7 June 1943

My dear Dunn,

Thanks for your letter of April 22nd. I suppose there are genes which tend to enhance normal development in the sense that there are trains, ships, and buses which tend to get one nearer to New York. However, I still feel that, whereas a Londoner might want a West-bound ship for the purpose, a Californian would need an East-bound train: that is to say, you cannot say of any gene-substitution that it tends to enhance normal development unless you know in which direction modification is needed.

You take my example of Black-Brown and agree with me that that the gene of the pair which enhances normal development will depend on whether nature requires a golden or a cinnamon agouti. However, you slip away from this good and solid basis of agreement on an issue which I submit is really quite irrelevant, namely that the effects of genes which are not obvious to our senses are often more important than those which are; but my argument about Black-Brown did not at any step require that the gene-substitution should be a familiar one as Black-Brown is, or an obvious one to the human eye. It was concerned with the

fact that the phrase, "gene which enhances normal development" will apply to one gene or the other of any pair, according to the direction in which modification happens to be locally or temporarily required -- and this might fluctuate constantly throughout the past history of almost any gene segregating in almost any species, such as the modifiers which make *vg* a recessive.

After due deliberation, Cambridge decided to fill the Chair of Genetics, vacated a year or two ago by Punnett's retirement, and want me to go there. There is nothing I should like better if the University will provide the means for rebuilding the Department, which has been in the course of time very much let down. I think they will support my plans very cordially, but I do not like to speak too assuredly before difficulties are explored.

As you may guess, I shall particularly want to develop work with mice, and in a few years perhaps we shall be able to exchange stocks tolerably freely.

By the way, if you have glanced at Grüneberg's recent book, I hope you will not think that the discussion of *Umbrous* has in any sense emanated from me. He seems to have confused this whole question completely. This is partly because he overlooks that Umbrous is the name of a genetic factor given to it by its discoverer, whereas Sable is a fanciers' term for a phenotype, and though I think Sable effects should not be too difficult to analyse ~~if necessary~~ genetically, it is [illegible] for him to speak of Sable + Umbrous genes vaguely. ~~whereas~~ when Umbrous with its characteristic effect on

heterozygous Agouti is a very distinctive gene. I had plenty of it to see at University College when he was there working with Haldane, so I cannot explain his extraordinary statement that Umbrous has a slight sable effect on Yellow. Even on clear Yellows, in my experience, its effect is very marked, so that anyone who had not seen it might well misclassify Yellows in the nest, orindeed fail to recognise them later.

What I want to do is to set up stock lines, which shall be both inbred and constantly segregating, each in three or four factors, so as to exhibit the true effects of single gene-substitutions In my present small colony at Rothamsted I have not all the genes I shall want ultimately, but I have material to make a fair start. Do you happen to know, by the way, whether Roberts' Pink-eye or Pallid has ever been known to occur in, or come from, England or whether it is probably confined at present to the United States.

Yours sincerely,