13 February 1943

Dear Dunn,

I was really immensely interested in the proof you sent me of your paper for the "American Naturalist". Among other things, what you say about the nearly recessive character of both the lethal "dominants", Yellow and Anaemia, is most striking. I am now working a little on the Agouti series with a view to making up a museum exhibit of their manifestation on a uniform genetic background, and the darkening of the Yellow when outcrossed has been very striking, though with young mice the segregation remained clear until I brought in the Umbrous factor, ~~which I had not thought of as~~ do know this to be common in the wild. A darkening factor I have also been working with in the dominant Pied Anaemic stocks is, I suppose, a wild gene.

With respect to the main controversy on dominance-theory, I agree with what I think is your final conclusion, that the question of the specificity of modifiers must depend simply on the developmental processes by which different mutant genes bring their effects about. If two different mutations modify the developmental processes alike from an early stage, I should expect as much as Muller should do that the same modifiers would influence them both, but I doubt much if any concrete meaning can be attached to such a phrase as "modifiers

which tend to enhance normal development", for considering a modifier and its allelomorph which affect the visible pigmentation on a heterozygote for Black and Brown, it seems impossible to say which allelomorph of the modifier favours normal development until it has been decided whether Black Agouti or Brown Agouti is to be the prevalent wild form.

In fact it seems to me that you must confront the modifier-allelomorphs with the wild population including its rare mutant types, before Natural Selection can choose between the modifying alternatives.

What my experiments demonstrate is that in my Galton Laboratory stocks there existed before $\frac{Sd}{+}$ was introduced both the allelomorphs which tended to make it recessive and those which tended to make it dominant in a number of the underlying factors available, On Fuller's view or Plunkett's I think that my stocks, and indeed your Irish albinos and Danforth's before you, should have contained only the allelomorphs of those factors which favour a long tail in the heterozygote, for these must be those which are meant by "genes tending to enhance normal development".

Yours sincerely,