

OXFORD
SB147.

5, APSLEY ROAD,
OXFORD.

Wednesday.
[early March 1940]!
J.K.R.

My dear Fisher,

Thank you for your
exceedingly helpful letter. Please
forgive me for not answering by
return. I have now caught my
father's influenza (my second
dose since Christmas!), so we
are both ill here together. Yesterday
I combined a high temperature with
such a shockingly lead-ache that
I felt too stupid to write.

In regard to the points

which you raise, the force of which
I fully see :-

Of course I realized that
a title in some official form would
probably be required. Would you be
so kind as to alter it to the
correct wording in your copy. The
title which you supply brings out the
importance of the occasion: I do much
felt the honour of being asked to
give the lecture, especially at that
time.

I fully see the importance
of a few paragraphs at the end

31

bringing out the more important-genealogical,
and other, conclusions. Your criticism
that one comes too suddenly upon the
Summary is quite justified. So
tell the truth I had such a
conclusion in mind; but, when I
found I had already exceeded 10,000
words before reaching the Summary,
I felt I ought to cut things
down. It is very nice to have
the chance of adding this. I will
think it out and send some
paragraphs tomorrow.

I do so much like your

plan for the arrangement of the histograms. It is really rather striking to see the troughs moving in opposite directions in the two selected lines. Let me know if they need redrawing for this purpose: but it may well be that the reductions, which will be necessary, can be done all right at the photographing.

I think the stars a grand plan. I am in your hands in the matter, but my own feeling is this: bring wholly your own idea, and send a

OXFORD
 88147.

5, APSLEY ROAD,
 OXFORD.

Simple and effective plan (The use of which may be extended much beyond the present paper), it would be well to have a short explanation of them written, and signed, by yourself (if you would kindly do so). This might be added appropriately as an appendix.

The appendix could simply be by you or, if you prefer, could start with a note by myself in the following terms (adjusted as you think):-

'When I supplied the histograms

illustrating this paper they were not
marked with stars to show the
approximate points of divergence between
the genotypes. This useful addition
was suggested by Prof. Fisher, who
has kindly contributed the following
note upon the calculation of their
position:

About the plate, which is
going to be such a fine addition to
the paper. I will do as you suggest
and plan it out, having regard to
the size and shape of the Annals,
so as to make my intentions clear.
This I will do tomorrow if (as

(quite expert) I can get to the Museum
 than. As I still have a limpature,
 I have not to go out today. I
 will then either supply the insects,
 or get a painting made, which
 even the Press require for their process.

That I feel is essential
 is to have the 8 colour-steps used
 in the Selection work. If it can
 be managed, I should like also
 to have the 2 forms of Papilio
aricathes producing the white
 spot by flavone and pterin pigments
 respectively, and the normal and
 melanic forms of my Boarmia

repandata. Of course this would mean reduction considerably below life-size (with the gossulariata only, they would be life-size).

Personally I do not feel that there is any considerable objection to having the figures reduced.

Now there is the question of the plan of the selection experiment. Having in mind your own work, I had in fact intended to use a procedure involving the back-cross much as you outline in your letter. I was dissuaded ~~from~~ for technical reasons. I should like to

know whether, in the circumstances,
you feel I was justified.

Your own scheme states
the lightest individuals are selected
from the homozygous mating
grossulariata x grossulariata ($D \times D$)
and the back-cross mating ($L D \times D$)
---'.

Now here at once
you meet my difficulty. In
unselected material, you cannot
pick the lightest grossulariata!
Except for very occasional specimens
in class 2, they are all alike. (The

Effect of 'modifiers' is so very small in homozygous prostrariata: only a very few possessing the greatest collection of the + type become recognizably darker. Otherwise they are pure white anyway, so that the - type is without visible effect.

You will notice that even at the end of + selection, homozygous prostrariata never get pushed beyond the pale cream of class 2).

When I attempt a - selection mating of palest heterozygote X homozygous prostrariata, I do not

know that I am using a homozygote
 with - type modifiers. The only
 thing I can say is that (not
 having chosen one of the rare
 homozygotes of class 2), it at
 least has not the most extreme
 tendency. In this case, was
 it sensible to use $hal \times hal$, in
 which it can be seen that both
 parents possess pale modifiers?

I see that I appear to have
 made a mistake in labelling one
 of the families represented in a

histogram. I will put this right-
 when I can get to the data in
 the Museum tomorrow.

I am so sorry to hear of your
 laryngitis. I do hope you are
 getting on all right. It is such
 a wretched thing.

Thank you for all your kind help,

Yours sincerely,
E. B. M.