AMHERST COLLEGE
Amherst, Massachusetts
DEPARTMENT OF BIOLOGY

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Dear Josh,

Have been reading your article in Phys. Rev. It is very fine, for you have made coherance out of a mass of chaos. If you have a spare reprint I would greatly appreciate having a copy.

We have been getting some interesting results in a series of experiments testing the effect of third chromosome inversions on crossing over in the X in Drosophila pseudoobscura. We are using a number of different strains of three different arrangements (ST, AR & CH) and ~~of~~ we have made 36 combinations of the strains, for example ST_1/S_1, ST_1/ST_2, ST_1/AR_1, ST_1/AR_2, etc. The effect upon the X chromosome is directly related to the third chromosome combination. Thus ST_1/CH_1 gives an increase in X chromosome c/o while ST_2/CH_1 does not. Generally, however, the heterozygous combination give an increase in the X as would be expected from other's results. However, we have found that combina-

tions such as ST_1/ST_2, ST_1/ST_3, CH_1/CH_2 etc (what we have called hetero-homozygotes) give increases in the X which are significantly above the increase found with homozygotes such as ST_1/ST_1, CH_1/CH_1 etc. We started out on this problem in order to find out whether an inversion system could effectively contribute to both the adaptedness and the adaptability of a population by maintaining some blocks within a heterozygous inversion by c/o suppression while at the same time giving an increased c/o in other chromosomes. Generally, this is the case, but now I am bothered by the mechanism behind the correlation between inversions in one chromosome and the increased c/o in the others. All explanations and hypotheses (those of Sterling, Muller, and Scholtz) are unsatisfactory. Have you read the Scholtz & Redfield article in the last CSH symposium? If you have, I would appreciate an opinion. We are thinking of ways to get at the problem (using melanogaster) but have so far not ~~seen~~ had any good leads.

We are planning to go to the Genetics Congress. Are you and others planning to go?

Kindest regards,

Paul Levine