Dubinin, N. P., N.N. Sokolov, G.G. Tiniakov and V.V. Sacharov. Unilateral chromosome conjugation in the salivary gland cells of Drosophila.

In our work published in 1935 (Biologicheskij jhurnal, vol. 4, No. 1, Russian) we wrote about unilateral chromosome conjugation in the salivary gland cells, basing our work on an analysis of heterozygous aberrations. However, we have come to the conclusion that the material used cannot prove our point, because the homologous chromosomes are twisted about each other. The problem of unilateral chromosome conjugation remains, therefore, unsolved.

Dubinin, N.P., N.N. Sokolov and G.G. Tiniakov. Crossing over between the genes "yellow" "achaete" and "scute".

Crossing-over between y ac and sc in females of the composition y ac^3 sc^1 w f/ / has been studied. The females were in all instances heterozygous for the C^2R-Cy^2L.1. inversion and in half of the cases they were at the same time heterozygous for the C^3R-1-C^3L inversion. The inversions were introduced in order to increase crossing over at the left end of the X-chromosome. Crossing-over between ac and sc was obtained. A total of 75578 flies was investigated, and among them four y ac^3 sc^+ flies and one y^+ ac^+ sc^1 individual were found. Genetic analysis of crossovers excludes the possibility of contamination. One y ac^+ sc^+ fly was found in the experiment. Crossing-over between yellow and achaete was therefore suspected, but the fly died and due to the impossibility to test it further, this problem remains unsolved. The experiment showed a general increase of crossing over at the left end of the X-chromosome. Crossing-over between yellow and white amounted to 3.7 per cent (n = 32548).

If the supposition is correct that ac and sc are adjacent, then crossing over between two adjacent genes has been proved for the first time. Under the conditions described above this crossing over occurs with a definite and relatively high frequency.

Dubinin, N.P., N.N. Sokolov and G.G. Tiniakov. D. simulans from Adzharistan.

According to the data of O. Duda communicated in his book "Drosophilidae" (1935) it is known that D. simulans is absent among the palearctic forms of the Drosophila species. In the summer of the year 1936 we found D. simulans in Batoume (Adzharistan). A cytological analysis of salivary glands of the F_1 of flies caught in nature disclosed that we were dealing with hybrids between D. simulans and D. melanogaster. Further work yielded pure strain of D. simualans. Individuals from this strain were crossed with the American form of D. simulans. No difference between the two sets of salivary chromosomes could be detected.