

December 5, 1942

My dear Henry,

Many thanks for your letter. From what I have heard everyone enjoyed the Joint Meeting, and I think you will be glad to hear this, because it owed so much to your being available, in close touch with both Societies.

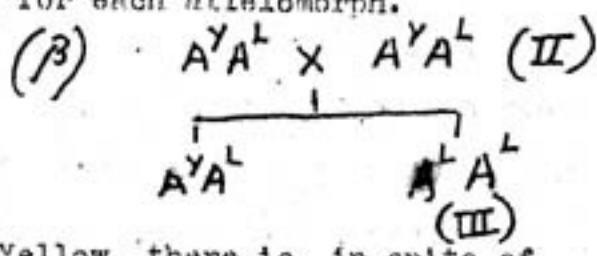
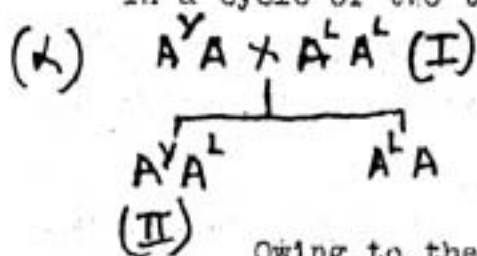
I am afraid I have not let you know anything about Mice. As we have now completed two years, I rather wanted to introduce new blood into the plus line, which, however, has so far shown no sign of debility, or even a tendency for ^{selection} progress to fall off, though, of course, it would be difficult to detect such a sign ^{until} about a year after it had occurred. In June I had put up matings A_2 crossed with plus, with this in view; but last Autumn there were simultaneously very damaging incursions of rats and a lot of disease, I think bacterial dysentery, and I have never used any of the very few mice bred from these matings. Now I have killed one of them, where the buck had lost a foot, and replaced with a mating $A_2 \times A_2^1$, which may be nearly as good in respect of tail length.

Owing, I suppose, to the mothers being often ill, some of the broods which have come through have been very small, so the normals have tail lengths perhaps 56, or even 52, whereas they may easily be 72 in Summer. In the one new mating I have made in the plus line,

I am using a doe with tail measurement only 46 on the strength of a normal sib of, I think, 54. Qualitatively I think this is all right, but I am afraid that these very slowly grown mice may never be very prolific.

I do not think I have ever told you what I am doing with the Agouti series. I suspect, as probably you have done also, that statements about dominance in this series are more than ordinarily loose, e.g., the lethal Yellow is spoken of as dominant, but I believe no one really thinks that the four heterozygotes involving Yellow are all the same colour, and I do not know that they are not all four distinguishable. Similarly, Light Belly, A^L , is said to be dominant to A, and to Black & Tan and Non-Agouti, and it would really be exceedingly interesting if these statements were fully justified, though, in spite of Dunn's work, I do not think we can be sure yet.

This is what I am doing: I have a self black Agouti stock which Gråneberg had inbred for many generations, and which I have carried forward for the last few years. This seemed to provide a suitable background. I have back-crossed Yellow into this stock, and now have the fourth back-cross, which I propose to use as follows in a cycle of two types of mating for each allelomorph.



Owing to the lethality of Yellow, there is, in spite of

dominance, never any doubt of the genotype α of any of the mice used. I imagine that three repetitions of this cycle will eliminate all visible variation within genotypes, such as might be due to factors which Mather, and especially Fabergé, attached great importance, ^{especially} in causing variation of the Yellows. However, if, after six generations, they are not uniform, the fact will at least be obvious. The process produces, I think, 11 out of the 14 viable genotypes in the system, and the other three can be obtained at once by direct mating of homozygotes. Consequently, in a year's time or so I hope to have specimens skinned at a fixed age, e.g. 8 weeks, of the 14 genotypes of the system. Later probably I can get the same range in combination with the modifier Umbra^{ous} that Mather worked with. Would you care to have $\alpha\gamma$ such a series as a demonstration exhibit for your Department? Each set of 14 skins could be mounted, I think, conveniently between two sheets of glass on an area about 2' square, including plenty of space for descriptive labelling. It seemed to me that it would be a pity, after doing the genetical work, not to make up a number of such series and place them wherever they would be thought useful.

Yours sincerely,