TDR-1a									
1/2-1 1/2 days	27	3.7	29.6	33.3	59.2	96.2	96.2	96.2	96.2
1 1/2-2 1/2 days	36	0	0	5.5	33.3	83.3	88.8	100	100
2 1/2-3 1/2 days	43	0	0	6.9	27.9	69.7	97.6	100	100
3 1/2-4 1/2 days	28	0	0	7.1	28.5	57.1	96.4	96.4	96.4
4 1/2-5 1/2 days	28	0	7.1	17.8	28.5	64.2	60.7	71.4	75.0
TDR-BC_3									
1/2-1 1/2 days	5	0	40.0	100	100	100	100	100	100
1 1/2-2 1/2 days	6	0	33.3	100	100	100	100	100	100
2 1/2-3 1/2 days	15	0	13.4	80	100	100	100	100	100
3 1/2-4 1/2 days	21	0	4.7	66.6	85.7	95.2	100	100	100
4 1/2-5 1/2 days	11	0	18.1	100	100	100	100	100	100

In keeping with what has been reported earlier, the recovery times are shorter and the recovery percentages are higher than would have been the case had testing been conducted under standard conditions (14°C for 15 minutes). It is also seen that TDR-orange was influenced the most by the test and TDR-BC_3 the least, as was expected. But in addition, the older flies of each strain were, in general, more susceptible to CO_2 treatment than younger flies. This is reflected in TDR-BC_3 by the somewhat longer recovery time for the older flies (the 4 1/2-5 1/2 day old flies are an exception to this rule). For the other two strains, not only was recovery accomplished more slowly by older flies but survival decreased appreciably with age. After an age of four or five days, the recovery time and recovery percentage stabilizes, so that flies older than this recover in a similar manner until the onset of senility.

Bairati, A. Jr. and B. Baccetti. University of Milan and Entomologia Agraria Firenze, Italy. Observations on the ultrastructure of male germinal cells in the $X^{Lc}Y^{S}$ mutant of Drosophila melanogaster Meig.

We have subjected the testes of the $X^{Lc}Y^{S}$ mutant of Drosophila melanogaster to an electron microscope investigation with the techniques we use for studying normal spermiogenesis in the same species (Baccetti and Bairati, 1964 Redia 49: 1-29) with the object of obtaining comparative data on the ultrastructure of the flagellum in sperm that other workers consider to be immobile. The first conclusion we reached is that the majority of the sperm do not attain maturity, although the spermatid may undergo considerable lengthening and almost complete maturation, evinced by the development of the nucleus, of the mitochondrial derivatives and of the axial filament complex of the flagellum. Indeed all the cysts we examined presented degenerative features and no isolated mature sperm were observed. In the spermatids the mitochondrial derivatives presented several types of deviation from the norm and only rarely did they develop as in normal males. The alterations we observed were as follows: the presence of an electron opaque fiber in both of the mitochondrial derivatives that lie alongside the flagellum instead of in one of them only; complete absence of mitochondrial derivatives; separation of one or both derivatives from the axial filament; complete absence of the osmiophilic fiber inside both mitochondrial derivatives; vesicular swelling of one or both mitochondrial derivatives; the presence of a third element of the mitochondrial derivatives. These observations partially confirm the results of Shen (Zeit.f.Zellforsch. 1932, 15:547-580) and of Brosseau (Genetics 1960, 45: 257-274) regarding the sterility of males of this mutant, due to the absence of mature sperm through degeneration of the sperm and not because the mature sperm are immobile, but, owing to the greater resolving power of the electron microscope, one can detect abnormal spermiogenesis; since the alterations visible in the spermatids affect all the cells of the cyst, they probably begin at the premeiotic stage. The absence of a segment of the Y chromosome affects spermiogenesis by influencing the development of the mitochondrial derivatives.