these eggs the rate of radiation induced dominant lethals can be determined.[2]

A test for insemination of the females is done in the following way: At the end of the collection period the females are put individually into small culture tubes with standard medium. Because younger stages of oogenesis are much less sensitive to the induction of dominant lethals by X-rays, even strongly irradiated females, which have been inseminated, will deposit viable eggs after some time. Examining these cultures for progeny after 6 to 7 days allows for the detection of non-inseminated females by the lack of larvae or pupae in the tubes.

This egg collection method initially developed for the stock "Berlin wild" has been successfully adapted to a strain (XY/XY) with retarded maturation of the flies and reduced rate of oviposition. In this case 6 days old virgin females were used and the mating period as well as the egg collection period have been prolonged to 4 hours. With similar modifications the method has been used for experiments with a triploid strain and for tests where inseminated females were irradiated (Lütolf, Graf, unpublished).

The method can also be adopted for dominant lethal tests after irradiation of mature sperms in males. In this case single irradiated males are mated for a few hours with single females in small empty tubes. Then the females are put individually into the egg collection arrangements. Egg collection can be extended to many hours (e.g. overnight) since the cells to be tested have been transferred by a single copulation to the females, and no difficulties from differential radiosensitivity of various cell stages can appear.

Work supported by Schweizerischer Nationalfonds zur Förderung der wissenschaftlichen Forschung und Jubiläums-Fonds 1930 der ETH.

References: 1. Würgler, F.E., Ulrich, H. and Spring, H.W. Experientia 24: 1082, 1968. 2. Würgler, F.E., Petermann, U. and Ulrich, H. Experientia 24: 1293, 1968.

Williamson, J.H. and P. Stubblefield. University of California, Riverside, California. An efficient method of collecting homogeneous samples of stage 14 oocytes.

A cursory review of the pertinent literature will convince anyone that previously used methods of collecting samples of stage 14 oocytes are based on hearsay. Usually females are aged several days, mated, and the number of eggs per female limited to a maximum of 24. This practice is based on the assumption of twelve ovarioles per ovary and one stage 14 oocyte per ovariole. Our technique (borrowed from D.R. Parker) is to rear females in uncrowded cultures, collect virgins at twelve-hour intervals, and to store females for four days on new culture medium sprinkled with live dry yeast. Females are then lightly etherized, put into gelatin capsules, allowed to recover, irradiated and mated without etherization to males that had also been aged on yeasted medium. Matings were made on food warmed to room temperature and held at 25° C. with lights for twelve hours at which time all flies are discarded. Egg counts from individual females revealed that many produced more than 24 eggs in twelve hours. Subsequently two samples of 30 C(1)RM, y v bb / B^{S}Yy+ females, one group aged for four days, the other five days, were dissected and the number of stage 14 oocytes per female determined. The 4-day old females averaged 43.4 stage 14's (range: 22-68) and the 5-day old females averaged 45.8 stage 14's (range: 24-74). In most cases each ovariole contained two or three stage 14's and all ovaries were made up of 16 or 18 ovarioles. Ovarioles with three stage 14's contained no additional oocytes of intermediate stages, and only a few very early stages. A third group of thirty females of the same genotype, 4 days old, produced an average of 25 eggs per female in a twelve-hour interval (range:0-68).

Wild type females from a cross of Canton-S and Guasti-36-10 were collected and aged 4 days as described above. Fifty-nine females were dissected and averaged 84.4 stage 14's per female (range: 52-111). Sixty-three females from a cross of Oregon-R and Guasti-36-10 averaged 70.2 stage 14's per females (range: 39-104). Apparently strains differ in the rate of egg production and each experimental strain should be analyzed accordingly. It seems reasonable that as long as the number of eggs laid in a twelve-hour interval does not exceed the number of "stored" stage 14 oocytes, one can assume that a homogeneous sample is obtained.