Williamson, John H. and D. R. Parker. Biology Division, ORNL, and University of California, Riverside, California.
Recovery of multiple-break rearrangements from irradiated oocytes.

Until recently it has been tacitly assumed that only simple two-break rearrangements can be recovered in oocytes of irradiated attached-X females. This report describes four cases of rearrangements involving three or four breaks each. In two cases both a detachment and a Y fragment were recovered in sons of irradiated y v bb/$B^S Yy^+$ females. Both detachments carried B^S and none of the Y fertility factors, while both Y fragments retained the y^+ marker and were capped by 4R. Fertility tests showed that one fragment was a complete Y and that the other was broken betwen kl-2 and kl-3. Thus in one case a minimum of three breaks must have occurred while in the other a minimum of four breaks were necessary to produce both the detachment and the fragment.

The third case was a detachment recovered from irradiated y v bb/$Y^S y^+ Y^L \cdot Y^S$ females that proved to contain kl-5, y^+, and $ci^+ey^+spa^+$. The production of this aberration required a minimum of four breaks. The fourth example came from irradiated y v bb/O females, where the fourth chromosomes were differentially marked (spa^{pol}/Dp(1;4)y^+). Recovered was a detachment capped by 4R (spa^+) along with a free maternally derived recombinant fourth chromosome marked with spa^+ but not y^+. Thus, there were recovered products of two separate two-break events. (ORNL is operated by Union Carbide Corporation for the U.S.A.E.C.)

TECHNICAL NOTES

Keith, A. D. and H. Goldin. University of Oregon, Eugene, Oregon.
A method for rearing Drosophila axenicaly.

In certain instances it is desirable to raise Drosophila under sterile conditions. A relatively simple and effective method has been developed. Seven day old flies, reared on a standard culture medium were removed to pint canning jars (about 1500-2000 flies/jar). The jar was capped with a petri plate containing medium of the following composition: agar, 30 gms; milk solids, 30 gms; tegosept, 1.5 gms; Karo Syrup, 50 ml; fermented apple cider, 45 ml; the mixture was diluted to a total volume of 1 liter.

The jar and petri plate were inverted and the flies were allowed to lay eggs over a 2 to 4-hour period at 25° C. This method produced approximately one egg/hr-female or slightly less. The petri plate was removed and the remainder of the procedure was conducted in a chemical hood which was sprayed with 70% ethanol. The petri plate was flooded with water, the eggs were loosened by gentle brushing and were poured over a 2.5 cm filter in a Buchner Funnel while under suction (about 500 eggs/filter was optimal).

The eggs were dechorionated and surfaced sterilized with 6% hypochlorite (about 1 min.) and washed several times with sterile water. If more rigorous conditions were warranted the eggs were further sterilized with a 10% $CuSO_4$, 0.25% $HgCl_2$ solution and again rinsed several times with sterile water. The filter was removed to a sterile culture bottle, inverted, pressed on the food and removed to the side of the bottle. In this manner most of the eggs adhered to the food. The sterility of this method was determined by placing squashed larvae on a petri plate containing bacterial growth medium. No bacterial growth was noted. Mold or yeast contamination was occasionally noted in the culture bottles (< 5%). These bottles were detected by the characteristic growth and odor of the contaminants.