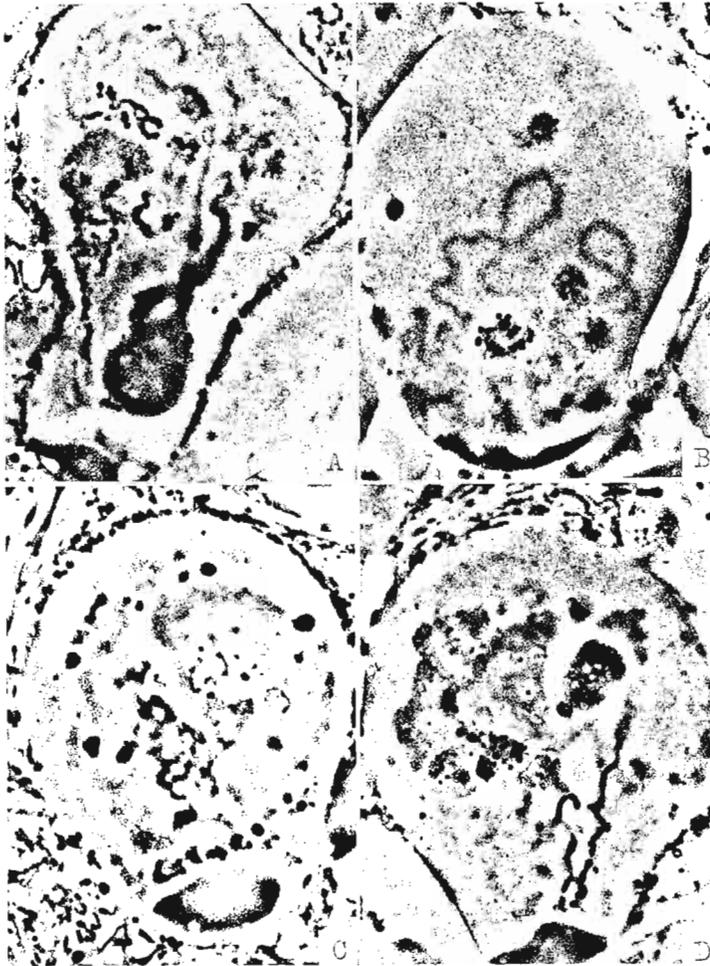


Meyer, G. F. Max-Planck Institut für Biologie, Germany. A reliable cytological method for classification of Drosophila species.

subgroups have been examined and the results demonstrate the strict species specific evolution of the Y heterochromatin in primary spermatocytes. For observation of the functional



The recently demonstrated lampbrush-like modifications of the Y chromosome within the genus Drosophila are both phase and species specific (Hess and Meyer, 1963; Meyer, 1963) and can, therefore be used as a reliable taxonomic criterion. Numerous representatives of several structures of the Y chromosome in living spermatocytes testes are dissected in Drosophila Ringer (also last instar larvae can be used), transferred into a drop of Drosophila Ringer on a slide and covered with a cover glass. Surplus Ringer is then removed by filter paper until the gonad ruptures and spermatocytes flow out. No strong pressure should be applied to the cover glass in order to prevent severe mechanical damage of the cell nuclei. Observations are made with a phase contrast microscope. It could be demonstrated that even closely related species such as D. melanogaster and D. simulans or D. hydei and D. neohydei can be easily distinguished by the cytological method described above. The figures demonstrate some species specific functional structures of the Y chromosome in the hydei subgroup and the usefulness of this "cytotaxonomical" method even for routine work.

References:

- Hess, O. und G. F. Meyer: Portug. Acta Biol. A, VII:29(1963);
Meyer, G. F.: Chromosoma (Berl.) 14:207 (1963)

Legend for figures:

Functional structures of the Y chromosome in primary spermatocytes. A) D. bifurca, B) D. nigrohydei, C) D. neohydei, D) D. hydei

Di Pasquale, A. and L. Zambruni. University of Milan, Italy. Further data on the manifestation of the "brown spots" character of Drosophila melanogaster.

no fluid at all, but the needle only. These females never showed spots, but a similar phenotype consisting of brown masses spread throughout the body. Matings of bsp etherized females produced a significant decrease in the frequency of brown spots. Copulations interrupted before the beginning of ejaculation caused the appearance of brown spots. These observations emphasize the existence of a mechanical stimulus correlated with the copulatory act, independently of the spermatic fluid.

Experiments have been undertaken in order to investigate if the manifestation of the bsp character (caused in the female by copulation) depends on the spermatic fluid. bsp females have been operated inserting into the vagina paragonia homogenate, other inactive substances, or