Kamping, A. and W. van Delden. University of Groningen, The Netherlands. The Adh^{nl} mutant of Drosophila melanogaster.

Several alcohol dehydrogenase-negative mutants, which lack detectable ADH activity, have been isolated in Drosophila melanogaster. We investigated the Adh^{nl} (nl) mutant (Grell et al. 1968) by crossing homozygous nl mutants with strains homozygous for the Adh-positive alleles F, S and D. The banding patterns for homozygotes and heterozygotes, obtained after polyacrylamide electrophoresis (Van Delden et al. 1975) are given in Figure 1. All hybrids between the nl strain and the Adh-positive strains show two bands: the parental band of the Adh-positive parent and a hybrid band. From the position of the hybrid bands the electrophoretic mobility of the homozygous nl mutant can be deduced. This position is indicated in Figure 1 by "00". Though the nl mutant is derived by EMS treatment from an SS positive strain (Grell et al. 1968), the position of the nl band is not S-like, but differs from all three parental Adh-positive bands (F, S and D). Such a position, different from the original strain, was also observed by Schwartz and Sofer (1976) for the Adh^{nl1} mutant. It must be assumed that the nl mutation has caused, in addition to loss of ADH activity, a change in charge.

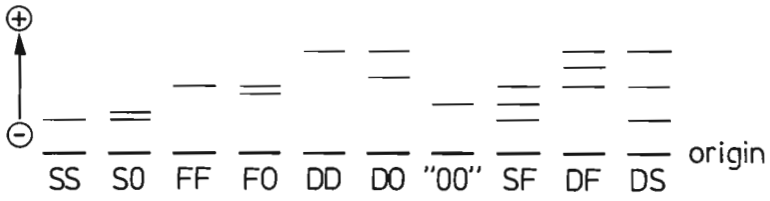

Figure 1. Position of electrophoretic banding patterns of Adh variants.

References: Grell, E.H., K.B. Jacobson and J.B. Murphy 1968, Ann. New York Acad. Sci. 151:441-455; Schwartz, M. and W. Sofer 1976, Genetics 83:125-136; Van Delden, W., A. Kamping and H. van Kijk 1975, Experientia 31:418-419.

Kaur, P. and R. Parkash. G.N.D. University, Amritsar, India. Ontogeny of esterase in Zaprionus paravittiger.

Esterase isozymes have revealed stage specificity during different developmental stages in Zaprionus paravittiger (Fig. 1). Developmental esterase patterns of Z. paravittiger form two groups: Group I (Est-1 to Est-4) and Group II (Est-5 to Est-7). The Group I esterases persist throughout all the developmental stages and are localized in the different regions of the gut. These are suggested to participate in the breakdown of lipids with smaller fatty acid chains or other externally derived plant or animal material rich in sterols and organic compounds having ester bonds, thereby producing energy for other metabolic processes. Group II esterases are confined to late larval and pupal stages and fail to persist in the adult. These are suggested to control metamorphic events by modification of the specific insect hormones. One of the esterases (Est-5) has been recovered in the integument of the 3rd instar larva as well as in the puparium. It is suggested that this esterase might modify cuticle or may hydrolyze the puparium wall thereby helping in escape of the imago. This esterase has been found to be highly thermostable and retains enzyme activity for over a week period.

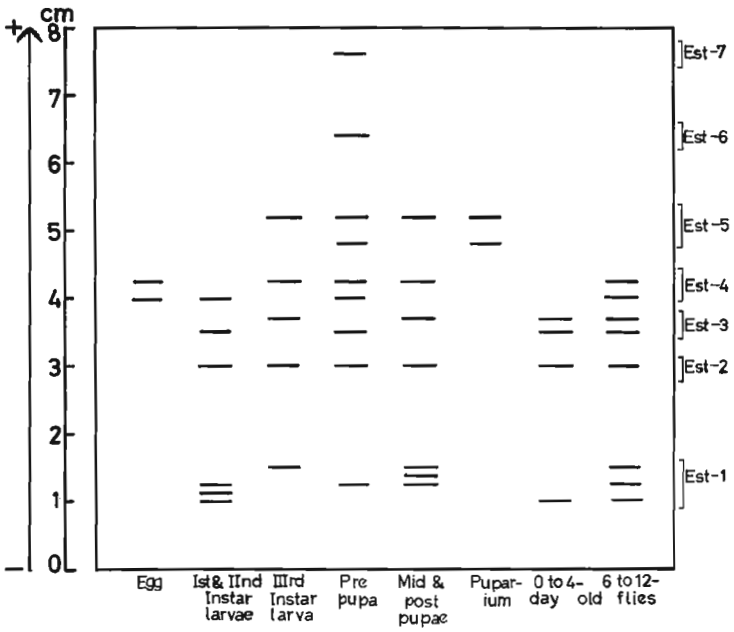

Fig. 1. Esterase isozyme patterns during development of Zaprionus paravittiger.