From the above given data it may be seen that the frequency of the mosaic occurrence for autosomal genes is alike both in males and females.

Surrarrer, T. C. Time of pupae case coloration. In obtaining pupae cases of known age of a vermilion mottled eyed mutant strain at 27°C the pupae cases do not undergo any noticeable darkening during the first hour after pupation.

Waletzky, E. A haploid mosaic of D. melanogaster. In a cross between W +/+ wp pP x wp pP ♂ a single female was found in which thorax, abdomen and the right side of the head were W +/+ wp pP. The left side of the head was smaller than the right side. The left eye was peach in color and approximately two-thirds the size of the normal, red, right eye. The left posterior ocellus was peach and approximately half the size of the normal, right posterior ocellus. The arista and all macrochaetae and microchaetae on the left side of the head, were not more than half the size of those present on the right side of the head.

Whittinghill, M. Salivary studies on translocation. Salivary analyses (and supplementary tests as to the localizations of several mutants on the salivary map) have been obtained in a series of Y-2 translocations (found and first used by Dobzhansky: Biol. Zbl. 50:671-685, 1930; also Z.i.A.V. 60:235-286, 1932) and in T(2,3)Moiré (formerly Me[lx]).

Three of the translocations, T(Y;2)A, B and C, were indistinguishable from each other in the salivaries, though differentiated genetically by crossing-over relations with thick (Dobzhansky) and by a position effect with rolled (see below). In each of these three translocations the break in the second chromosome was found to be just before band 41A1 of Bridges' 1935 map. Synapsis in 2R was greatly interfered with, especially near the region of the break.

Translocation D was found to be a complex rearrangement involving the third chromosome also and is, therefore, here designated as T(Y;2;3)D. Six(or more) breaks were found in the second and third chromosomes as follows: before 30A1, before heaviest band of 34C, undetermined breaks (or break) proximal to 41D, before 61F1, before or after 62A5 (which is the last of four similar light bands), and in 78F. The new arrangement of chromosomes was found to be as follows: Proximal part of Y; 29F to 2L tip. - Distal part of Y; 30A1 to 34C; 78F through spindle attachment to 3R tip. - 3L tip to 61E2; deficiency of 61F1 to 62A4 or 5; 62A5 or 6 to 78F; 34C to spindle attachment; unanalysed rearrangement in 41A to C; 41D1 to 2R tip.

Translocation (Y;2) E was found to have its break between the two heavy capsules of 36D. This is to the right of the locus of black, rather than to the left as determined genetically by Dobzhansky.

Translocation (Y;2) I was found to contain exchanges between 3 and Y as well as between 2 and Y, so it was thereupon designated T(Y;2;3)I. The salivaries showed a break in 2R after 47A1 capsule and five breaks in the third chromosome, after 69C2, between 74A1 and B1 capsules, after 84E1 or 2, between the heavy doublet of 91E and in 99C. The new order of segments was found to be: 2R tip to 47A; s.a. Y; 91E to 84E; 69C to 74A; 99C to 3R tip. 2L normal through s.a. to 47A1; tip of one arm of Y. Tip of other arm of Y (presumable, not seen); 91E to 99C; 74B through s.a. to 84E; 69C to 3L tip.

Translocation (Y;2) J as studied by both Bridges and this writer revealed an inversion in addition to the translocation. The entire 2R is carried by the Y in this order: Y s.a.; 57F1 to 41A1; 57F2 to 2R tip.

The Moire used as a balancer for the entire third chromosome, formerly called Moire^{11x} (DIS-3:13 Pub. Glass '33. J. Gen.28:104) was found to require the designation T (2;3)Me. It is composed of the translocation of the tip of 2R to the spindle attachment of 3, the inversion, of an adjacent segment of 2R, the Payne inversion (carrying Me), a new In(3R), plus a reciprocal exchange between L and R arms, i.e., a central inversion extending across the s.a., which cuts into the L and R inversions. Breaks were found at eight places, as follows: through 48C1 capsule, after 59D1 capsule, after 63B1, in 69E, in 72E, in 89B, in 91C and in 97D. The altered chromosomes were found to have the constitution outlined below:

2L normal through s.a. to 48C1; 59D1 to 48C2. 3L tip to 63B1; 72E to 69E; 91C to 97D; 89B through s.a., which bears 59D to 2R tip seemingly as a lateral attachment; along base of 3L to 72F; 63B2 to 69E; 91C to 89B; 97D to 3R tip.

Genetic studies were undertaken on some of these, chiefly T(Y;2;3)D, to determine the nature of phenomena not explained on cytological grounds, such as the difference between Translocations (Y;2) A, B, C and J, and the pale and the Minute characteristics of the T (Y;2;3) D phenotype. The results of matings of translocations to genes located at the base of 2R can best be presented in tabular form.

Translocations: genes	A	B	C	D	J
lightoid	x	x	x	x	x
blot	x	x	x	x	x
straw	x	x	x	p.e.	x
rolled	x	p.e.	x	x	x
thick	x	x	x	x	x
apterous	x	x	x	x	x
Minute-p	-	-	-	allel	-
misformed	x	x	x	x	x

Legend: p.e., position effect found; x, no effect; -, not tested satisfactorily.

The position effect of T(Y;2)B with rolled was found by Mrs. V. Curry, others by the writer.

Breakages in other regions of the second chromosome showed no position effects in the following series of matings: T(Y;2)J with wt, sm, hy, a, px; T(Y;2)E with j, lm, el, rd, pu, an, cru, rh, ck, hk, bri; T(Y;2;3)I with en, upw, chl; T(Y;2;3)D with Mz, Sk, cl, pi, Sp, spd, gt^4, tkv, d, tkd, J, ab.

After the cytological discovery of a deficiency around the locus of roughoid in T(Y;2;3)D, matings were made with all mutants in this vicinity to find out whether the deficient material might not be present somewhere else in the nucleus and, if not, what other loci it might include. It was found that this is a true deficiency and that the loci of anarista, roughoid and veinlet (but not Roughened) are included within its limits, 61F1 to 62A4 or 5.

Zimmer, K.G. and N.W. Timofeeff-Ressovsky. Production of mutations by neutrons in D. melanogaster.

A statistically significant increase of the rate of sex-linked mutations in D. melanogaster (ClB-method) was obtained by irradiation with neutrons (0, 96% ± 0, 20, as compared with 0, 19% ± 0, 07 in the controls) from an "artificial source (Philips, Eindhoven). Against all other radiations (X-rays produced by the neutron-apparatus) the flies were protected, so that the whole difference in the mutation rates (0, 77% ± 0, 24) is due to protons secondarily induced within the flies by neutrons. Dosage-work (determination of neutron-irradiation-dosages in r-units, equivalent to those of X-rays), as well as further irradiation-experiments are in progress, and will allow an exact comparison of the effectivity of equivalent dosages of neutrons and X-rays. The last question is of interest in connection with the problem of the influence upon the effectiveness of the total dosage of the time-and space-distribution of ionization along the path of the secondary electron or particle.

Technical Notes

Bridges, C. B. Concentration of moldex in culture media.

A concentration of 1.0% of a 10% alcoholic solution of moldex (Moldex-A from Glycol Products Co., 148 Lafayette St., New York, N. Y.) was used at Pasadena for some months in culture media (DIS-6:62) for several species of Drosophila. It was found to control mold perfectly, but was reported by several workers to give fewer fertile cultures, lowered productivity and smaller flies - presumably through hindering growth of live yeast. For the past year a concentration of 0.7% of the solution (0.07% of the chemical) has