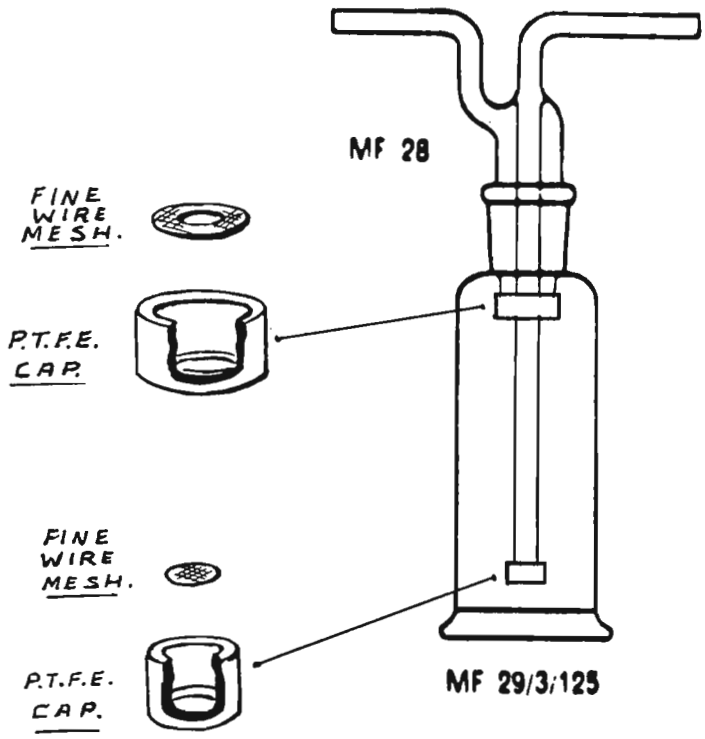

turned to their culture vials. Temperature control, by immersion in a water bath, is also possible.

This work was supported by NIOSH Contract No. 210-78-0026.

Graf, U. Institute of Toxicology, Swiss Federal Institute of Technology and University of Zurich, Schwerzenbach, Switzerland. An easy way to test for ring configuration of ring-X-chromosomes in D. melanogaster.

In experiments for mutagen-induced ring-X losses there is a permanent need for verification of the ring structure of the commonly used R(1)2 chromosome. There are several ways of doing this (Leigh 1976). Since cytological analyses may be misleading (Moore 1971), the most common way is to record crossing-over in ring-X/rod-X females. In a recent series of experiments we have found that this type of female produces enhanced rates of nullo-X eggs which lead to XO-male progeny. Six males from a R(1)2, y B/y^{+Y}·B^{S}; bw; st pP strain and five males from an identical strain with a spontaneously opened ring-X were crossed individually to virgin y cv v f females. The heterozygous F_1 females were then mated individually to Berlin wild males. In the F_2 only the male progeny were classified and counted; the bristle phenotype (forked) was not recorded. The results are shown in the table. It is evident that the females heterozygous for a ring-X chromosome produce one order of magnitude more XO-male progeny than those heterozygous for an open ring-X (5.5% and 0.1%, respectively). The presence of the ring-X is further demonstrated by the reduced frequency of females of recombinants in the progeny: The females heterozygous for the ring-X give rise to only 4.4% (57/1297) recombinants whereas the corresponding frequency of females heterozygous for the open ring-X is 35.6% (535/1503). In order to verify that the wild type male progeny are really XO, 30 of these males have been crossed to virgin w females. None of these crosses proved to be fertile.

The experiment has been repeated with the same procedure but using y w females to produce ring/rod heterozygous females. The results were essentially the same (104/2709 = 3.8% XO-males). It is therefore concluded that the registration of phenotypically distinguishable XO-males in the progeny of ring-X/rod-X females is an easier way to check for the ring structure than the laborious registration of crossing-over phenotypes.

[See table on following page.]

References: Leigh, B. 1976, Genetics and Biology of Drosophila, Vol. 1b, pp. 505-528; Moore, C.M. 1971, Can. J. Genet. Cytol. 13:164-166.

Supported by the Swiss National Science Foundation, Project No. 3.156-0.77.

Male No.	Yellow males								Wild type XO-males (%)	Total
	cv v +	+ + B	cv v B	+ + +	cv + B	+ v +	cv + +	+ v B		
Ring-X males										
1	127	167	2	3	3	4	4	1	17 (5.2)	328
2	147	163	1	4	1	3	3	1	17 (5.0)	340
3	86	113	2	2	1	0	0	0	15 (6.8)	219
4	60	66	1	4	2	1	2	2	9 (6.1)	147
5	85	113	1	2	0	2	2	0	10 (4.7)	215
6	61	52	0	0	0	3	0	0	8 (6.5)	124
Sum	566	674	7	15	7	13	11	4	76 (5.5)	1373
Open ring-X males										
7	91	72	18	21	22	28	0	2	0	254
8	120	132	15	28	35	38	1	5	1 (0.3)	375
9	77	96	18	20	26	27	0	2	0	266
10	114	114	31	35	32	46	1	4	0	377
11	76	76	21	17	23	15	3	1	0	232
Sum	478	490	103	121	138	154	5	14	1 (0.1)	1504

Gupta, A.P.† Harvard University, Cambridge, Massachusetts. [Present address: Cidade Universitaria UFRJ, Rio de Janeiro, Brazil.] A new technique for collecting Drosophila eggs.

Generally, Drosophila eggs are collected by having flies oviposit in bottles on spoons containing food medium or in petri dishes on colored food medium. The well fed adults are usually allowed to oviposit 24 to 48 hours to collect an adequate egg sample. It is difficult to collect eggs of sufficient sample size from a number of crosses or strains simultaneously. To facilitate collecting large egg samples from a number of crosses simultaneously over a short period of time, I modified the prevailing techniques with excellent results. The success of this technique depends upon starving the flies shortly before permitting them to oviposit.

25-30 pairs of newly emerged D. pseudoobscura were allowed to mate in vials for 5-10 days at 24°C under optimal rearing conditions. They were then transferred to empty half-pint milk bottles for 45-90 minutes at room temperature. The time of starvation is determined by noting when the activity of the flies diminishes. At this time, a teaspoon containing Carpenter's medium with food coloring and covered with a tin layer of dead or live Fleishmann's yeast suspension is put into the bottle. If dead yeast is used, prepare the solution 2-3 days before use. The thin layer of yeast suspension is allowed to dry before the spoon is put into the bottle. The back of the spoon must fit firmly against the side of the bottle to prevent females ovipositing between the spoon and the bottle. The spoons with large numbers of eggs are removed after 6-14 hours.

It would appear that the starved females retain their eggs until they once again are able to feed. At that time they lay their eggs in profusion. For a research project, I had to collect 1800 fertile eggs for each of two parental and two F_1 classes, for a total of 7200 eggs, to be tested simultaneously. Using this technique, I had no trouble in collecting the required number of eggs in a short period of time. The technique was further tested using 25-30 pairs of D. melanogaster. Approximately 1000-2000 eggs were collected in 1-3 hours. Thus this method is probably useful for collecting large numbers of eggs in a number of species in a short period of time.

This work was supported by NIH Grant GM 21179 to R.C. Lewontin.

†In memory of Prof. Th. Dobzhansky