signs of F indicates a tendency for heterozygote excess among living flies. This hypothesis was tested by computing heterogeneity Chi-squares for each locus as shown below. The Pgm locus clearly shows the effects of selection, and there is a suggestion of an effect at the Odh locus. These two loci are linked (5.8 map units) on chromosome III; however, the Est 6 locus shows no such effect even though it is closely linked (7.4 map units) to the Pgm locus.

	Mdh	Adh	Odh	Est 6	αGpdh	Pgm	Total
Chi-square	0.86	3.45	5.65+	0.66	2.07	9.09‡	21.78*
DF	2	2	2	2	2	2	12

* $p < 0.05$ ‡ $p < 0.025$ + $p = 0.059$

Biochemical studies of the in vitro thermal stability of the major alleles at the Adh (Clarke et al., Biochem. Genet. 11:141), Est 6 (Cochrane, Nature 263:131) and αGpdh loci (Miller et al., Biochem. Genet. 13:175) show that the S electromorphs at the Adh and Est 6 loci are more stable. Although the shifts in gene frequencies apparent in the above data are not significant, they do agree with predictions from biochemical studies. Supported by NIH grant GM23706.

Robertson, A. Institute of Genetics, Edinburgh University, Scotland. Quantitative variation on the fourth chromosome of D. melanogaster.

Following earlier indications (Madalena and Robertson, Genetical Research 24:113), I investigated the effect of different fourth chromosomes from lines selected for high and low sternopleural score (averaging 48 and 8 bristles, respectively) differed in mean score for different bristles as indicated in the table. In the background of the high selected line, there are indications that the difference in sternopleural score between the two selected homozygotes is more than ten bristles. The low chromosome is almost completely recessive in score to the high and is apparently rare in the base population. Fourth chromosomes from four other low sternopleural lines each had a distinct pattern of scores for the three types of bristles. Differences were also found in female abdomen pattern and one chromosome apparently carried the lost mutant "scutenick".

Source of fourth chromosome	Sternopleural	Abdominal (fifth only)	Ocellar
high	13.2	16.2	6.5
low	11.3	13.0	4.1
unselected	13.1	15.7	6.3

Romans, P. Univ. of California, San Diego, La Jolla, California. Gene conversion in mei-9^a, a crossover defective mutant in D. melanogaster.

In D. melanogaster females homozygous for mutant alleles at the mei-9 locus, crossing over is reduced uniformly in all genetic intervals studied (to about 8% of the wild type map in mei-9^a). From these data it has been inferred that the wild type product of the locus functions directly in the process of exchange (Baker and Carpenter, 1972). Analysis of mutants at this locus has shown that the wild type product is also required for normal mitotic chromosome stability in males and females (Baker et al., 1976, 1978; Gatti, 1979), for repair replication (Nguyen and Boyd, 1977), and for excision repair (Boyd et al., 1976). To probe the function of this gene further, and to investigate the relationship between crossing over and intragenic recombination, I have examined the ability of females homozygous for mei-9^a to carry out intragenic recombination.

Recombination with the rosy (ry) locus was assessed using the purine selection system (see Chovnik et al., 1977 for review). The crosses were as indicated in the table. When parents were removed from bottles after 3 days of egg laying, the developing zygotes were treated with 0.8 ml 0.185% (w/v) aqueous purine added to the food, or with 0.8 ml deionized distilled water.