Remondini, D. J. and G. D. Hanks. University of Utah, Salt Lake City. Location of a second chromosome factor, RD2, as one of the Recovery Disrupter (RD) components.

It was observed in repeated tests that a second chromosome heterokaryotype (RD2/+) produced as high a percentage of females as the homokaryotype (RD2/RD2). Two chromosomes without RD activity were used in the analysis. One carried the markers fes 1t, and the other carried the markers Bl L^2. Females which were heterozygous for fes 1t but with RD background were mated to males heterozygous for Bl L^2 with RD background and the resulting Bl L^2 male progeny were mated to stock females containing fes and 1t (to determine the fes 1t constitution of the male) and to 5 tester females in order to detect the presence of the second chromosome RD factor. Males that carry the RD factor almost invariably give percentage female values greater than 60%. Males were considered adequately tested (hence included in the data) if they produced at least 200 progeny. Pooled results (Table 1) of repeated experiments show a clearcut association of RD activity (defined as 60% females or above) with both the fes^+ and $1t^+$ markers ($p < .001$ in each case). Since fes is at 5 map units the location of the RD factor is clearly in the left arm. The location (based on 78 progeny tested) is estimated to be at approximately 32. It is suggested that the factor be named RD2. (Supported by NSF Grant GB-456.)

Table 1. Crossover data from heterozygous females.

Constitution of Maternally Derived Chromosome			No. of Males Tested
+	RD2	+	25
fes	+	1t	20
+	+	1t	7
fes	RD2	+	11

Constitution of Maternally Derived Chromosome			No. of Males Tested
+	RD2	1t	10
fes	+	+	2
+	+	+	1
fes	RD2	1t	2

References: Erickson, J. 1965, Genetics 51:555-571
Hanks, G. D. 1964, Genetics 50:123-130

Details of this study may be found in: Remondini, D. J. 1964 "Second Chromosome Studies of a Case of Meiotic Drive in Drosophila melanogaster". M.S. Thesis, University of Utah Library, Salt Lake City, Utah.

Friedman, Lawrence D. Hiram College, Ohio. X-ray induced viability effects in spermatogonial cells.

Previous studies of the relative frequency of X-ray induced sex-linked lethal and detrimental mutations and their effect on viability have been done on mature sperm. Experiments, using basically the same experimental design and analysis as those previously, have also been carried out in relation to the effects on the spermatogonial cells. 1-3 day old males of the Basc and Canton-S strains were irradiated with 6000 r of X-rays which were administered in two equal fractions separated by a 24-hour interval. These males were then mass mated to virgin females for a fifteen day period before being entered into the actual experimental design (Friedman, 1964). A total of 1940 chromosomes were tested in this way. The induced sex-linked lethal frequency averaged 2.9%. This effect in the gonial cells resulting from a dose of 6000 r is comparable to the frequency in mature sperm exposed to 1000 r. The detrimental to lethal load ratio (D:L) was .115 which does not differ significantly from the D:L of .125 previously reported for mature sperm treated at a dose level of 1000 r. (This work was supported in part by a grant from the Hiram College Research Fund.)