

From the data comprised in table II, graphs were drawn plotting the reduction of the mean life span of *D. melanogaster* against *D. simulans*, *D. virilis* and *D. pseudoobscura* (Figs. 1, 2 and 3). The correlation coefficients (r_1 , r_2 and r_3) show no significant difference at a 0.05 level.

The derivatives from the graphs show the smaller radiosensitivity of *D. melanogaster* as compared with the other three species:

$$\frac{dy_1}{dx} = 1.0413$$

$$\frac{dy_2}{dx} = 1.0832$$

$$\frac{dy_3}{dx} = 1.5378$$

Following the same method *D. virilis* is 1.0494 times less sensitive than *D. pseudoobscura* and the latter species is 1.4137 times more sensitive than *D. simulans*.

References: Félix, R. 1968. Ann. Inst. Biol. Mex., Vol. 38 Serie Biol. Exp. (In press).
Nöthel, H. 1963. Genetics Today, Proc. XIth Int. Congr. Genet., Vol. I: 72-73.

Shiomi, T. Nagasaki University, School of Medicine, Department of Genetics, Japan. The mutagenic effectiveness of 14.1 Mev neutrons in post-meiotic germ cells of *D. melanogaster*.

Virgin males of Canton-S isogenic strain and dual purpose stock females ($y\ sc^{S1}\ Im^{(1)}d1-49\ sc^8; bw; st\ pP$) inseminated by Canton-S males were exposed to 14.1 Mev neutrons and male germ cells irradiated at post-meiotic stages, especially at sperm stages, were

tested for the presence of sex-linked recessive lethals and autosomal translocations (2;3). Each of the irradiated males were crossed to five virgin females in five successive one-day periods. Mutation frequencies in successive inseminations following irradiation were detected (Table 1).

Table 1. Mutation frequencies following mating sequence.

	X-linked recessive lethals in %				
	1st	2nd .	3rd-	Total(24hrs)	24-48hrs.
2000 rad	7.19	3.66	3.64	3.88	3.41
1280 rad	2.65	1.79	2.04	2.06	1.65
500 rad	2.46	1.18	1.41	1.58	1.04
0 rad	0	0.88	0	0.11	0
	Autosomal translocations in %				
	1st	2nd .	3rd-	Total(24hrs)	24-48hrs.
2000 rad	3.79	3.65	3.19	3.34	2.63
1280 rad	2.65	1.55	1.54	1.68	1.54
500 rad	0.21	1.03	0.88	0.76	0.61
0 rad	0	0	0	0	0.18

It became clear that the mutation rates were not constant even during the first 24 hr with the mating sequence after neutron exposure. The shape of brood pattern curves varied with the stage of spermatogenesis and the age of irradiated males. The RBE of 14.1 Mev neutrons as compared with X-rays was demonstrated to be lower for recessive lethals than for translocations at all stages of spermatogenesis tested (Table 2).

Table 2. RBE of 14.1 Mev neutrons compared with X-rays

	X-Lethals		Translocations	
	1-day-old males	3-day-old males	1-day-old males	3-day-old males
Brood 1	0.83	1.58	1.21	1.63
Brood 2	1.15	1.92	1.27	2.22