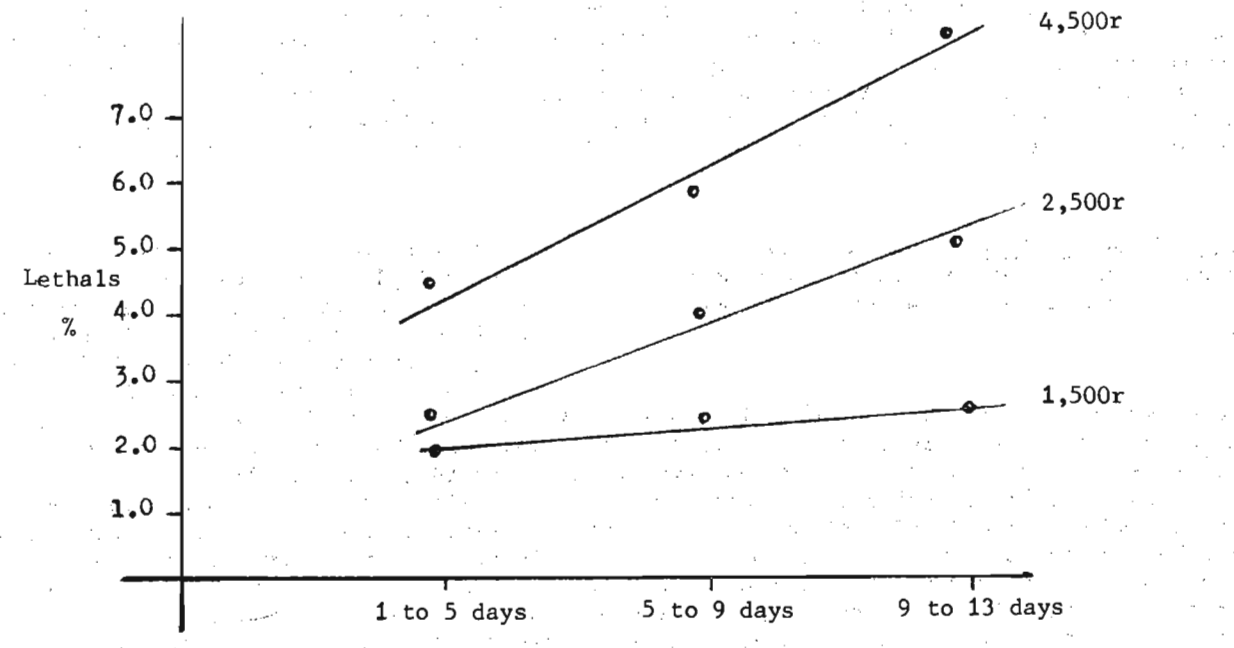
from the irradiated stages of spermatogenesis were delayed because the number of females and males is the same in each of the four-day P mass cultures. By this procedure the second brood of Auerbach's experiment is reached only after nine days.

Graph 1. Lethals induced in successive broods with three doses of x-rays.



Puro, J. and P. Arajärvi. University of Turku, Finland. Localization of cp, in, and ri by means of T(2;3)spy.

A number of the 3rd chromosome genes of D. melanogaster between st (44.0) and p (48.0) are in a strategic position due to their intimate linkage with the centromere. Yet the evidence is contradictory as to how some of these genes are distributed into the two chromosome arms. In particular, the position of the in (47.0) and ri (47.1) loci in relation to the centromere has been in doubt. On the basis of a new translocation designated as T(2;3)spy (see New Mutants, this issue) we have been able to delimit the cp, in, and ri loci to the left of the band 79B1 in the salivary chromosome map.

T(2;3)spy is a homozygous viable reciprocal translocation with the recessive wing character (spready) inseparable from it. Linkage data suggest the breaks to the left of B1 and at the cp-ri region respectively in the 2nd and 3rd chromosomes. After introducing marker genes in the translocated chromosomes it could be shown that, in the new arrangement, ru and h (3L) belong to the same linkage group as bw (2R), whereas e (3R) and bw are in different groups. Salivary chromosome analyses of both heterozygous and homozygous larvae corroborate the genetic data showing the exchange of the left arms. The breaks are in 2L at 33D or E (probably just to the right of the thick doublet of 33D3-4) and in 3L at 79A (to the left of 79B1).

