Beck, H. University of Geneva, Switzerland. The phenotype of X^{bb^+}/O males in Drosophila hydei.

In D. hydei X/O types have been reported to show a bobbed phenotype (Hess and Meyer, 1963; van Breugel, 1970, 1971) whereas such ♂♂ are wild type in D. melanogaster. Since the chromosomal situation is similar in both species, with a bb locus on the X and one on the Y chromosome, dosage regulation (Kiefer, 1968) might also occur in X/O types of D. hydei when the X carries a complete rDNA segment.

To re-examine the phenotype of X^{bb^+}/O, such ♂♂ were produced by crossing wild type ♂♂ (stock Madeira) to irradiated ♀♀, homozygous for ch or m. Exceptional patroclinous wild type ♂♂, produced by non-disjunction in the ♀♀, were mated singly to wild type ♀♀ to check for fertility. Of 25 ♂♂ tested, none was fertile. Only one of them showed mature sperm in the dissected testes and the receptacula of all the ♀♀ kept with these ♂♂ contained no sperm. From these data it is concluded that no Y chromosomes were present. Relative bristle length of these ♂♂ and of 25 additional ones which had not been tested for fertility is shown in Figure 1a. The average length of the two posterior scutellar bristles was measured at 50 fold magnification under a Wild M5 dissecting microscope. Relative bristle length was calculated as percentage of the distance between the two posterior dorsocentrals in each fly (Fig. 1). For comparison the distribution of bristle length indices of Madeira X/Y^{bb} ♂♂ (Fig. 1b) and of $X^{bb}8/O$ types (Fig. 1c) is also given. Almost 90% of the Madeira X/O types in Figure 1a fall in the range of wild type with an index between 111 and 150, while a few are in the range of $X^{bb}8/O$ types. These latter cases are easily explained by the presence of a variety of bb alleles in the Madeira stock (Beck, unpubl.). From these observations we may conclude that X^{bb^+}/O types in D. hydei show no reduction in bristle size and therefore that dosage regulation acts also in this species.

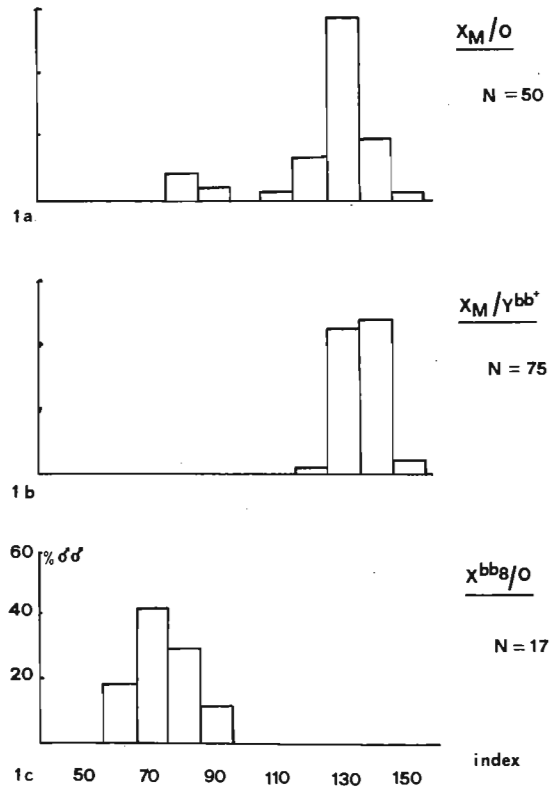

Fig. 1. Frequency distribution of relative bristle length in X_M/O (1a), X_M/Y^{bb+} (1b), and $X^{bb}8/O$ (1c) ♂♂. M stands for X chromosomes from wild type stock Madeira. Relative bristle length is average length of posterior scutellar bristles/distance between posterior dorsocentrals.

References cited: Breugel, F.M.A. van 1970, Genetica 41:589-625; _____ 1971, Genetica 42:1-12; Hess, O. and G.F. Meyer 1963, J. Cell. Biol. 16:527-539; Kiefer, B.I. 1968, PNAS 61 (1):85-89.

Ehrlich, E. University of Oregon, Eugene, Oregon. A suppressor of a suppressor.

For some years we have maintained a stock of C(2L)dp C(2R)px. An X-Y chromosome carrying y^2 su-w^a w^a was introduced into this line, along with other compounds of the arms of the second. In combination with C(2L)dp, flies with the X-Y chromosome are barely distinguishable from w^a; all other combinations with C(2L)+ are suppressed w^a as expected. This suggests that there is a suppressor of su-w^a on the C(2L) dp chromosome.