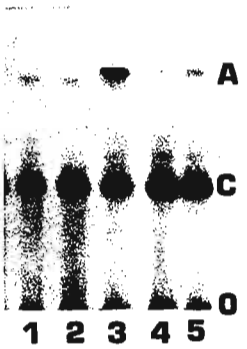

α-β-naphthyl acetate staining mixture. Also it is interesting that the Est-A zones have greater activity in the females than in the males (Fig. 1, no. 3).

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Fig. 1. Electrophoretic variants for the Est-A locus in D. auraria. 1-2: Est-A^S. 3-5: Est-A^F. O = origin, C = Est-C, A = Est-A.

Triantaphyllidis, C.D. Aristotelian Univeristy of Thessaloniki, Greece. Genetic localization of Est-C, Acph and w genes of D. auraria.

It has been established earlier that the esterase-C (Est-C) and acid phosphatase (Acph) variants of D. auraria are under the control of autosomal loci (Triantaphyllidis and Kastritsis 1976; Triantaphyllidis 1978). These two genes as well as the white eyes gene are unplaced on the chromosomes of D. auraria. For this reason crosses were made for their chromosomal localization. The results of crosses ♀ w x $+^w$ ♂ and ♀ $+^w$ x w ♂ showed that the w allele is recessive and sex-linked. On the other hand, in order to find if the Est-C and Acph loci are independent or linked, homozygous females of the form Est-C^S $Acph^{3-5}$ were crossed with homozygous males of the form Est-C^F $Acph^{1-3}$. Then heterozygous males or females Est-C^S $Acph^{3-5}$/ Est-C^F $Acph^{1-3}$ were backcrossed to Est-C^S $Acph^{3-5}$ females or males respectively. In the progenies of the first backcross only flies of the phenotypes Est-C^S $Acph^{3-5}$ and Est-C^F $Acph^{1-3}$ were found. Thus, the Est-C and Acph loci are linked in the same autosomal chromosome. In the progeny of the second reciprocal backcross 101 out of 254 offspring were recombinants (39.8%). Hence, the Est-C locus is about 40 map units away from the Acph locus. The existance of similar gene-enzyme systems in D. melanogaster (O'Brien and MacIntyre 1971) located in the third chromosome (positions 49.0 and 101.1 respectively) is a good indication that the Est-C and Acph loci are probably located in the same chromosome in D. auraria and the genes retained their ancestral position during the phylogeny of the two species. The difference between the two species with respect to the relative distances between the similar genes may depend on many factors. Work is now in progress in order to map the position of the cistron which codes for other gene-enzyme systems in D. auraria.

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References: O'Brien, S. and R.I. MacIntyre 1971, DIS 46:89-93; Triantaphyllidis, C.D. 1978, DIS 53:118; Triantaphyllidis, C.D. and C. Kastritsis 1976, Experientia 32:1277-1278.