

10. 1. 12 THE PHYLOGENETIC RELATIONSHIPS OF DROSOPHILA SPECIES GROUPS AS DETERMINED BY THE ANALYSIS OF PHOTOGRAPHIC CHROMOSOME MAPS. Harrison D. Stalker. Dept. of Biol., Washington University, St. Louis, Missouri. U.S.A.

By comparison of photographic salivary chromosome maps it is possible to detect and analyze visibly homologous chromosome segments from species belonging to different species groups. Such analyses frequently permit deductions as to the phylogenetic relationships between groups. In the subgenus *Drosophila* it is shown that the MELANICA group is chromosomally intermediate to the REPLETA and VIRILIS groups (as suggested by the morphology), and that the ROBUSTA, CARBONARIA, CARSONI and POLYCHAETA groups are related to the REPLETA and VIRILIS groups through the MELANICA group. The data further suggest that of the mainland groups above, the ROBUSTA group is the one most closely related to the Hawaiian species, and that among the Hawaiian species analyzed to date, the species most closely related to the ROBUSTA group are *D. mimica* and *D. primaeva*.