May 11, 1939

Dear Todd,

I have just read your letter of May 10th on the problem of growth rates estimated from, say, four different plants grown in parallel at the same temperature.

Now, it seems to me that the precision with which the growth is estimated must be based on the agreement between the estimates obtained from the different plants, and not, as it would be by your method, on the agreement of each plant severally with the best fitting straight line. I imagine, in fact, that probably, even when the deviations from straight line are properly regarded as error, the different plants may yet give somewhat different growth-rates.

This consideration really simplifies the statistical treatment, for, setting aside the error variance \( \sigma \) as being irrelevant, or at least being affected by only part of the real error, to which differences from plant to plant also contribute, you merely have the \( \lambda \) values from as many plants as have been tested at the temperature concerned. To treat these as a normal sample in comparing them with other temperatures, that is, to give them equal weight irrespective
of the deviations in their growth curves will, I am sure, be found satisfactory for the kind of material you are dealing with.

I hope to see you at the Genetical Congress, both in London and in Edinburgh. Thanks for telling me of your class's reaction to the passage from the Genetical Theory.

Yours sincerely,