Dear Fisher,

I have been very much interested in your section on the analysis of covariance in your 4th edition of which we have 3 copies at the lab here. These is one point I feel a little doubtful about. Supposing, instead of one set of preliminary yields you have two or more, how can you say 2 numbers 1 & 2, say a year apart, used 1 & 2, say a year apart, your can get the covariance of your experimental yields & also of your experimental yields, but does the covariance of 1 & 2 affect the question at all? Also do you judge the efficacy of the covariance method entirely on reduction of
Suppose if there is no significant co-variance I would have the usual distribution would I not? My Snakehead paper will be out shortly -- the 2nd proof has gone back.

I have been designing and making a sampling machine during the last few days; it is a drum with pieces of wood projecting inwards as in sketch on left. I want to try to find a criterion to distinguish between a compound frequency distribution composed of 2 or more distributions of narrow spread X 2.
unmodal distribution giving chance modes in random samples. The former condition should show consistent modes, the latter inconsistent, independently of the proportions in which the subgroups are represented. This is most important from our point of view, but I don't at present see how to tackle it. I shall have to set a kind of distribution of chance modes I suppose.

Another thing I am interested in is the distinguishing establishment of significant differences.
in plankton distribution at different stations, you will remember that we found that the distribution at one station over a 24-hour period fitted well a negative binomial.
In the distribution of the difference between two means of numbers, fitting the negative binomial known? We assumed that the means fitted Pearson Type III.
Does the difference between means of samples also fit a Pearson Type III? If so, what parameters did we need something of this sort to test whether area differences in plankton are real or could be caused by a 24-hour change of tide and movement of fish?
I have said that I am making a sampling machine for sampling from queen populations. Is there any sound way of doing this, or from tables? There is only one other question I wish to ask at the moment. How does the negative binomial arise in simple probability cases - drawing, tossing coins etc. I should be more contented if I could understand the theoretical basis of a firm theory of probability.
I'm afraid I've asked a lot of questions but I know if you can't answer them, even else can, but I hope I'm not worrying you too much.

I want to use the covariance method to decide fixed for instance of salinity over a large area is significantly different from one year to another. These will be certain plots blank if the plot in preliminary observations is not black but is or vice versa. Because it is best to omit it altogether as covariance is undetermined as covariance is undetermined as covariance is undetermined as covariance is undetermined as covariance is undetermined.

I should think the best way to treat non-orthogonal cases would be by the approximative method given in your lecture paper. Do you agree? Kind regards to friends of both yours. Sincerely, H.M. Wollaston.