

# Biometrical analysis of larval digging behavior in *Drosophila melanogaster*

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Digging behavior of *D. melanogaster* larvae increases as larval development proceeds. Diallel crosses were made to analyze genetically digging behavior at 72 and 108 h of larval age. Additive and dominance variation was found, dominance being principally to dig. Dominance to dig is higher at 108 than 72 h of development; additivity does not substantially change between these two larval ages. At 72 h of larval age, depending on the cross, I found (i) dominance to dig, (ii) dominance to nondig, (iii) overdominance to dig, and (iv) no dominance to dig. At 108 h of larval development I detected (i) dominance to dig and (ii) overdominance to dig. Thus, diversity of response in the F1 was greater at 72 than 108 h of larval development. These age-related changes in larval digging behavior of *D. melanogaster* seem to reflect epigenetic changes in the patterns of gene expressions. © 1994 Plenum Publishing Corporation.