change.

The banding pattern of the last gel (J) in Figure 1 results from mixing supernatants of the following sources: Amy^{1} of melanogaster, our strain of nigrohydei, and Zurich and Chile strains of hydei. Each of these strains has only a single major band: "1", "6", "7" and "8", respectively. The supernatants are derived from mass collections of flies and diluted to provide a graded series of known activities. Band "7" is the weakest (equivalent to .0036 uM maltose released/min.), "6" is twice as active, "1" is three times, and "8" four times as active. With these activities as a standard, the total activity, as well as relative, for any given fly can be determined in the other gel columns.

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Effects of penicillamine feeding on the growth and radiation induced mutation rates in D. melanogaster.

Penicillamine is 8-mercaptovaline or 8,8-dimethyl cysteine and it is the most characteristic degradation product of the penicillin type antibiotics. Culture media containing 0.5-3.0 mg DL-penicillamine per ml were examined for their effect on the growth and radiation induced mutation rates with Canton-S strain. Contrary to the results of penicillin fed cases, penicillamine had no remarkable delayed effect on the growth rate. At 2 mg or less per ml concentration, it had also no effect on the emergence rate of adult flies, but when culture medium containing 3 mg concentration was employed, the emerged rate was significantly decreased. Sex-ratios (♀/♂) in the progeny produced by the fed males were significantly decreased. Hatchability of eggs fertilized by the sperm of the fed males was significantly reduced.

In the radiation experiments, penicillamine prefeeding effects on the induction of sex-linked recessive lethal mutation were inconsistent with its concentrations. 1 mg group showed similar brood pattern to the control group, and the pattern for 3 mg group was run to opposite direction. Induction of dominant lethals with X-ray irradiation for mature sperms in the inseminated females was reduced by the feeding.

In the case of penicillin feeding experiments, growth rate of flies was prolonged for one day as compared with the normal cultured conditions. On the other hand, the emergence rate was significantly higher in the fed group. The sex-ratio was not changed. Hatchability was not affected or rather increased. X-ray induced sex-linked recessive lethal mutation rates were significantly reduced. However, there were no differences in dominant lethality for sperms irradiated in inseminated females.

Thus the experimental results on the effect of penicillamine feeding seem somewhat different from the results of penicillin fed cases. The picture of contradictory results is one of an intricate network of intermediate factors and their possible interactions which determine the final yield of detectable genetic changes.

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Ganglionic metaphase chromosomes of D. malerkotliana, Parshad & Paika 1964

The larval ganglionic preparations were made following the technique of E. B. Lewis and Linda Smith Riles (DIS 34) with a modification by us for replacing the solution F of Lewis & Riles with a solution of 2% Gurr's natural orcein, o.25% fast green dissolved in 50% glacial acetic acid and 50% lactic acid (85%) of I. Oster & G. Balaban (DIS 37). Some clear mitotic complement (Fig. 1) contained five pairs of chromosomes: two pairs large, two pairs medium and one pair of small V-shaped chromosomes. The detailed account will be published elsewhere.

Fig. 1