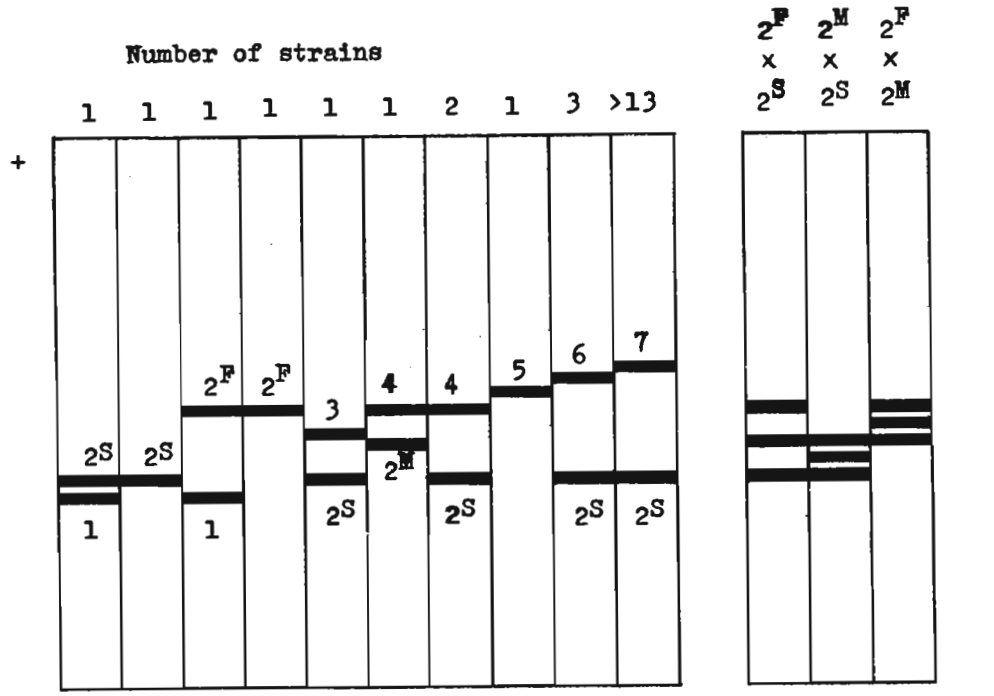
Ohba, S. and F. Sasaki. Tokyo Metropolitan University, Japan. Electrophoretic variants of esterase in Drosophila virilis.

By means of thin layer ager gel electrophoresis (Ogita, DIS 37), flies of several days old were individually examined as to the electrophoretic variants of non-specific esterases. As a standard technique, the following were used: phosphate buffer (pH 6.8), β-naphthyl acetate as substrate and naphthanyl diazo blue B as the dye. While the electrophoretic patterns varied between different laboratory strains, they did not differ among flies from the same strain, indicating homozygous conditions of genes controlling esterase activities in each strain. About thirty inbred laboratory strains could be classified into ten different zymograms, each of which showed one or two clear zones of esterase activity (Figure A). Analysis of progenies (F_1, F_2 and back-crosses) from various inter-strain crosses suggested that there might be several (probably seven) different loci which control the main zones of esterase zymograms discussed here and that all of them are located on the 2nd chromosome. They were tentatively labeled Est-1 to Est-7. One locus, Est-2, was quite unique, involving four alleles (2^S, 2^M, 2^F and 2^O), among which 2^O was a "silent" gene producing no detectable zone in homozygotes and no detectable effect in heterozygotes. The other three alleles revealed marked hybrid enzymes in three heterozygous combinations (Figure B).



A: Zymograms of non-specific esterases in homozygous inbred laboratory strains. B. Zymograms of hybrids for Est-2.

Carlson, J. H. Fairleigh Dickinson University, Madison, New Jersey. A mutant stock exhibiting complete absence of the second longitudinal vein (L_2) in D. mel.

In a previous issue (Carlson, J. H., DIS 34:74-75) it was reported that a new stock containing an interruption of the second longitudinal vein (L_2) had been produced. By selection it was possible to increase expression of this mutant to a maximum average L_2 absence of 47%, at which time selection was no longer effective for increased absence. Early in 1964, while doing some additional work on possible isoalleles in various wild stocks, the selected L_2 mutant stock was reciprocally out-crossed to a Samarkand wild type stock. The F_1's were all wild type. However in the F_2 a few flies were produced without L_2 veins. These flies were used as parents to obtain a strain of L_2 deficient flies. For the past two years this stock has been maintained at room temperature by mass matings (about twice a year selection is practiced). At the present time this stock is characterized by all flies having interrupted L_2 veins. At the last count, 44 of 48 males (92%) and 46 of 54 females (86%) showed complete absence of the L_2 for both wings. Further studies of interaction with other venation mutants are planned.