

c-RNA and DNA from *Schistocerca* and *Aedes* was extremely low. Within the genus *Drosophila*, the comparisons have been applied to the sibling species *melanogaster* and *simulans* and the more distantly related *funnebris*. The level of hybridization between either *melanogaster* and *simulans* c-RNA and *funnebris* DNA was only about 10% of the level found in the homologous combinations. For the sibling species, the heterologous combinations led to levels of hybridization which were only about half those found in the homologous combinations.

The high level of discrimination which can be attained by this method favors a search for intra-specific differences and this is in progress. Preliminary tests indicate that the rapidly renaturing fraction of *Drosophila* DNA is exclusively involved in the hybridization with RNA under our conditions. Hence this approach offers an effective way of studying the properties and rates of divergence of the highly reiterated sequences generally. Comparisons between closely related species are of particular interest, to see how far the evidence from hybridization compares with more conventional taxonomic criteria and with estimates of affinity based on salivary banding. Experiments to this end are in progress. A preliminary report of the work has been published (*Biochem. Journ* 1968, 108 J. 30p) and a fuller account is in press.

Portin, P. University of Turku, Finland.
The meiotic loss of the extra Y-chromosome in relation to its preferential segregation in *D. melanogaster* XXY-females.

It is known from R. F. Grell's (1962) experiments that the extra Y-chromosome can segregate preferentially only from non-crossing over chromosomes. This led Grell to construct a meiotic model with two pairing events. This model is

known as the "distributive pairing"-hypothesis.

In the present study the meiotic behavior of the extra Y-chromosome was examined in four different translocation/inversion-systems involving T(2;3)Xa and various combinations of the Curly and Payne inversions. The distal ends of the autosomes, which were potential pairing partners with the Y-chromosome, were marked with recessive genes in order to measure crossing-over.

It was found, as could be expected, that preferential segregation of Y and an autosome can be observed only in those cases where there is no crossing-over in the autosome in question. However it was also found that the Y-chromosome is lost to a certain degree in the non crossing-over cases but in the crossing over cases there is no meiotic loss. This last finding is in contradiction to the distributive pairing hypothesis, because it should be expected in the terms of this hypothesis that the Y-chromosome has fewer if any partners for distribution in the crossing-over situation and thus its meiotic loss should increase.

However, the evidence is not in contradiction to Novitski's (1964) alternative hypothesis to distributive pairing.

References: Grell, R. F., 1962: *Proc. Natl. Acad. Sci.* 48, 165-172. Novitski, E., 1964: *Genetics* 50, 1449-1451.

Kuroda, Y. National Institute of Genetics, Misima, Japan. Characteristic aggregation pattern of dissociated imaginal disc cells of *Drosophila melanogaster* larvae in rotation culture.

To elucidate at a cellular level under strictly defined conditions the mechanism by which cells of identical genetic constituents show various phenotypic expressions in various organs and tissues, dissociated cells from various imaginal discs of *D. melanogaster* were tested for

their ability to form characteristic histogenetic aggregates in rotation culture.

Eye-antennal discs and wing discs were dissected as described in earlier papers (Kuroda and Yamaguchi, 1; Kuroda and Tamura, 2) from mature third-instar larvae (96 hours after hatching at 25°C) grown under sterile conditions. They were incubated in calcium- and magnesium-free salt solution for 15 minutes, then in 1% trypsin solution for 15 minutes, and were dispersed in the culture medium into single cells by flushing the dissected material through the tip of a fine pipette. After some improvements and simplifications of the culture medium had been made, it was found that medium K-10 (3), a chemically defined medium, was better than