

Demonstration of spontaneous recombination in males of *Drosophila ananassae* as meiotic in origin

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The amount of genetic variation is important in a population undergoing microevolutionary change caused by mutation and recombination, which provides raw materials for evolution. Drosophila is extensively used in such kinds of studies and is considered an interesting biological model since 1909, when Thomas Hunt Morgan used Drosophila melanogaster in genetic studies for the first time. Morgan proposed the theory of linkage which states that the genes are linearly arranged in a chromosome and may be separated by recombination between homologous chromosomes during meiosis. Further, the strength of linkage depends on the distance between genes. In Drosophila, recombination does not occur in males, but occurs in females. It has been shown that spontaneous crossing over in males occurs in appreciable frequency, which was initially reported by Japanese researchers, but its mechanism of origin was not known. Later on, with the experimental evidence, it was shown that spontaneous male crossing-over was meiotic in origin, and this evidence came from genetic data, the presence of chiasmata and the role of inversions.