It will be noted that at all stations the melanogaster group is very dominant. The immigrans group is represented by D. pararubida and D. setifemur.

Cultures of the species from the four stations have been preserved and are being studied in relation to cultures of the species from the Territory of Papua and New Guinea as regards chromosomal variation and reproductive isolation.

Acknowledgements are due to Research Assistant Sheridan Butler and Graduate Students V. Baimai and I. R. Bock for technical assistance.

Mather, Wharton B. University of Queensland, Australia. Chromosomal Polymorphism data in D. rubida from north eastern New Guinea.

One of the gaps in our knowledge of chromosomal polymorphism in D. rubida is in flies from the north coast of New Guinea. Some inversions have been recorded from small samples from Samarai, Popondetta and Lae (Mather, 1961 & 1963). This report records data from a sample of ten male flies at a new station - Madang. The new complex inversion J has limits of 7.1 and 14.1 in chromosome IIR on the giant chromosome photographic map (Mather, 1961).

Acknowledgements are due to Sheridan Butler and V. Baimai for technical assistance.

Chromosome		%
II	RC	62.5
	J	37.5
III	+	68.8
	A	18.8
	B	12.5
	D	6.3
	E	18.8

References:
Mather, W. B. 1961. Chromosomal polymorphism in Drosophila rubid Mather. Genetics, 46:799-810.
Mather, W. B. 1963. Patterns of chromosomal polymorphism in Drosophila rubida. Amer. Nat., 97:59-64.

Hirosé, Y. and S. Kaji. Kônan University, Kobe, Japan. ^{3}H-acetamide incorporation into eye discs of Bar strain.

Previous work has been shown that acetamide has strong effect to the facet-formation of the Bar eyes and increasing the number of facets as many as that of the wild type eye (Kaji, 1954). The sensitive periods of the eye discs to the chemical influence to lie between 60-80 hours after hatching (Kaji and Ogaki, 1953).

The present report describes studies on tritiated acetamide incorporation into eye discs of different larval ages.

In 55, 62, 70, 80 and 90 hours old larvae were treated with ^{3}H-acetamide (2%, 5.64 uCi/g) for 1 hour respectively, and then transferred to normal media for growth until the end of larval stage. Carnoy was used as a fixative, and sections ranged from 2 to 3 u. Autoradiographic exposure for tritiated acetamide was 3 days. The figure 1 shows photomicrograph of the preparation of Bar eye disc.

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.

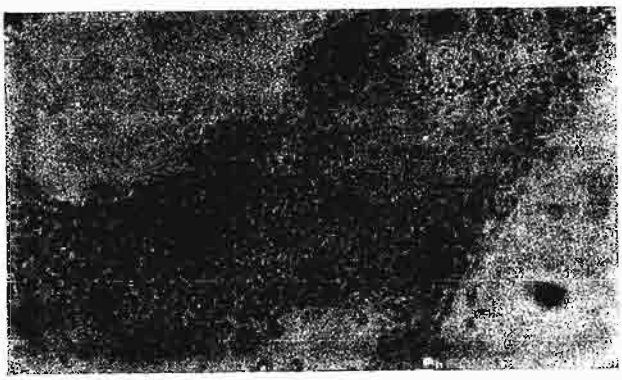

Fig. 1. The autoradiography shows that the tritiated acetamide incorporates mainly in the part of facet-forming region of eye disc.

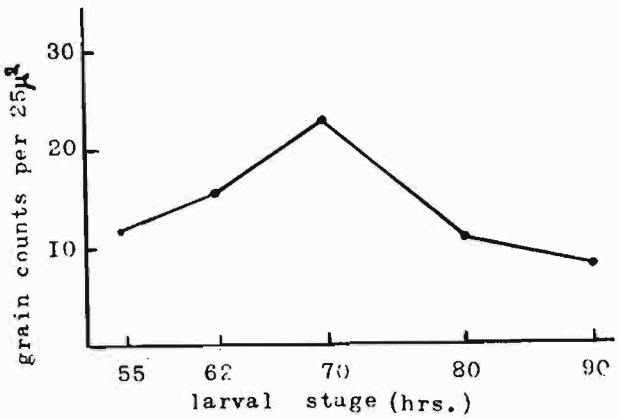

Fig. 2. Incorporation of tritiated acetamide into eye discs at different larval stages. The larvae treated with 5.64 uCi/g of ^{3}H-acetamide for 1 hour. The grain counts per 25u (taken as unit area) at the facet-forming region of eye disc.

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.