

Prior to generation 1 the cultures had been maintained for two unscored generations. The samples of flies shown were not included in the parents of the next generation.

\*Larger samples of flies were checked in this generation. Only B showed possible revertants.

\*\*This fly may have been a single revertant. However, the line has remained stable for several further generations.

The number of bristles missing from the dorsal surface of the head has been used to indicate genotype, since some classes of phenotype are typical of particular genotypes (see Table 2).

Table 2

Cross	Number	Number of head bristles missing												Nos. of flies falling into each class			
		0	1	2	3	4	5	6	7	8	9	10	11		12		
+/+ x +/+	48	3	2	19	15	8	1										
E-H/E-H x +/+	53							2	12	21	13	5					
E-H/E-H x E-H/E-H	46										2	19	19	6			
E-H/+ x E-H/+	48	1	1	8	3	2	2	3	5	11	2	3	4	3			

All crosses carry Hairless balanced against LVM.

Two aspects of the finding require explanation: (a) What causes reversion? (b) Why do the revertants spread relatively rapidly in the cultures?

We prefer to explain the reversions as the result of unequal crossing-over, since their frequency is higher than the expected rate of mutation. This supposes that E-H is a duplication, but we have not been able to demonstrate this cytologically.

If this explanation is correct, then interpretation of recombination data between E-H and Su-H (Nash, 1965) needs revision, because wild type progeny from the cross E-H/Su-H; H/LVM ♀ X +/+; H/LVM ♂, supposed to be recombinants between two point mutations, could have arisen by events which remove the duplication or incorporate the Su-H allele into one of its duplicate parts.

We suggest that revertants spread through the population because of their superior fitness. E-H/E-H; H/LVM flies are less vigorous than +/+; H/LVM flies with otherwise comparable genetic backgrounds. The disadvantage of E-H probably depends on the presence of the H mutant, since E-H/E-H; +<sup>H</sup>/+<sup>H</sup> mass cultures have been maintained apparently without revertants arising.

#### References:

Nash, David. 1965 The expression of 'Hairless' in *Drosophila* and the role of two closely linked modifiers of opposite effect. *Genet. Res., Camb.* 6: 175-189.

Mazar Barnett, Beatriz, Argentine Atomic Energy Commission, Buenos Aires, Argentina. Preliminary genetic tests with dimethyl sulphoxide.

Since dimethyl sulphoxide has been shown to act as a whole body protector against ionizing radiation (Ashwood-Smith, *Int. J. Rad. Biol.* 3, 1961, and Moos and Kim, *Experientia* 22, 1966), preliminary tests

were carried out to investigate if this action could be extended to a chromosomal level as well.

Males of the Oregon R stock were injected with a 10% solution of the compound prior to X-irradiation with 800r at different intervals. At 24 hours after irradiation they were mass mated to "Basc" females, left for one day and then discarded. The females were allowed to oviposit for two additional days. Standard sex-linked recessive lethal tests were done with the F1 females.

These preliminary results, as can be seen in the table, seem to indicate a certain effect. There is a drop in the frequencies of mutations, as compared with the irradiated controls, which is more pronounced as the intervals before irradiation increase.

	<u>No. tested chrom.</u>	<u>No. lethals</u>	<u>% lethals</u>
800r	2075	40	1.9
DMSO (30 min. int.)	1184	19	1.6
DMSO (5 hrs. int.)	1129	13	1.1
DMSO (20 hrs. int.)	2469	19	0.7