Von Halle, Elizabeth S. Biology Division, Oak Ridge National Laboratory, Oak Ridge, Tennessee. Pursuing the Enhancer of white-apricot.

$E(w^a)$: Enhancer of white-apricot was discovered as a spontaneous mutant in chromosome 2 by B. J. Scandlyn in 1964. Flies of composition $w^a$; $E(w^a)/+$ have pale lemon-covered eyes; $w^a$; $E(w^a)/E(w^a)$ flies have white eyes. In 1964, homozygous $E(w^a)$ flies of both sexes were sterile. To date, homozygous males are sterile with adult testis squashes showing non-motile sperm. However, homozygous females are partially fertile with ovaries that, upon examination, range from rudimentary to normal-looking.

To see if there is any effect of $E(w^a)$ on other mutants at the white locus, the stocks listed below were obtained from Dr. E. B. Lewis with the following results: $w^{a2}$, $w^{a3}$, $w^{bf}$, $w^{Bwx}$, $w^{cf}$, $w^{ch}$, $w^{co}$, $w^{col}$, $w^e$, and $w^{sp}$ are not affected. (It is interesting to note that the eyes of $w^{bf}/Y$; $E(w^a)/+$ males are phenotypically similar to those of $w^{bf}/Y$; SM1, Cy/+ males. However, $w^{bf}/w^a$; $E(w^a)/+$ females have eyes that are noticeably paler than their $w^{bf}/w^a$; SM1, Cy/+ sisters.) Only $w^{a4}$ interacts with the Enhancer in the same way as $w^{a1}$. When the Enhancer was crossed to other eye color mutants, specifically dor, pn, v, g, car, mal, $Pu^2$, and $bw^D$, again no alteration of phenotype of these mutants was observed.

Attempts to localize $E(w^a)$ were made by crossing it first with S SP Tft $nw^D$ $Pin^{Yt}$. Results showed that the Enhancer lies to the right of nw. From crosses to px sp $Pin^2$, it was learned that the Enhancer lies about 4.6 units (95/2081) to the right of px with four crossovers indicating that the Enhancer is left of Pin and one crossover placing it to the left of sp. $E(w^a)$ was also made heterozygous with Df(2R)Px and $Df(2R)Px^2$. The Enhancer is not within the limits of either of these deficiencies. In crosses of $E(w^a)$ with T(1;2)Bld, results were inconclusive because no aneuploid progeny have yet been recovered.

The $bw^+Y$ chromosome, which duplicates the region in which the Enhancer is found, does not suppress the effect of $E(w^a)$ on $w^a$. (Research sponsored by the U.S. Atomic Energy Commission under contract with the Union Carbide Corporation.)

Barnett, Beatriz Mazar, and Enzo R. Muñoz. Atomic Energy Commission, Buenos Aires, Argentina. Mutation Test with Glyoxal in Drosophila melanogaster males.

Berry et al. (1965) and Hills and Berry (1967) who have reported a toxic effect of gamma irradiated carbohydrate solutions on mammalian cells cultured "in vitro", ascribe that effect to the glyoxal produced by radiolysis.

Even though in Drosophila melanogaster males, the injection of gamma irradiated fructose solution only slightly increases the frequency of sex-linked recessive lethals in sperm*, it was considered of interest to study the possible mutagenic effect of glyoxal. In a preliminary test, a 0.73 mgr/ml solution of the compound (the most active in Hills experiments) was employed. The experimental procedure was as follows: one day old Oregon R males injected intraabdominally with a 0.73 mg/ml solution of glyoxal or a 10% solution of freshly irradiated (2.5 Mrads) fructose solution, were mass mated to "Basc" females 24 hours after the injection, left for one day with the females and then discarded. The females were allowed to oviposit for two additional days. Standard recessive lethal tests were made with the F1 females and all lethals scored were retested. The results obtained can be seen in the table. Further experiments are under way.

| | No. chrom. tested | No. lethals | % lethals |
|---|---|---|---|
| Irr. fructose | 1829 | 6 | 0.32 |
| Glyoxal | 2989 | 10 | 0.30 |
| Control | 2439 | 2 | 0.08 |

*After publication of our note in DIS 43:155 an error was discovered in the processing of the data. The P values were found to be $<0.05$ thus making the increase in the frequencies of mutations significant.

References: Berry, R. J. et al. 1965. Int. J. Rad. Biol., Vol. 9 (6) 559-572.
Hills, P. R. & Berry, R. J. 1967. Nature Vol. 215, 309.