Sample no.	No. of sperm	No. of eggs	DPM	DPM/cell	^{3}HTdR/cell**
1	3868		9050	2.60	
2	3216		8640	2.68	
3	11643		26848	2.31	
4	3084		8750	2.84	
X	21811		53288	10.43	
$\overline{X}$	-		-	2.61	2.61×10^7
5		1000	2898	2.76*	
6		1000	3528	3.36*	
7		1000	3076	2.93*	
8		1000	3172	3.02*	
X		4000	12674	12.07	
$\overline{X}$		-	-	3.02	3.02×10^7

The difference between the 2 means is not significant at 5% level.

* Since the probability of tritium disintegration = 1.02×10^{-7}; disintegration/min-tritium, therefore, 1 disintegration - 1×10^7 ^{3}H

** Modified with a coefficient of 0.957, based on the presumption that 5% of the eggs are dispermic

contrast microscope. The coverslips were removed after freezing on dry ice. Cells attached to the slides and coverslips were rinsed into a graduated test tube with 4% sodium lauryl sulfate and homogenized. Samples of the homogenates were counted with the foregoing scintillation counting technique. The results of these comparisons are in the table.

These results clearly show: (1) that the two techniques are reasonably consistent among samples; and (2) that the fertilized eggs in these experiments gave slightly higher radioactivity counts. However, statistic analyses indicate that such difference is non-significant. This implies that fertilized eggs can be used in the radio-assay of the sperm cells. Since eggs are much easier to manipulate than sperm, the advantage of such an approach is apparent. Further, it may be noted that the wall of the seminal vesicle is comprised of somatic cells. Nevertheless, results from parallel observations on radioautography indicate that these cells do not actively incorporate tritiated thymidine during the treating period. Hence, the presence of these somatic cells in the sample should be acceptable as far as the accuracy of scintillation counting is concerned.

References: Felix, R. 1971 DIS 47:129; Hildreth, P.E. and J.C. Lucchesi 1963 Develop. Biol. 6:262; Hunt, V. 1970 DIS 45:179.

Lefevre, G., Jr. and K. Peterson. San Fernando Valley State College, Northridge California. An unusual Notch mimic: glossy-like (g-1).

In examining an F_2 culture from an EMS-treated + male, we observed viable males that display many of the characteristics of mutations at the Notch (N) locus: strongly notched wings, thickened Confluens-like wing veins, prominent "deltas" at the junctions of the longitudinal veins with the wing margins, extra hairs on the thorax and legs, shortened tarsal joints, and roughened, shiny bright somewhat mottled eyes closely resembling those of facet-glossy (fa^g). In addition, all macrochaetes are thin and delicate. The mutant, however, is not allelic with Notch or any of its alleles; it is, in fact, located less than a map unit to the left of wavy (wy) in Section 11D of the salivary chromosome. Nonetheless, in the presence of Dp w^{+51b7}, which extends from 3C2 through 3D6 and includes the N^+ locus, the phenotypic expression of the mutant, which we have named glossy-like (g-1), becomes virtually normal: small deltas remain, there is some thoracic hairiness, and the eyes are not completely smooth. When raised at 29°, g-1 fails to emerge from the pupal case, and the presence of Dp w^{+51b7} does not protect it from this temperature sensitivity. No chromosomal aberration is present and recombination appears to be normal. When g-1 is in heterozygous combination with a long, male-lethal euchromatic insertional translocation, T(1→3R)C92, having breaks at 6E1-2 and at (or immediately adjacent to) band 11D9-10, the g-1 phenotype is expressed. Both g-1 and wy are uncovered by

a short deficiency, Df(1)N12, that extends from 11D1-2 to 11F1-2.

By crossing over, N alleles, including fa^g and sp1, were combined with g-1. Males carrying both fa^g and g-1 show an exaggerated phenotype, have difficulty in eclosion, and usually survive only briefly. The combination with sp1 has a somewhat less drastic effect. Males with N^{264-40} (cytologically normal), g-1, and Dp w^{+51b7} exhibit simply the g-1 phenotype. Two other euchromatically located N^+ duplications interact with g-1 exactly as does Dp w^{+51b7}; however, three heterochromatically located N^+ duplications, including w^+Y, produce a noticeably less effective suppression of the g-1 phenotype.

