Whittinghill, Maurice An aid in arranging flies for separating or counting them. To facilitate sorting and counting flies it is advantageous to have them arranged approximately in a line, which may be easily formed as follows. The flies are emptied from the etherizing bottle upon a card which has along its middle a flexible fold by which the card may be bent to form a trough. A few strokes of the brush distribute the pile of flies evenly along this groove. The card is now held flat with one hand while the other goes down the line casting each fly quickly to one side or the other with a brush handle or needle, thus sorting into two groups. If further classification is necessary, these two groups may be swept to opposite ends of the card, or to different cards, and each group easily arranged for the next sorting. After such a sorting each of the groups is found to lie in approximately linear order, which makes counting simple. Finally the card may be bent again to make a chute for dispensing the flies accurately into the morgue.

Stern, Curt Technique for the study of certain genetic constitutions in hypodermis spots. One tool in studies on gene action is the production of mosaic spots. Their appearance is based primarily on the occurrence of somatic segregation. A heterozygous cell Aa segregates into two cells AA and aa. If aa represents the genetic constitution to be tested and if the cell aa is viable and divides, a spot will appear. Often the genetic constitution to be tested in spots leads to inviability of the segregate thus not resulting in a visible aberrant area. The frequency of somatic segregation is rather variable so that conclusions as to inviability of certain constitutions can be drawn with reservation only, considering the possibility of absence of segregation. However, the following method furnishes reliable controls. Let a be the gene to be tested and b and c genes in the same linkage group effecting hypodermal characteristics in small spots. By mating flies of the constitution abC/ABc are produced. Somatic segregation will lead to abC/abC and ABc/ABc cells. The latter, known to be viable, will be able to produce a spot; the former, if viable will appear in direct contact with the ABc/ABc spot as an abC/abC twin spot. If aa leads to inviability no twin spot will be formed. In case of sex-linked genes yellow (y) may be used for b and singed^3 (sn^3) for c, so that either only single sn^3 spots or y next to sn^3 twin spots will be found (both y and sn^3 being recognizable as characteristics of even-single setae). Somatic segregation is caused by four strand crossing-over. If it occurs to the right of all loci studied, the foregoing holds true completely except for developmental reasons which may make the mosaic areas so small as not to cover at least one seta per single spot. Somatic crossing-over between the genes studied will not lead to twin spots. However, the frequency of somatic crossing-over at the spindle fibre region is high enough to produce a sufficient number of potential twin

spots.

Frequency of spots: Variable in different experiments from one spot on fractions of a percent to one spot on ten and more percent of all individuals. The frequency is increased considerably if the individuals carry an autosomal Minute (use stocks like Rochester #68, DIS-5).

Size of spots: From one seta to whole imaginal disk, very rarely larger.

Location of spots: Variable. The smaller spots, which in most experiments are the frequent ones, occur preferably on the abdominal tergites. Careful inspection under about 30x magnification is necessary for detection. (See note in DIS-5 on "foot-focusing device").

Harnly, Morris H. Wing measurements. The following method has been found satisfactory for making wing measurements: The Spencer Drawing Apparatus No. 345 MS (list price $62.00) on which a compound microscope can be mounted is used to project the wings. A 16 mm. objective and 10 X ocular are used. The size of the projected wing is determined by the distance of the microscope above the drawing board. When first setting up the apparatus it is advisable to project a wing and determine a height that will place the entire wild-type wing on the drawing paper. Ordinary 8 x 11 paper can be used for the drawings.

Having established the proper height of the microscope above the drawing board, a ruled 2 mm. slide is placed on the microscope stage and projected. This distance of 2 mm. can be marked off on a straight line on a permanent record sheet. Thereafter, whenever the apparatus is set up exactly the same magnification can be obtained by a proper adjustment of the height of the microscope above the drawing board (a slight movement of the draw tube may aid in this) using the 2 mm. slide and the record sheet as checks. The wing is removed from the fly with a McClure's angular-or-flat Iridectomy Scissors #c991 figure 2 (list price $9.00, Standard Scientific Supply Co.), mounted in 95% alcohol, projected and drawn. The length can be determined directly by projecting the 2 mm. ruled slide onto the drawings. An area equivalent to 4 sq. mm. can be obtained at the same magnification by projecting the ruled 2 mm. slide and measuring the square drawn with a Keuffel and Esser Compensating Polar Planimeter No. 4242. This will give by division the value in sq. mm. of one unit on the vernier. Measurements with the planimeter of the area of the wing drawings can then be converted into sq. mm.

Timofeeff-Ressovsky, N.W. and K.G. Zimmer. On the technique of radiation-genetic experiments. From both the genetic and physical points of view we want to lay stress on the following rules, the observation of which will be of great help for comparing and analysing the results of radiation-genetic experi-