much higher in CO's than in T's or In's at the time when it is at a maximum. In days 9 and 10, especially in day 10 sperm (whose clusters of crossovers were rare and small, in contrast to the situation in days 11 and 12 sperm) there was a sharp decrease in lethality in both CO and non-CO chromosomes (as well as a modest but clear decrease in frequency of recovered CO's) and residual lethality decreased to 13.0% in day 9 and to 5.5% in day 10 CO's. Residual lethality in T's and In's is presumably a position effect of the changed gene order. In ♂ CO's (homologous T's?) is it a result of possibly unequal crossovers producing chromosomes with small deficiencies or duplications, especially in days 7 and 8 where the chromosomes did not replicate before entering meiosis? Was the decrease in residual lethality in days 9 and 10 due to a repair of both lethals and rearrangements in cells whose chromosomes did replicate at least once more before meiosis, or to a loss of many days 9 and 10 cells with lethals and lethal-bearing crossovers during the subsequent replication? These questions are not answered in these data. (Minutes were relatively frequent in days 7 and 8 CO, and half the days 7 and 8 CO ♂♂ were sterile. Less than 10% of our T's and In's did not produce enough descendants for an adequate homozygous lethal test, which started, however, with several ♂♂ in each case.) Tests of a random sample of days 7-10 CO chromosomes showed no T associated with any one of them. Induced crossing over in ♂♂ appears first and very consistently in day 7 sperm (at 25° C) after radiation if the ♂ mates exhaustively (daily) during days 1-6. In another experiment 101 crossovers induced by 1 kr in al lt stw^3 sp^2/net b cn bw ♂♂ distributed themselves 17 in the net-b region, 31 in b-lt, 21 in lt-stw, 2 in stw-cn, 28 in cn-bw, and 2 in bw-sp. (The matings were treated ♂ x al lt stw^3 sp^2 ♀♀, and each F_1 CO x net b cn bw.) Compared to the linkage map distances those numbers are significantly high in both euchromatic b-lt and heterochromatic lt-stw and are low in euchromatic net-b and cn-bw.

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Široký, J. and J.K. Benedík. J.E. Purkyně University, Brno, Czechoslovakia. The changes of viability in a cage population.

The changes of the viability in the natural population during one year affected by the second chromosome were studied. The population was established on November 1st and all the time it was kept in the population cage at 25°C temperature, without light, and under a constant food condition.

The viability was tested by the Cy-method. Three tests for viability were done during the one-year period. The first in November 1970, the second in May 1971, and the third in November 1971. The modification of the Cy-method was used making possible the study of the viability of both chromosomes in each male. The results of the tests are compiled in the Table.

	% of detrimentals	% of supervitals
November 1970	34.00	12.04
May 1971	28.95	9.87
November 1971	2.01	1.34

The results suggested that the frequencies of both the detrimentals and the supervitals decreased continually. The difference between this finding and the results of some other authors (Cetl, unpubl., Mukai, 1969) occurred, but these authors studied only single second chromosome lines. In their experiments the percentage of all detrimentals, especially lethals, significantly raised to the 20th or 75th generations, respectively. The situation in our experiment was rather different. The whole population, and not only the single chromosomal lines, was studied and so the natural selection connected with the competition may overlap the mutation rate in this case.

References: Mukai, T. 1969, Genetics 61:479-495.