

Brehme, Katherine S. Effects of the triple-X condition in *D. melanogaster*.

In a study of the giant larva, using the $gt\ bll/gt\ wa$ stock, a high pupal and first instar larval mortality was observed, as well as a high frequen-

cy of zygotes whose pupation was retarded, as expected for giant, but which did not form large (giant) pupa cases. In order to separate the effects of the triple-X condition from those of the giant, a study of larvae and pupae of $y\ w/+$ stock has been made. Counts based upon 350 experimental and 1000 control larvae show about 10% larval mortality, 17% pupal mortality in the attached-X stock, in per cent of total zygotes; Florida wild type controls show about 8% mortality in the larval stage, 1% in the pupal. In the $y\ w/+$ stock, 2% emerged as superfemales. Of the dead larvae, one-fourth died in the late third instar and were identified as triple-X by the color of the Malpighian tubes and mouth armature; the remaining dead larvae were all in the first instar and practically all were males and XXY females. In this stock, therefore, the lethal effect of the triple-X condition is confined almost entirely to the pupal and prepupal stages. In the $gt\ bll/gt\ wa$ stock, a larval mortality of 14% (almost all in the first instar) and pupal mortality of 16% were observed. Apparently the triple-X lethality is affected by the genetic environment, a larger proportion dying in the early larval period in the giant stock.

In the $y\ w/+$ stock, it was also observed that triple-X larvae do not form puparia until about 24 hours later than the mean pupation time of the males and XXY females; some XXX larvae do not form puparia until 7 days after oviposition at 25° C. Although no measurements were made, larval growth does not seem to occur during the additional days of larval life.

Barigozzi, Claudio. Study of salivary chromosomes through the ash analysis.

Spodograms of *D. melanogaster* salivary glands were prepared in order to determine the presence of inorganic materials in the ash. After burning

at 450°-500° C the residue was easily detected in euchromatic regions, but no ash was found in the chromocentral region. This indicates that the euchromatin is rich in inorganic matter while the heterochromatin is either poor in it or that such materials are entirely eliminated at temperatures of 450°-500° Centigrade.

Bedichek, Sarah. A spontaneous reverse mutation of yellow².

A reverse mutation of y^2 occurred spontaneously in a homozygous $y^2\ v\ f$ triploid stock. A single diploid female of the consti-

tution $\neq\ v\ f/y^2\ v\ f$ was found; contamination is thus excluded.

This reverse- y^2 was not only dominant over y^2 , but also over the y alleles in the stocks y 99b, y 303h, and y ac sc⁸ wa¹³ m. A cytological examination for chromosomal abnormalities has not yet been made.

Buchmann, W. Temperature experiments.

Experiments with temperature shocks were performed in order to study the effects of these temperature shocks on the duration of the developmental stages

and on the presence of modifications of *D. melanogaster*. My experiments, which are not yet completed, showed that temperature shocks slow development. At the same time it was found that there exists a parallelism between the hereditary and nonhereditary variability. The nature of the induced nonhereditary modification depends upon the treated developmental stages and upon the applied temperature.

Cochrane, Flora. Color of testis.

Study of testis color in 20 eye-color mutant stocks of *D. pseudo-obscura* showed that the amount and quality of color present in the testes is comparable to the

amount and quality of the pigment deposited in the eyes during the late phase of their development. It was also found that color appears in the testes at about the time of the onset of the late phase of eye pigment development and may therefore be affected only by genes active during this period.

Crew, F.A.E. and Rowena Lamy. Mosaics in *D. pseudo-obscura*.

Thirty-eight mosaics have been obtained. They appear to be caused by chromosome elimination. First and second cleavage mosaics show no signs of gynandromorphism. Sex-combs develop on XX

legs of male mosaics and not on the XO legs of female mosaics. A fertile female mosaic having an abdomen bilaterally divided into XX and XO tissue produced a high number of sterile exceptional sons, which is considered as evidence that she had incorporated in one ovary some germ cells which were XO in constitution. Vermilion in these mosaics behaves similarly to vermillion in *melanogaster* and *simulans*; that is, it appears as a wild type eye in exceptional tissue. In two female "fore-and-aft" mosaics however in which the head and thorax were XO and the abdomen XX (and v/ /) the eyes were vermillion. Sepia and white show autonomous development in exceptional tissue. There is some indication that sex-dimorphic characters are expressed according to the sex of the mosaic and not according to the constitution of the tissue.