Kessler, Seymour. Columbia University. Mating speed and mating preference in two species of Drosophila.

Ethological (sexual) isolation in Drosophila is believed to result from an interaction between two factors; sexual drive and mating discrimination (Mayr, 1946; Spieth, 1951); the exact nature of the relationship between these two factors, however, has never been clearly understood. It has been supposed by Mayr (1963, p. 101) and others that flies, particularly females, that are slow to mate would exercise greater discrimination in mate selection than fast ones. This implies that an inverse relationship may exist between mating speed and discriminatory ability. This position has been tested by means of multiple-choice sexual isolation tests utilizing mutant strains of D. pseudoobscura (gl) and D. persimilis (or) that have been selected both for slow and fast mating speed.

Preliminary results show no support for this position; the isolation indices for tenth generation flies being 0.97 for the fast line, 0.89 for the slow line and 0.86 for controls. Further studies are currently in progress. Research supported by NSF Grant NSF-GB-1906 to Professor Howard Levene and NIH Grants 2TI-GM216-05 and 5TI-GM216-06.

References: Mayr, E. 1946. PNAS, 32:57-59; 1963. Animal Species and Evolution. Spieth, H. T. 1951. Behaviour, 3:105-145.

Kitagawa, O. Tokyo Metropolitan University. Japan. Heterozygous effect of induced recessive lethals accumulated on second chromosomes of D. melanogaster.

More than sixty lethal free second chromosomes were extracted from the heterozygous population of D. melanogaster which was maintained for six months. Male flies with normal viability when homozygous were irradiated by 500 r of X-rays. Thirty four second chromosomes carrying induced recessive lethals were obtained. Double and triple lethals were accumulated in cis-phase on second chromosomes through recombination of females with two or more lethals in trans-phase. In this experiment, 40 normal, 34 one, 15 double and 9 triple lethal strains were used. Viability of wild phenotype flies were determined by the Cy-Pm technique. Following results are obtained:

No. of lethals per zygote	No. of crosses	Mean no. of flies per cross	Preadult viability (Cy/Pm = 1.0000)
0	64	417.7	1.0100±.01924
1	108	702.6	.9942±.01587
2	122	364.7	.9842±.01379
3	102	465.2	.9728±.01352
4	51	523.3	.9580±.01839
5	20	494.4	.9377±.02934
6	6	632.7	.9177±.06658

Hand in hand with the increase of the number of lethals per zygote, the viability decreased rapidly. This synergistic interaction between lethals is very relevant to the problem of the maintenance of genetic loads in natural populations.

Banks, J. L. The Ohio State University. Surface sterilization of D. melanogaster eggs.

To establish axenic cultures of D. melanogaster or to harvest early embryonic stages aseptically, surface sterilization of eggs is necessary. A technique similar to that of Mitsuhashi and Maramorosch, 1963, using 0.1% Hyamine's solution for a period of time up to 5 min. does not interfere with embryonic development.

Reference: Mitsuhashi & Maramorosch. Aseptic Cultivation of Four Virus Transmitting Species of Leafhoppers (Cicadellidae) Contrib. Boyce Thompson Inst. 22(4):165-173, Oct.-Dec.1963.