Hunter, Alice S. Centro Experimental de Estudios Superiores, Barquisimeto, Venezuela. Mating preferences of iso-female lines of D. mesophragmatica.

Certain iso-female lines of Drosophila mesophragmatica of Bogotá, Colombia differ from others in that they can be crossed with D. pavani and D. gaucha (Hunter & Hunter '64). Studies were made of several of these lines in order to test for possible isolating mechanisms between the "crossing " and "non-crossing" lines.

Male choice experiments were carried out with virgins of three weeks of age. In order to distinguish the two females, one anterior scutellar bristle was removed from one of them. The three unetherized flies were introduced into a vial at 9 AM and the vials observed till noon. When a pair copulated, the non-copulating female was discarded and the identity of the "selected" or "receptive" female was determined. The results are shown in Table 1.

Table 1

Female line		Copulas	Female line		Copulas	Male line		Chi Square
Cross	3	61	Non	57	16	Non	54	26.29
Cross	3	46	Non	57	18	Cross	3	12.25
Cross	3	30	Cross	45	21	Non	54	1.58
Cross	3	28	Non	53	20	Non	54	1.33
Cross	3	33	Non	60	24	Non	53	1.42
Cross	3	26	Non	60	27	Non	60	0.02
Cross	22	38	Non	53	21	Non	53	4.89
Cross	22	41	Non	53	40	Cross	3	0.01
Cross	22	20	Non	54	23	Cross	22	0.21
Cross	44	34	Non	53	17	Cross	3	5.78
Cross	44	23	Non	53	25	Cross	22	0.08
Cross	44	59	Non	60	29	Non	60	10.22
Cross	45	25	Non	54	27	Cross	44	0.08
Cross	45	32	Non	54	25	Non	57	0.86
Cross	22	22	Cross	45	29	Cross	45	0.96

It can be seen that in certain combinations there are preferences. However they are not simply preferences of "crossing" males for "crossing" females and vice versa nor are they simply homogamic preferences within a line. Female choice experiments were also carried out but no significant differences suggestive of preferential mating were found. Further experiments are under way in order to try to clarify these results.

Reference: Hunter, Alice S. and Robert A. Hunter, 1964. The mesophragmatica species group of Drosophila in Colombia. Ann. Entomol. Soc. Amer. 57:732-736.

Minamori, S. Hiroshima University, Hiroshima, Japan. A killing agent found in a natural population of D. melanogaster.

Some flies having a killing agent were found in sampled flies of D. melanogaster from a natural population in 1964. The number of their offspring was reduced distinctly, and the distorted segregation of second chromosomes in the offspring was observed by using dominant marker genes.

The killing agent was transmitted from both females and males to their progenies. The agent had been maintained by a carrier strain, though its all original chromosomes were substituted with marked chromosomes. However, most strains, having the killing agent originally, had lost it within one year. The killing agent seemed to have been transmitted by copulation from males to females and by contact of larvae. The development or multification of the agent at 30° C was faster than that at 20° C. Flies under two days old could not transmit the agent to their progenies. Such experimental results indicate that the killing agent might be an infective microorganism for flies.

The survival rates of flies carrying Cy, L, Pm or bw^D chromosomes respectively to the killing agent were observed to be different. The similar experiment was performed by using 184 second chromosomes isolated from a natural population. The survival rate of flies carrying chromosomes derived from the carrier strain was higher than that of flies having no infection. Flies carrying a lethal chromosome reduced the survival rate more than flies carrying a quasinormal chromosome .