

Research Notes

Argelander, A. and E. H. Strasburger. A case of genetic dysfunction of the ovaries.

In a cross between ♀ ClB sc¹ v/y² sc⁸ wa X ♂ y² sc⁸ wa males were found with eyes considerably lighter than wa, similar to wa v. Seven of these males were mated to y² sc⁸ wa ♀♀ from the same culture. Three matings were without light-eyed flies, whereas in 4, half of the flies were y² sc⁸ wa and the other half had light eyes. The inversion made it impossible to analyze new eye color. Crossing with y² sc⁸ wa v showed, however, that v was not present in the new mutant. The light-eyed females proved to be sterile. 56 homozygous light-eyed females mated to light-eyed or Berlin wild stock males gave no offspring. y² sc⁸ wa ♀♀ heterozygous for the light eye color gave as many flies with wa as with light eyes. The light-eyed males proved to be fertile. The stock is since kept by crossing light-eyed males with females heterozygous for the light color. The histological investigation of homozygous and heterozygous light-eyed females was done by E. H. Strasburger. The ovaries, together with their adnexes, were fixed in Carnoy and stained according to Feulgen method. Preparations were made of virgin light-eyed females and of females which had been mated to light-eyed males. In both cultures no eggs were found. Result of the microscopic investigation: The ovaries of all the homozygous light-eyed females are obviously abnormal. However, they are normal as far as the number of egg tubes per ovary, the number of sections per tube and, though perhaps not always, the number of cells per section. The nuclei of the older egg compartments are always, those of the younger ones often absolutely pycnotic. In the older cells there is obviously plasma constriction. In the egg ducts often pathological heaps of eggs and nurse cells are found. The three spermathecae and the two paravaria are normal and always present. The heterozygous females were found to be normal.

Buzzati-Traverso, A. A sex-linked modifier of brown.

In the F₂ of a cross between a y ♀ and a bw; e wo ro ♂, flies appeared with rose eyes. This eye color proved to be due to a sex-linked recessive modifier of brown, which, when homozygous in presence of homozygous bw produces the rose eye color, and when homozygous in presence of heterozygous bw lowers the dominance of the normal allele of bw so that the flies carrying such gene combination are brown. Experiments are in progress to find out whether it is a specific modifier and to localize it in the X-chromosome.

Buzzati-Traverso, A. Direct proportionality between X-ray dosage and translocations between the 2 and 3 chromosomes of *D. melanogaster*.

Using the L²/Cy - 3-ple method to detect translocations between the second and third chromosome and X-ray dosage of 1500, 3000 and 6000 r (the irradiation being made in Berlin by K. G. Zimmer) it has been found a direct proportionality to the quantity of applied irradiation. 3,59±0,75, 6,14±1,82 and 12,21±1,83 are the percentages of translocations obtained with the three mentioned doses. Experiments are in progress to obtain more points along the curve, to check the wave-length and the time-factor effects.