Urbana, Ill.
Sept. 29 - 48

Dear Joshua:

Rhoades

Pardon the pencil & paper but I am in the lab where nothing else is available.

Now about the questions you raise.

(1) I have never observed any mutations in the pericarp or other maternal tissue when a C R Dt ears were pollinated with a^s Dt or a Dt pollen. However I never looked for this type of effect specifically and it is possible that I missed it. One difficulty is that a single dose of Dt has relatively little effect compared with 2 and 3 doses and the maternal mutations, if such occur, might be so rare that only a careful search would reveal them.

(2) About your heterogametic experiment. Here again you have the same trouble as in the other expt - namely the effect of a single dose of Dt. Mutations of a to A occur late with Dt and a large number of cells separate the embryo from the outer layer of the endosperm - the aleurone - where the mutations of a to A would be recognizable. This would necessitate the diffusion of the Dt substance through considerable distance and across a number of cells. There is also the difficulty that the standard a^s allele is not completely [illegible]

but gives spots of a deeper aleurone color suggesting mutation to A. We now have however new $a^p$ alleles which appear to be stable either with or without Dt so this is not a serious factor. I am not sure why you use $a^p$ dt as the egg parent. Why wouldn't a dt do?

If corn could only be grafted then we could settle the problem in a decisive fashion. I think some way might be found to successfully graft corn and at the present writing would look upon work in this direction as perhaps the most promising avenue. Dt seems such admirable material that some chemical approach to the problem of how it induces mutations is extremely desirable. Any efforts you can make along this line will certainly command my greatest interest.

We are in the agony of organizing a new laboratory here. We start from scratch - with not even a test tube available. It is going to take most of this year, I am afraid, to establish decent working conditions.

I am sure that we will have many opportunities for contact now that we are both in the midwest.

Regards & greetings

Marcus