected less reasonable results from calculation, and am rather surprised that so reasonable a figure as six occasions should have emerged. This should be fairly accurate, as it is based on the larger contributions to the variance.

Yours sincerely,