Research Notes

Blanc, R. and Child, G. P.
Reversal of dominance in the dumpy locus in D. melanogaster.

Larvae and pupae of heterozygous dumpy flies were subjected to 36,50 C. for 12 hours. A large percentage of the flies exposed to the heat treatment beginning at 12-16 hours of pupal life showed truncated wings. These varied from nearly normal through a simulation of the effect of the oblique allele of dp to an effect greater than that of homozygous dp. The treatment producing the greatest effect was that begun at 13-14 hours of pupal life. Females showed a less pronounced effect than males both as to number and degree of the truncates. The period of greatest effect was one to two hours earlier in females than in males. Vortex, part of the phenotypic manifestation of dp, showed an earlier temperature effect period, at 6-10 hours of pupal life. This reversal of dominance has been observed with respect to other genes, such as cv, f, c, px. The experiments are being continued with the use of a dumpy stock and a wild stock which are isogenic to each other with the exception of the region of the dp locus.

Brähme, Katherine S.
A larval character in D. melanogaster.

In a study of the attached-X yw/ stock, it has been found that the mouth armature of homozygous yellow larvae is characterized by a lighter color than that of non-yellow. This can be diagnosed with certainty in the living larva at all stages from hatching to pupation. The color is lightest in the first instar larvae, where the whole armature is very light brown, almost golden; wild type armature at this time is very dark brown. In the second instar, the armature is somewhat darker than in the first but all regions of the armature are distinguishable from wild type. In the third instar (about 70 hours until pupation at 250 C) the mouth hooks are as dark as those of the wild type; the middle region of the armature is somewhat lighter; the posterior part of the armature is light brown, in contrast to the very dark brown of the wild type. Separation of yw XXY females from wild type males and yw triple-X females was made by means of mouth armature color, and when checked against the colorless condition of the homozygous white Malpighian tubes, was found to be a perfectly accurate means of classification. That the mouth armature color is dependent upon the yellow gene and not the white was determined by examination of white and of yellow stocks. This character has been observed independently by N. Kaliss in another stock.