

Grace, D. University of Leiden, The Netherlands. Disputant exceptionals from experiments involved in mapping dumpy alleles.

In 1962 Southin and Carlson reported an experiment in which a single exception was found having an outside marker which was contradictory to other results. In a cross involving o-bm x ed cm-2, they found 7 ed recombinants and 1 cl recombinant from 42,000 flies scored (Genetics 47, 1962). This antithesis was not followed up. Over the years a similar situation has arisen three times in my recombination experiments with dumpy alleles. One such fly was found in an experiment involving the dumpy alleles 0-DG531 x ed lv-CBl cl. From this cross 3 ed and 1 cl recombinants were recovered and verified from 29,000 flies scored. Three separate subcultures were made from the stock using a single ♂ for each line. All three stocks were again mapped with ed lv-1 cl. A total of 16 exceptional ed flies were recovered from the three lines, 12 of which were fertile and verified (86,000 flies were scored). There were no cl recombinants recovered. The "contradictory" recombinants presumably do not result from the process of recombination which is normally encountered within the dumpy region. They may have resulted from a reversion or conversion phenomenon along with a normal recombinational event involving an outside marker. Reversion and/or possibly conversion does occur at a low frequency within the dumpy region. Whatever the mechanism, this is not a normal occurrence at dumpy since from nearly 300 recombinants involving dumpy alleles which have been recovered, only four of these have been cases of disputant exceptionals.

This work was carried out within the framework of the Association between Euratom and the University of Leiden, contract 052-64 I BIAN. Support was also received from the J.A. Cohen Institute for Radiopathology and Radiation.

Vlachová, E. J.E. Purkyně University, Brno, Czechoslovakia. Searching for a technique of application of chemomutagens on melanogaster males in the food.

The effect of the concentration of chemical mutagens is yet little known because of difficulties connected with method of application and exactness of dosage, especially if the mutagen is given in the food.

The effect of concentration in relation to exposure and pre-treatment of males was studied using N-methyl-N-nitrosourea (MNU) and N-ethyl-N-nitrosourea (ENU) in the food. The aim was to find the shortest possible exposure in order to ensure comparability with the irradiation experiments, and to limit chemical changes of the mutagens. Concentrations to 18 mM, exposures of 6, 12 and 24 hours, and different pre-treatments of males were used. The mortality of treated males was taken as a measure of the effect. It was found, for example, that young males kept without water and food for 18 hours, exposed for next 12 hours on filter paper wetted with 15 mM ENU in 5% sucrose, had about 50% survival.

The conditions given above were then tested for induced genetic effects. The frequency of induced lethals and changes of the mean relative viability were studied by means of the Cy technique. The results (see Table) suggest that the described method of application of ENU was effective in inducing both lethals and subvitals:

<u>Pretreatment</u>	<u>Treatment</u>	<u>Chromosomes tested</u>	<u>% Induced lethals</u>	<u>Mean relative viability ± s.e.</u>
none	control	90	.00	31.57 ± .64
without water and food	control	90	.00	30.92 ± .60
none	12 mM ENU	90	4.44	24.78 ± 1.23
without water and food	12 mM ENU	90	7.77	22.65 ± 1.36

Obviously, the effectiveness of the mutagen given in the food can be increased when the males are kept dry and without food before application of the mutagen.