Comparison of ^{3}H-acetamide incorporation with different stages of eye discs showed that 62-70 hours disc was far stronger labeled than in before and after this stage. Within this period, the most effective point is found at 70 hours after hatching (Fig. 2). As is apparent from the experiments, quantitative differences of ^{3}H-acetamide incorporation can be seen in different larval stage,, and incorporation was marked at 70 hours discs. This stage of larval development is corresponding with the sensitive period of the eye discs to the chemical agents.

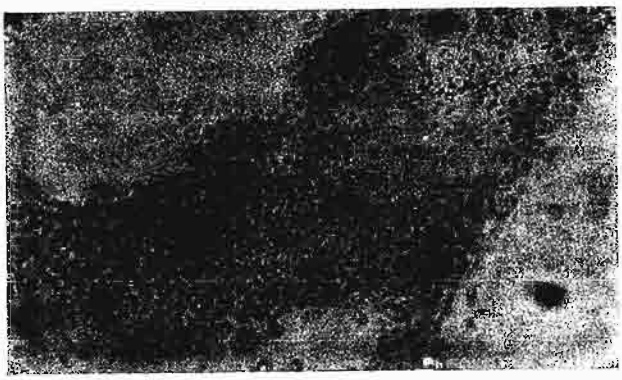

Fig. 1. The autoradiography shows that the tritiated acetamide incorporates mainly in the part of facet-forming region of eye disc.

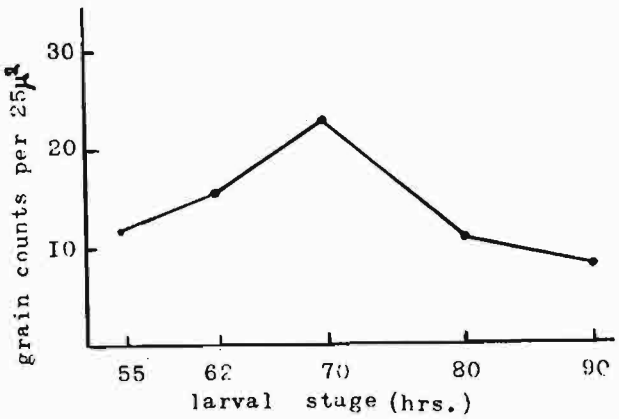

Fig. 2. Incorporation of tritiated acetamide into eye discs at different larval stages. The larvae treated with 5.64 uCi/g of ^{3}H-acetamide for 1 hour. The grain counts per 25u (taken as unit area) at the facet-forming region of eye disc.

Carver, J. E. University of Kentucky, Lexington, Kentucky, Ecological-Genetic study of South Amherst Drosophila populations.

In order to evaluate the influence of various ecological parameters on the genetic structure of Drosophila populations, studies were begun with Dr. P. T. Ives to determine whether or not Drosophila melanogaster (and other species) are continuous in the South Amherst, Massachusetts locale. If the flies do overwinter, an a priori expectation is that the process involves a high degree of genetic adaptation which may be reflected by a difference in frequency, viability, and variance values for drastic heterozygotes in overwintering versus peak summer-fall populations. Results thus far have revealed that Drosophila algonquin, funebris, putrida and quinaria and Chymomyza amoena over-winter in a non-adult stage in apple orchard soil at temperatures approaching but not reaching 0° C. The frequency of lethal-bearing second chromosomes in D. melanogaster was lower in samples of adults taken from the smaller spring population. Viability and variance analysis revealed an irregular pattern of statistically significant and nonsignificant differences between fall and spring samples. Population genetic analysis of the larger seasonal samples of D. melanogaster afforded by the less severe overwintering conditions of the area, as well as similar studies of the ecology of natural Drosophila populations are being continued at the University of Kentucky.