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In one experiment, male prepupae (6±3 hours after puparium formation) carrying  $X^{c2}$ ,  $v f$  and  $B^S Y y^+$  chromosomes received 800r X-ray treatment. After emerging, these males were mated every 24 hours to four virgin "yellow, apricot" females over the next 4 days. Male gametes utilised during this period were

irradiated as spermatocytes and late spermatogonia (see DIS 41: 170).

An exceptional "Bar" daughter appears if the contributing male gamete carries: (a) intact, separate X and Y through non-disjunction or (b) an intact X and a separate  $B^S$ -carrying Y-fragment translocated to an autosome or (c) a single non-ring chromosome with paternal X and Y components.

Three different examples of this last type of aberration were recovered. Examination of giant neuroblast cells shows the three chromosomes to be sub-metacentric. Detailed study of one (17C) suggests that the shorter arm has the heterochromatic block structure of  $Y^L$  (Cooper; Chromosoma, 10: 535, 1959). Unlike the other two recombinants, 17C exhibits regular recombination when mated heterozygous to a normal test X. Recombination data involving  $B^S$  also support the idea that this marked part of  $Y^L$  is located in or close to the short arm. More rigorous genetic tests are in progress. The longer arm of 17C (presumably carrying most or all of the X euchromatin in normal sequence) also appears to be heterochromatic at its distal end.

When spermatocytes are irradiated, induced exchange between rod-X and Y heterochromatic regions results in readily recoverable recombinants (DIS 41: 176). Where the X is in ring form, the absolute rate of X-Y exchange is probably unchanged but the frequency of recovered recombinants is very much reduced (same report). Exchange causes the formation of a dicentric chromatid in which the X material is sandwiched between two telomeric Y-fragments. If the inter-centromeric bridge is broken in a euchromatic region at anaphase I, subsequent breakage-fusion-bridge cycles undoubtedly reduced the chance that a recombinant chromosome will be recovered. But a break in heterochromatin may be capable of healing to yield a "non-telomeric" stabilized chromosome end. Khush and Rick (Chromosoma, 23: 452, 1968) have shown that breaks in the heterochromatin of tomato chromosomes do heal in this fashion.

In a second experiment with  $X^{c2}$ ,  $y B$  and  $B^S Y y^+$ , monocentric recombinants carrying either one of the two Y markers were generated. These are also being analyzed.

del Solar, E. Universidad de Chile, Santiago, Chile. Choice of oviposition sites by *D. pseudoobscura* females among areas with different numbers of eggs.

Groups of 15 *D. pseudoobscura* females were placed in population cages containing 15 food cups, each with 14 ml of Ohba's culture medium. The cups were removed every 24 hours, the eggs in each were recorded, and they were then replaced in the same position. The experiment was replicated 12 times. If only the cups containing one or more eggs are considered, the average number of eggs laid after 24 hours can be analyzed. Table 1 shows that the females do not discriminate among sites which contain different numbers of eggs.

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Number of eggs	$\bar{X} \pm S.E.$	N
1 - 10	37.8± 5.7	34
11 - 20	38.6± 8.0	23
21 - 30	37.6± 7.0	27
31 - 40	34.5± 6.6	21
41 - 50	42.5± 9.8	15
51 - 60	46.4± 9.7	12
61 - 80	29.6± 9.6	15
81 - 100	27.7±10.0	11
101 - 150	40.2± 9.0	13
151 - 200	22.3±12.9	7

A comparison was then made between the oviposition cups containing previously laid eggs and clean ones. The results show that the females tend to lay more eggs in clean cups than in those previously occupied. 76 previously occupied cups containing 2905 eggs and 52 clean ones with 2271 eggs were recorded between 24 and 48 hours. From 48 to 72 hours 101 occupied cups with 3635 eggs and 22 clean ones with 980 eggs, were found.

The mean number of eggs was 26.3 for the occupied category, and 44.0 for the clean one, with a chi-square of 4.438. ( $P = 0.02-0.05$ ).