By studying crossing over in translocation heterozygous females the evidence was obtained that cp, in, and ri are to the left of the break point. Recombinants derived from females of the genotype th st cp in ri p^p/T(2;3)spy or th st in ri p^p e^s/T(2;3)spy were individually tested, by mating to translocation homozygotes, for the presence or absence of spy. The data indicate that crossing over at any of the regions st-cp, st-in, cp-in, or

in-ri always produced recombination of the left-hand markers and spy, or its complementary type without spy. On the other hand, crossing over at the region ri-p^p produced recombination of the right-hand marker (p^p) and spy, or its complementary type without spy. This suggests that the locus of spy (i.e., the break point) is very close to and probably to the right of ri. This was actually demonstrated by two cases of double crossing over derived from th st in ri p^p e^s/T(2;3)spy females after irradiation with X-rays; one of the type + st in ri + + showed recombination with spy but the other of the same type did not. This is to be expected, if crossing over at the ri-p^p region occurred, in the former case, between ri and the break point and, in the latter case, between the break point and p^p. It was further proved that + st in ri (spy) + + recombination retained the translocation. Linkage data obtained from translocation homozygous flies show the same linear arrangement of the genes from th to ri, but the crossing-over intervals have been increased to about 1.4 between th and st, 3.1 between st and cp, 12.9 between st and in, and 1.0 between in and ri.

Kaji, S. and Y. Hirosé. Kônan University, Kobe, Japan. Effect of nitromin and acid amides to the facet-formation of compound eye.

It has been reported that nitrogen mustard, methyl bis chloroethyl amine hydrochloride has strong inhibitory effect to the facet-formation of the wild type fly (Bodenstein and Abdel-Malek, 1949, Kaji and Ogaki, 1951, Bertschmann 1955). On the other hand, acid amides especially acetamide (1.8%) and lactamide (3%) were found to have the strongest facet-increasing effect to the Bar strain, so that the Bar eye was augmented to a size as large as that of the compound eye of wild type (Kaji, 1954, 1960).

In the present work has been confirmed that nitromin (methyl bis chloroethyl amine N-oxide hydrochloride) and lactamide have or not an antagonistic effect to the facet-formation both of the wild type and the Bar eye. For this purpose, the larvae of 70 hours age were exposed to nitromin for 1 hour and then exposed again for 1 hour with lactamide, or vice versa. Concentrations of both compounds were used at the same molarity, i.e., 0.108 mol.. After treatment in these chemicals, larvae were again transferred to the normal media until their emergence. The results of these tests are presented in Table 1 and 2.

Table 1. The effect of nitromin and lactamide on the development of the Oregon wild type eye.

treatment	n	number of facets in Oregon ♂♂		
		mean.	max.	min.
N M*	45	367.0	675	12
L A** ----> N M	31	622.1	697	406
N M ----> L A	26	661.2	692	480
L A	10	680.5	719	630
control	12	672.4	702	634

* N M : Nitromin (0.108mol., 1.5%)
** L A : Lactamide (0.108mol., 0.96%)

Table 2. The effect of nitromin and lactamide on the development of the Bar eye.

treatment	n	number of facets in Bar ♂♂		
		mean.	max.	min.
N M	23	42.1	78	10
L A ----> N M	19	54.3	82	30
N M ----> L A	10	49.4	72	26
L A	17	211.7	288	128
control	12	73.5	98	62

From the results of these experiments, nitromin was found to have the strong inhibitory effect to the facet-formation both of the wild and the Bar eye. On the contrary, lactamide was found to affect the facet number in the sense of increasing it. However, if attempt to consecutive exposure of these two substances respectively, no effect has been observed to the facet-formation. These two chemicals apparently have an antagonistic effect on the metabolic process of the eye development.