del Solar, E. University of Chile, Santiago, Chile. The effect of density on locomotor activity in D. melanogaster.

The movement of groups of 50, 100, 150, 200, 250 and 300 males and females was measured over a period of 15 hours in the following apparatus: A translucid plastic tubing 3 cm in diameter and 37 meters long, subdivided into sections one meter in length, coiled in a spiral of one meter in diameter, mounted on a wooden frame with one light bulb in the center of the top and one in the center of the bottom.

Density	% of Migrant	Mean distance of group
50♂	27.3	2.64 ± 1.13
100♂	29.1	1.82 ± 0.49
150♂	44.7	2.88 ± 0.74
200♂	42.4	3.18 ± 1.01
250♂	64.9	5.36 ± 0.84
300♂	61.2	6.09 ± 1.77
50♀	43.6	3.86 ± 0.84
100♀	41.6	3.25 ± 1.16
150♀	51.5	3.81 ± 0.57
200♀	58.8	5.90 ± 0.95
250♀	53.5	6.72 ± 1.80
300♀	60.6	6.15 ± 0.10

The table shows that females exhibit greater locomotor activity than the males; only the individuals which moved over one meter were considered. A correlation between density and the mean distance travelled by the flies in the group gives the following results: 0.369 for females and 0.838 for males, the values being significant in the latter. ($P = 0.05$). The regression lines were of: $x = 0{,}0053y + 4.350$ and $x = 0.014y + 1.210$ for females and males respectively.

If the sections of 5, 10, 15, 20, 25, 30 and 37 meters are added, the frequencies show a density gradient; that indicates that in the group of 200 males, at least one reaches the thirty seventh meter, while this already occurs in the 100 female group.

Minamori, S. Hiroshima University, Japan. One-sided gamete recovery from delta-carrying heterozygous males and females of D. melanogaster.

The extrachromosomal elememt denoted by delta was found and has been studied in our laboratory (Minamori, 1969). Delta is retained and transmitted by certain second chromosome lines denoted by sensitive chromosome and symbolized by S^b. However, it is not retained by the other sensitive lines symbolized by S^c.

In the course of experiments, it was detected that S-Cy/S-5(S-Cy, Cy gene carrying S^c chromosome; S-5, S^b chromosome) heterozygous males and females produced only Curly offspring and no non-Curly offspring when the heterozygous flies carried an appreciable amount of delta. However, the segregation ratio was always normal when non-Curly flies were recovered; Curly and non-Curly flies were recovered in a 1:1 ratio. In these normal recoveries, no instance was found of deviation from a 1:1 ratio. It may be said, therefore, that the progeny recovery from the heterozygotes is either one-sided or normal.

Egg-fly counts were made and the results obtained are shown in Table 1. It is most plausible that the one-sided progeny recovery from male heterozygotes may be due to the production of only Cy-bearing spermatozoa, and not due to the inviability of S-5-bearing progeny. A similar interpretation might also be applicable to the one-sided recovery from female heterozygotes. The S-5-bearing spermatozoa may be dysfunctional. Delta appears to cause damage to S-5 chromosomes at an early embryonic stage of the carrier in such a manner that the gametes receiving descendants of this chromosome may become dysfunctional.

Table 1. Egg-fly counts for recoveries of progeny from S-Cy/S-5 males and females in the mating with homozygotes for a wild second chromosome.

Cross	No. of eggs laid	No. of progeny recovered		Flies/Eggs (%)
		Curly flies	non-Curly flies	
S-Cy/S-5(±)♂ x +/+♀ (Control)	706	258	286	77.06
S-Cy/S-5(∂)♂ x +/+♀	884	678	0	76.69
S-Cy/S-5(∂)♀ x +/+♂	841	385	0	45.78

Reference: Minamori, S., 1969 Genetics 62: 583-596.