to reveal mosaic males carying translocations in one portion of their sperm and normal chromosome complements in the other. Such males would remain undetected because all expected classes of individuals would be present in the final (F_2) cultures although not in equal proportions. Since tests for translocations are generally made in vials, the distortions in the relative proportions of the various classes would be ascribed to chance. It was conceivable that the low frequency of recoverable translocations after nitrogen mustard treatment could be partically explained on this basis. The hypothesis has been subjected to experimental test, but the results are inconclusive. They may be interesting, however, in other connections.

In two experiments, 465 sperm from 57 treated males (2% aqueous solution of nitrogen mustard; 4-6 hours' exposure) were tested for translocations. Three were found (0.6%; limits of the 95% confidence interval,).2%-1.9%) F_2 males were retested for translocations. If any of the original 465 sperm carried an unstable condition that resulted in mosaicism for a translocation, some of the F_2 males descended from that sperm should carry a translocation undetected in the F_1, while the others should be normal. 4342 F_2 males were tested--an average of 9.3 males for each of the original 462 sperm that gave negative F_1's. No translocations were detected in this generation. The highest frequency of mosaics compatible with these observations is 0.6% (95% confidence).

To explain by mosaicism the low frequency of translocations (relative to X-ray treatments giving similar sex-linked-lethal frequencies) after exposure to nitrogen mustard, one must assume that mosaics are induced with a higher frequency than nonmosaic translocations. Since the 95% confidence interval of the frequency of mosaics detected in the F_1 spans the upper limit of the 95% confidence interval of the frequency of translocations in the F_2, we must conclude that the test has failed and no conclusion can be reached concerning the hypothesis to be tested. The available data, however, may be sufficient to subject other hypotheses to test and for such hypotheses they are perfectly valid.

Wette, Reimut Production of phenocopies by chemical substances.

Rapoport reports induction of phenocopies by 1,4-derivatives of benzene in D. melanogaster. Of several substances being tested in our experiments with dead-yeast cultures, hydrochinone has so far yielded a clear effect: 90% of the F_1 flies showed monostrophic asymmetries of the twisted type in the abdomen.

Yoshida, Y. "Conditioned lethal."

In D. melanogaster, a certain mutation provisionally named "conditioned lethal" was found in the second chromosome of a stock of bw dp, during an experiment using the stocks bw/Cy and bw dp. But it seems that "conditioned lethal" is independent of bw and dp. The homozygous stock of "conditioned lethal" is viable and fertile, but "conditioned lethal/Cy" always gives only "conditioned lethal/Cy", and never homoxygote of the "conditioned lethal".

In the offspring of "conditioned lethal/Cy", females x "conditioned lethal homozygous" males, the homozygote is lethal. In the reciprocal cross, however, the homozygote is semilethal. In the offspring of "conditioned lethal/Cy" females x wild-type males, the heterozygote of "conditioned lethal" is semilethal, but viable in the reciprocal cross. It seems that the homozygote of "conditioned lethal" is generally viable and fertile, but that it is lethal or semilethal with certain genetic factors. The heterozygote of