Judd, Burke and Lefevre, G. X-ray-induced dominant mutation in D. melanogaster. The frequency of all kinds of visible dominant mutations was determined after irradiation of Canton-S + males and females. In addition the change in incidence of detected mutations after irradiation was followed by subculturing the experimental bottles at weekly intervals for a minimum of four weeks. Doses of 2500 r and 5000 r were applied in the male irradiations; 3000 r in the female. Dominant mutations are sufficiently numerous to provide quantitative data; over 2% dominants were found as a maximum. However, the number of detected mutants declines rapidly two or three weeks after exposure. In these experiments no leveling off of the mutation rate was observed in the late subcultures, but the incidence of detected mutation was invariably lowest in the last subculture. Moreover, after four weeks the same mutant incidence was observed in both the 2500-r and 5000-r experiments, even though it was much higher in the latter at the beginning. The mutation rate in the 3000-r female series was somewhat, but insignificantly, lower than that in the 2500-r male series. Even in the female irradiations a decline in the incidence of detected mutations was noted after 11 days. Apparently, germinal selection is operative in eliminating induced mutations from the germ line. It cannot be decided if this is the sole cause for the decline, or whether, in addition, an intrinsically lower dominant mutation rate exists in the gonial as compared with the mature germ cells. All the mutants tested were homozygous lethal.

Kikkawa, H. Effects of 3.4-dihydroxykynurenine on pigment formation. The biochemical step from 3-hydroxykynurenine to brown pigment is quite unknown. But judging from Raper's works for the melanine formation, 3.4- or 3.6-dihydroxykynurenine seems to be a next product of 3-hydroxykynurenine. The 3.4-dihydroxykynurenine has been synthesized by Drs. T. Sakan and S. Seno of Osaka City University. Tests of this substance to v bw and cn bw mutants of Drosophila, however, were negative.

Koske, Thea A new species hybrid in the obscura group. For some time I tried to cross European species of the obscura group, but only with negative results. Later I also included some American species. Some time ago I learned by letter from Professor Buzzati-Traverso that he had succeeded only in crossing D. ambigua females with pseudoobscura and persimilis males of certain origin. (A report has been made recently by him at the Intern. Congress of Entomology at Amsterdam) Shortly afterwards I obtained a hybrid by crossing pseudoobscura females (Oaxaca) with ambigua males. The ambigua strain was of Swiss origin and highly inbred. The salivary chromosomes of the hybrid show a most complicated pattern. There are some inversions, overlapping inversions, and smaller rearrangements. Some parts lack in pairing. Nevertheless, extended sections of certain elements are exactly paired. An analysis will be carried out. Also the interaction of mutant alleles in the hybrid will be tested.

Lewis, E. B. Additions and corrections to the cytology of rearrangements. The following salivary-gland-chromosome locations of break points in certain rearrangements supplement descriptions found in the work of Bridges and Brehme.

ADDITIONS:

Rearrangements	Break Points
T(1;3) v	10 / 93B
T(1;3)05	4F / 88A-C / 92/62B-C (new order in 3 is : tip of 3L to 62 B-C / 88A-C through centromere of 3 to 62B-C / 92 to 3R tip; section 88A-C to 92 is inserted into X-- in 4F according to Griffen's analysis).
T(2;3) A	29 B-C / 83B
T(2;3) B	33 / 81F
T(2;3) 101	42-43 / 83 E-F
T(2;3) 108	The single euchromatic break is in 52D-F and is superimposed on In(2R)Cy.
T(2;3) 109	22F-23AB / 80 / 55F-26A (a cyclical exchange of tips as reported by Bridges and Brehme, but contrary to earlier report the inversion in 3R is evidently In(3R)P.).
T(3;4) c	86B-C (just to right or left of 86C1-2) / 101F
In(3LR) sep (Muller)	65E/85E

CORRECTIONS:

T92;3)Xa	The break in 3R which is superimposed on In(3R)P is not in 89D but lies near the end of 89E (to the right of bx and its pseudoalleles).

Lindsley, D. L. An X chromosome specifically deficient for the nucleolus organizing region.

In experiments in which newly derived X chromosomes, involving changes in the heterochromatic region, are recovered, it is desirable to test every product for the presence or absence of each known heterochromatic marker separately. Therefore, a chromosome lacking the nucleolus organizing region, but retaining the bb locus and block A has been made. The proximal break in In(1)sc^{L8} is immediately to the right of the nucleolus organizing region, while the proximal break of In(1)w^{m4} is immediately to the left of it (Kaufmann, 1944). A single exchange between these two inversions results in one product which is duplicated for the region from immediately to the right of sc to immediately to the left of w and is deficient for the nucleolus organizing region. This product is viable in heterozygous but not homozygous females. It lives as a male in the presence of Y or Y" but is sterile; XO males or males carrying Y^{1c} do not survive. Such viability data agree with observations that the nucleolus organizing region of the Y chromosome is carried on Y short. The sterility of nucleolusless/Y is puzzling, since males carrying larger deficiencies, also including the nucleolus organizing region, such as In(1)sc^{4} sc^{8} are fertile; also males carrying duplications for all of the region duplicated in the nucleolusless chromosome and more are fertile (T(1;4) w^{m5L}).

Lüning, K. G. X-ray-induced mutations in different stages of spermatogenesis.

Wild-type, M5, and y w sn males were irradiated (2900 r) at the ages of 0-1 or 6-7 days. The males were mated to virgin y w sn females immediately or after some days. Every day or every third day the males were transferred to new females. Eggs were collected and the number of hatched eggs eas counted; total, 150,000 eggs. In the first five days the rate of dominant lethals was nearly constant. Then there was a more-or-less sharp increase in the rate of dominant lethals. This high frequency remained till the 11th day; then there was a sharp decrease, which continued to the 20th day after treatment, when there was only a slight effect of treatment compared to the controls. The increase in the rate of dominant lethals appeared at the same time, whether the males