Table II details the progeny types recovered from the cross XXB$^s$Y;SM1, Cy/+;Cx, D/+♀♀ x C(3)L, ri;C(3)R, Sr♂♂. The number of progeny is remarkable considering the small scale of the experiment. It is noted that the maternal Y is virtually always recovered in patroclinous-3 progeny indicating frequent Y-3 associations. Also, there seems to be a pronounced discrepancy in the recovery of such progeny.

Table II

Progeny from the cross XXB$^s$Y;SM1, Cy/+;In(3LR)CxD/+♀♀ x C(3)L, ri;C(3)R, sr♂♂

| Patroclinous-3 | | | | Matroclinous-3 | | | | Intersexes | |
|---|---|---|---|---|---|---|---|---|---|
| genotype | ♂♂ | ♀♀ | total | genotype | ♂♂ | ♀♀ | total | genotype | total |
| B$^s$Y;+/+;(ri, sr) | 3 | 8 | 11 | +/+D/+ | 8 | 26 | 34 | +/+/+;C(3)L/C(3)R/+ | 1 |
| B$^s$Y;Cy/+;(ri, sr) | 8 | 6 | 14 | Cy/+D/+ | 7 | 14 | 21 | Cy/+/+;C(3)L/C(3)R/+ | 8 |
| +/+;(ri, sr) | 1 | 1 | 2 | B$^s$Y+/+D/+ | 1 | 1 | 2 | | |
| | | total | 27 | | | total | 57 | total | 9 |

In the course of this study it was noted that adult progeny are more readily recovered from matings of SM1/+ females to attached-3 males than from a mating of such females to attached-2 (b, cn) males. It would seem that aneuploid-2 eggs would be best recovered by complementary sperm from C(2)L, b;C(2)R, cn males. As mentioned previously only 1/16 of aneuploid-2 eggs are recoverable in matings to attached-3 (ri, sr) males. This result led to the conclusion that meiosis in C(2)L, b;C(2)R, cn males is not entirely random in regard to segregation of isochromosomes. This is further indicated in that 41% of the eggs laid by these attached-2 females develop into adults. In contrast the figure for the C(3)L, ri;C(3)R, sr stock is 19%. This figure agrees fairly well with a theoretical maximum of 25% if meiosis in females is regular and if segregation of the isochromosomes in males is random.

References: Chadov, B.F., 1969 Non-homologous pairing and non-disjunction of the second chromosomes in oogenesis of Drosophila melanogaster. Genetica 5:190-192; Forbes, C., 1962 The effect of heterozygous inversions on primary non-disjunction in Drosophila melanogaster. Genetics 47: 1301-1311; Lindsley, D.L. and E.H. Grell, 1969 Spermiogenesis without chromosomes in Drosophila melanogaster. Genetics Suppl. 61:1, 70-78.

Dapples, C.C. Rocky Mountain College, Billings, Montana. Ovarian morphology of the singed$^{36a}$ mutant of D. melanogaster.

In this study feulgen-stained whole mounts of ovaries from females homozygous for the singed$^{36a}$ mutation were compared with Oregon-R wild type ovaries of identical age. The singed$^{36a}$ ovary is about half the size of the Oregon-R wild type ovary. The reduced size is due in part to the lack of oocytes in vitellogenic stages. There are also fewer chambers per ovariole and fewer ovarioles per ovary than in wild type ovaries. In wild type there are an average of a little over six egg chambers per ovariole and this number remains constant over the ten day period studied (0-10 days). In singed$^{36a}$ however, there are three egg chambers per ovariole for the first two days, the number then increases to five by day four, but then steadily decreases until there is only an average of one chamber per ovariole by the tenth day. This reduction in the number of egg chambers per ovariole is due to the increasing amount of degeneration present. Although the average number of ovarioles in a singed$^{36a}$ ovary is less than that for wild type the number remains constant over the ten day period studied. The egg chambers within a singed$^{36a}$ ovariole are generally shaped abnormally and packed against one another. This packing is caused by a blocking of the lateral oviducts with degenerating chambers.

Degeneration appears in most chambers at the time when vitellogenesis should start or else develops because yolk synthesis does not commence. In either case degenerating egg chambers are already present in one day old flies. That is, about nine percent of the egg chambers appear pynotic and this degeneracy increases linearly with age up to ten days when most of the egg chambers appear to be dead.