Although we can rule out the origin of g-1 as resulting from the transposition of part or all of the N^+ locus from 3C7 to 11D9-10, we can not yet decide whether the g-1 locus is a persisting duplicate locus once identical with N, or is an unrelated locus whose altered product now interacts or competes with the product of the N locus. If regulatory genes in Drosophila can occur at a distance from their subject loci, in contradiction to the Crick (1971) model, then the g-1 locus might be a regulator of the N locus, or vice versa.

To the best of our knowledge, this is the only case, except for zeste and white, in which the presence of an extra dose of one locus modifies the expression of a mutant at another, distantly located locus.

Valentin, J. University of Stockholm, Sweden. Effect of maternal age on recombination in X in D. melanogaster.

This effect is usually described, following Bridges, as a decrease of recombination with increasing age during the first ten or so days of a female's egglaying (later on followed by an increase and another decrease). Deviations from this pattern are of course known to all recombination workers. One such deviation, which has never been expressly described in the literature, concerns the X chromosome. One sometimes sees authors express surprise that maternal age does not influence recombination frequency in the region around vermilion (v: 1 - 33.0) which is in the middle of both genetical and cytological maps. However, maternal age effect in X consists of two components: an increase of recombination with increasing age distally and a decrease with increasing age proximally. The v region lies where these counteracting effects take out each other so that no maternal age effect is observed. This phenomenon is illustrated in Figure 1, where the linear regressions of recombination on maternal age for different X chromosome regions are shown.

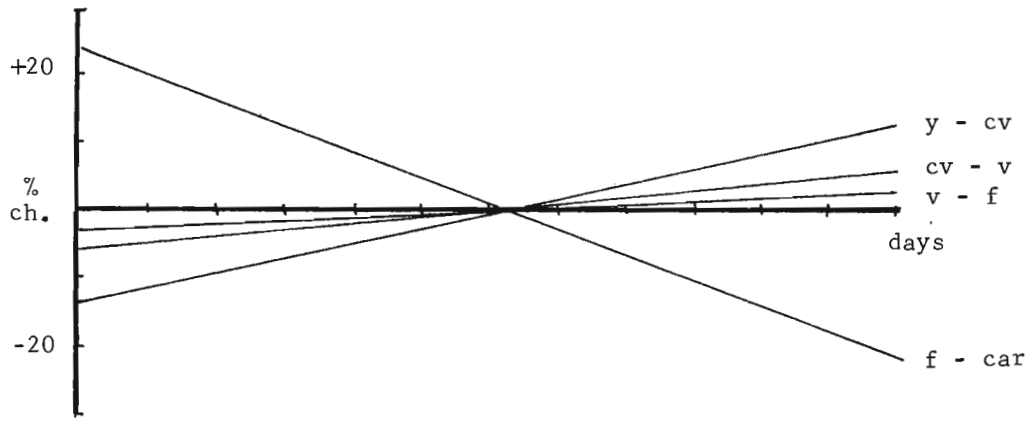

Figure 1. Linear regressions of the entity [(observed rec. in one brood-mean rec.)/ mean rec.] on maternal age for different regions of X. Material from Bateman and Chandley (1965), Roberts (1962), Ting and Walker (1969) and Valentin (1969). Y axis 100 $[(\text{Obs.} - \bar{x})/\bar{x}]$; X axis, maternal age in days.

Recombination is expressed as percentual difference from overall mean, i.e., $100[(\text{Obs.} - \bar{x})/\bar{x}]$ in order to make results from different experiments compatible, and the correct calculation of variance for this unit would be difficult. If we however for purposes of demonstration only regard it as normally distributed, we obtain the following regressions and P-values for regressions being unreal: y - cv, b = 2.20, P = 0.06; cv - v, 0.89, 8.06; v - f, 0.34, 0.52; f - car, -3.72, 0.01.