

for vli.

vli and vti are controlled by a polymeric genotype, and its relation with temperature and therefore with the rate of development suggests a possible ecological interpretation of these characters. Its presence would be related to an adaptative limitation in the variability of the polymeric genotype controlling the rate of development. Investigations are in course to test this interpretation.

Ratty, Frank J., Jr. Lethal coverage with short duplications.

A series of 5 short duplications of the w-spl area inserted into the autosomes have been tested for ability to cover lethals in the w-spl area. One of these duplications, Dp(1,3)N264-58a, was obtained from M. Demerec; the other four were produced by irradiations in this laboratory. Two are from Canton-S + irradiation and two are from w^{m4} irradiations (see New Mutants, Report of G. Lefevre). Three of the duplications show mottling for w, indicating association with heterochromatin; and two do not. All five, however, are able to cover w-lethal or Notch mutations. Six "plain" w deficiencies have been thoroughly tested against three of the duplications; N264-58 (mottled), Dp(1;3)49a7 (mottled), and Dp(1;f?)50kl1 (not mottled). The latter covers all six w deficiencies, giving fertile males. The mottled duplications cover only four of them. Forty-four Notch mutants (some also deficient for w) have been tested with the about two mottled duplications. DpN264-58 covers thirty of them, twenty-two of which give fertile males. The covered fertile males are usually non-Notch in appearance, but transmit the Notch phenotype unchanged to their daughters. In a few cases, the covered males are themselves Notch, but these are invariably sterile; however, non-Notch covered males may also be sterile. The other mottled duplication, Dp49a7, seems to be shorter than N264-58, since it covers fewer mutants, but no other difference is apparent. The remaining two duplications have not yet been tested thoroughly, but can cover some w lethals and Notch mutants, giving fertile males. Thus, there is little doubt that short duplications inserted into heterochromatin so that the visible loci, such as w, rst, and spl, all show mottling are fully capable of covering the lethal effects of deficiencies for these same loci. However, the percentage of covered males in many cases is very low. Still, no correlation between coverage and secondary nondisjunction has been noted.

Sattel, Walter Running and hopping abilities of D. melanogaster.

Statistical analysis of data from several authors and from my own experience, as to the hopping and running abilities of some D. melanogaster wild and mutant stocks, yielded the following results. (1) There are significant differences with relation to the "age" of the stocks; "old" stocks, like Oregon (cultured since 1909), show least hopping-distance; "young" stocks (inbred since 1938) show greatest distance. Significant differences as to the running velocity have yet been established. (2) Running and hopping abilities are strongly related to the constitution of the thoracic muscles. Stocks tested were: (1) Oregon Pavia, Coimbra, Reindorf, Nordhausen, Berlin, "Lamarck", Corteolana, and Florida; (2) wild stocks same as (1), and also dp b, dp, Sp J/C2, V-ple, and

Scossiroli, R. Relation between successful inter-specific crossings and gene arrangements.

In crosses between D. ambigua females and pseudoobscura or persimilis males having different gene arrangements, different numbers of pupae can be recovered from the same number of parental flies per culture bottle. The Chiricahua gene arrangement seems to be the most successful in such crossings.