Marshak, A. Salivary chromosome slides. Examination of slides prepared by the technique previously described and mounted in carmine-saturated glycerine, have been reexamined a year and four months after their preparation. The chromosomes are still well preserved with the bands well defined and with no apparent change since the first examination.

Ono, H. Induction of mutations by electric current. Larvae of D. virilis were placed in 24 mm^2 paraffin canal filled by ca. 1/100 N KCl solution. Direct current of 6 M.A. was transmitted through the canal for 7 minutes. Out of 162 F_1 flies raised from these treated larvae 37 were mutants (all of wing deformity). Under normal conditions this stock gave about one per cent wing deformed mutations.

Shapiro, N. The method of studying the process of mutation in a limited region of the chromosome. The investigators usually when studying mutation induced by X-rays use either the ClB method, or the method of attached X-chromosomes. In both cases mutations arising along the whole lenght of the X-chromosome are picked up. The solution of many important problems of genetics requires sometimes the study of the mutation process in a limited region of the chromosome. This may give the following possibilities: (1) to follow all the variety of mutation in a small region of the chromosome. (2) to establish the number of loci present in the region capable to mutate. The latter will enable us to estimate the minimum number of genes not only in the region studied but in the whole chromosome set. Using the current genetical method and wishing to isolate among the mutations found only those which are located in a definite region we are obliged to use the crossing-over method. The latter offers many technical difficulties and sometimes is even not valid to solve the problem (when the mutation is associated with an inversion). We propose, therefore, to modify somewhat the ClB or attached X methods for cases when the investigator wants to study the process of mutation in a limited region of the chromosome.

We give two examples for the study of the left end of the X-chromosome in order to illustrate the modification we suggest.

(1) Yellow males are X-rayed and mated to attached-X-females, carrying a deletion. F_1 males with the deletion are selected and mated individually with ♀♀ XX. In case a lethal arose during treatment in the region of the left end covered by the deletion, the progeny of such a cross would give only males carrying the deletion. No yellow males will appear.

We are able, therefore, to pick up automatically only those lethals which are located on the extreme left end of the X-chromosome.

The same method can hold for the study of visible mutations. It is necessary for this purpose to examine both yellow and non-yellow males in the offspring of the cross.

(2) A yellow male is X-rayed and mated to ClB female carrying homozygous yellow and a deletion. F_1 Bar females with a deletion are selected and crossed individually to yellow males. In case a lethal arose in the X-chromosome during treatment in a region not covered by the deletion, no males appear in such a cross; if the lethal arose in the extreme left end of the X-chromosome only males carrying the deletion will survive.

The same principle as that given above will hold true for any region of the X-chromosome; it is only necessary to have a special duplication, producing no lethal or sterile effect on males or females.

The method for the study of the mutation process in a limited region of one of the autosomes is somewhat different. While for the study of mutation in separate regions of the X-chromosome it was necessary to have duplications, in the case of autosomes it is rational to have deficiencies. Let us consider the case of Np deficiency (Bridges, SKoog and Ju-Chi-Li, Genet. 1936). A heterozygous Cy male is X-rayed and mated to Cy/L females. L/+ (or Cy/+) males are selected and mated to females carrying in one of the chromosomes a deficiency Np. The lack of Np flies and the presence of Np/L (or Np/Cy) flies will indicate that a lethal arose in the region Np. All matings ought to be individual. The treated male must have only one normal chromosome which is to be analyzed. About 15 chromosomes are to examined from one X-rayed male, as it is possible that the chromosome under investigation contained originally a lethal in the region of the deficiency. In the latter case all the 15 cultures from one male will show the presence of a lethal.

Spencer, W.P. A new technique for growing Drosophila.

The method of Drosophila culture about to be described is not simply an improvement in current methods but rather a new departure so different that for the present in some laboratories it may be applied gingerly at first and only to certain special problems. The method consists in treating eggs, larvae, pupae and adults as distinct organisms in so far as their culture conditions are concerned. It favors spending as much time on the quantitative and qualitative study of eggs and larvae as has in the past been given to the study of the adult. This method is made possible by the discovery that the Drosophila female will readily deposit her eggs through a fine mesh of silk upon the proper medium. This fact makes it possible to standardize methods of culture all along the line and check each step by the use of adequate controls. With the wealth of material already at hand in the form of genetic tools and the new