

relationship suggested that the increased body weight at low temperatures may be due to the slower development of the individual. This view was supported by highly significant differences ($p < 0.001$) in mean body weight among three developmental stages (third instar larvae > pre-emergency pupae > adult) raised at 18°C and 28°C. It was also observed that the rate of development at 18°C was approximately one half the rate at 28°C. The above relationship suggested a possible cline between the body weight and altitude in Mexican populations of *D. melanogaster*.

Reference: Pipkin et al. 1976, J. Hered. 67:258-266.

Miglani, G.S. and F.R. Ampy. Howard University, Washington, D.C. ADH denaturation depends on native ADH activity levels in *D. melanogaster*.

ADH activity was compared with the activity of ADH for each line after treatment with 0.7M guanidine hydrochloride (GuHCl) or 1.0M urea (UR) for 40 seconds or with heat for 15 minutes at 45°C. The relationship between native ADH activity and ADH activity after treatments with denaturants was investigated. A significant correlation ($r = 0.63$; $p < 0.05$) was observed between native ADH activity for the 12 Adh I/Adh I lines and ADH activity after treatment with UR. Significant correlations were observed between native ADH activity for the 40 Adh II/Adh II lines and ADH activity after treatment with GuHCl ($r = 0.59$; $p < 0.01$) and UR ($r = 0.71$; $p < 0.01$). These relationships suggested that the degree of ADH denaturation was possibly dependent on the native ADH activity levels of the strain.

Reference: Pipkin et al. 1976, J. Hered. 67:258-266.

Native ADH activity (nM of NADH produced/ml/min/mg of live weight) was determined spectrophotometrically for 12 Adh I/Adh I and 40 Adh II/Adh II isochromosomal lines extracted from 16 Mexican populations of *D. melanogaster* (Pipkin et al. 1976) raised at 25°C. The native

Moss, L.J. and E.A. Carlson. State University of New York, Stony Brook. EMS induced yellow mosaics in *D. melanogaster*.

Table 1. Frequency of mutation chart.

	yellow phenotypes	F ₁ females
EMS run #1	3	1235
EMS run #2	11	5162
EMS run #3	3	854
EMS run #4	4*	2387
total	21	9638

*Includes one yellow complete; all others in runs 1-4 are mosaic.

Total yellow phenotypes = $(21/9638)(100) = 0.217\%$ frequency of yellow phenotypes.

Total F₁ females = $(17/9638)(100) = 0.176\%$ frequency of yellow mutations.

Wild type Ore-R males were fed EMS (ethyl methane sulfonate) using an 0.0125M concentration for 24 hours. These males were mated to virgin y w f females and the F₁ flies were observed for mutations of yellow body, white eyes, or forked bristles. Altogether 21 yellow, 5 forked (all mosaic), and 5 white (all mosaic, one of which was an apricot) mutations were found among 9638 F₁ progeny.

The yellow mutations were classified as mosaic or complete in phenotype and then mated to y w f males for a test of transmissibility. Of the 21 yellow mutations, 7 were transmitted, 4 were probably gynandromorphs involving (y f) F₁ mosaic phenotypes with non-white head areas. Of these 4 gynandromorphs, 2 were sterile, and the 2 which were fertile segregated the y w f and Ore R wild type X (along with some f crossovers). Of the 17 yellow phenotypes not due to chromosome loss, 6 were sterile. Of the 11 fertile yellow mutants, 10 were mosaic and 1 was complete. The complete transmitted as did 6 of these 10 mosaics.

The transmissibility data for the yellows are shown in Table 1.

These results show that EMS induces chromosome loss as well as gene mutations affecting yellow (none of the transmitted viable yellows showed achaete or scute mutations in association with the yellow). One of the two lethals is not associated with an lJ1 lethal because