Kekić, V. and D. Marinković Institute for Biological Research, Belgrade, Yugoslavia. The dispersion of D. subobscura after exposure to different light intensities.

Using a modified apparatus for the measurement of phototactic behaviour (Kekić et al. 1971), dispersion to five different light intensities (from 30 to 6500 lux) was measured separately in males and females of D. subobscura. A total of 614 progeny, 6-7 days old, of wild flies captured near Belgrade in the fall of 1970, were used, after being raised in an incubator at 20°C and ca. 60% humidity. The newly hatched males and females were separated by an aspirator and kept for five days in glass bottles with culture medium. Before the experiment, flies were transfered to new bottles, and kept for 12 hours in the absence of light. The results obtained are presented in the following Table.

Light intensity (in lux)		30	300	1300	3200	6500	N	$\bar{X}$
Percent of distribution	Males	4.8	7.5	14.3	19.8	53.6%	293	4327 lux
	Females	1.9	2.5	9.6	21.2	64.8%	321	5023 lux
	Total	3.3	4.9	11.9	20.5	59.4%	614	4687 lux

On the average, females are found to be more positively phototactic than males (χ^2 = 17.9; $p < 0.005$), which was repeated in a number of other experiments with the same species (Kekić, Marinković 1971).

References: Kekić, V., D. Marinković, N. Tucić and M. Andjelković 1971 DIS 46:148; Kekić, V. and D. Marinković 1971 Genetica 3:181-188, Beograd.

Johnson, T.K. and G. Lefevre, Jr. San Fernando Valley State College, Northridge California. Comparative mutability of cm, ct, and sn.

Deficiencies which involve both cm (18.9; 6E6) and ct (20.0;7B3-4) and include as many as 30 bands have been reported in Lindsley and Grell (1968); by contrast, no deficiency that includes both ct and sn (21.0; 7D1-2), which are separated by only 14 bands, has been reported. This discrepancy, combined with the large number of cytologically rearranged ct mutations but small number of such sn mutations reported in Lindsley and Grell, prompted an investigation of the mutational response of the cm-ct-sn interval. Approximately 21,500 F_1 female progeny of 7 day old In(1)dl-49, f males given 2000r X-ray exposures and mated to multiply marked females were examined for newly induced mutations at the N, cm, ct, and sn loci. The results (see Table) indicate that the frequency of recovered ct mutants is much greater than that of either cm or sn, higher even than Notches. This may be due to the high frequency of rearrangement breakpoints that affect the ct locus, as compared with the other loci.

Mutant	♂ viable	♂ lethal	sterile
N	0	10	10
cm	0	0	2
cm ct	0	2	0
ct	2	15*	6
ct sn	0	0	0
sn	0	0	1

* of 12 cytologically analyzed, 9 are associated with rearrangement; 3 are cytologically normal.

Among the F_1 female progeny were two deficiency mutants that expressed both cm and ct simultaneously and were fertile, but no mutants expressing both ct and sn were found, not even sterile ones. Of the cytologically analyzed ct mutants, two are deficiencies, the longer including 30 bands; but neither extends farther to the right than 7C1. No ct deficiencies reported in Lindsley and Grell extend farther to the right than 7C4. This fact, together with the scarcity of sn deficiencies, suggests the presence of a haplo-insufficient locus between ct and sn that prevents the survival of ct-sn deficiencies. The postulated locus, which should lie just to the left of sn, must prevent the development of females heterozygous for its deficiency. As a result, recoverable ct deficiencies ought to be skewed to the left, sn deficiencies to the right. The situation is somewhat analogous to that seen at vermilion (33.0; 10A1) where a locus just to the right of v eliminates many v deficiencies, but through F_1 female sterility, not inviability (Lefevre, 1969).