

Hadorn, E. and G. Schubiger. Zoologisches Institut der Universität Zürich, Switzerland. An invasive neoplasm from embryonic cells of *D. melanogaster*.

Among many blastema cultures which we established by transferring parts of 6 ± 1 hour old embryos of normal genotypes into the abdomens of adult females, one cell line behaves like a malignant neoplasm. The cells invade the ovaries of the host fly and break into the egg follicles; moreover, the intestinal tract and the malpighian tubules become surrounded and "attacked" by the tumorous cells. The hosts die 10 - 12 days after the implantation of the neoplasm. Most of the tumor cells are tetraploid (male). This fast growing strain can easily be maintained by transferring it to new hosts. The tumor cells have lost the capacity for imaginal differentiation (atelotypic behaviour). When transplanted back into metamorphosing larvae the implants either kill the host or they disappear during its pupal life, or in a few cases they do not grow or differentiate but can be recovered in their metamorphosed hosts. Our strain behaves very much like a neoplasm which E. Gateff and H. Schneiderman (personal communication) obtained from larval brain cells of the lethal mutant 1(2)gl⁴.

Hadorn, E. and R. Hürlimann. Zoologisches Institut der Universität Zürich, Switzerland. Differentiation of *Drosophila* blastemas "without larval life".

Parts of embryos (4 - 10.5 hours old) are transferred into adult abdomens. In this medium they complete complete differentiation into larval organs such as salivary glands, malpighian tubules, muscles, nervous system and imaginal discs. Permanent cultures can be established from such disc blastemas. These primordia will differentiate into normal adult organs (genitalia, legs, head, wings etc.) when transplanted back into a full grown host larva when it enters and passes metamorphosis.

Mglinetz, V. A. and V. A. Semyonova. Obninsk, USSR. Duplications induced by irradiation of *D. melanogaster* females.

Among nineteen chromosome mutations induced by γ -irradiation (4000 r) in oocytes of *y w* females, two chromosome rearrangements were found, which are schematically shown in the figure.

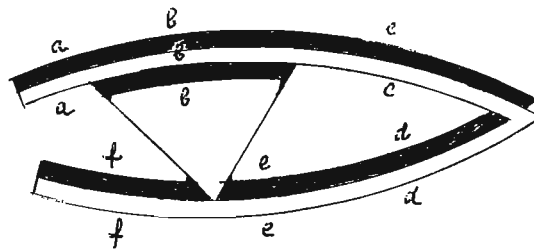


Fig. Conjugation of salivary gland chromosomes in F_1 larvae (white strand - standard autosome of the male-parent; black strand - irradiation altered female-parent autosome; bbb - triploid segment of the autosome).

These mutations result from three breaks and may appear by means of interarm transfer of a segment:

- (a) within the same chromosome followed by crossing over in centromeric region or
- (b) to the homologous autosome. It seems likely that chromosome repeats may arise in this way also. Initiation of similar rearrangements may simulate nondisjunction of parental autosomes (trisomy). Trivalent formation in salivary gland chromosomes indicates indirectly that similar trivalents may arise in meiosis, too.