

and the legs knobby) it is supposed to be connected with a small deficiency at the dp - locus. Slides of salivary glands did not show any typical aberration near the free end of 2L.

Law, L. W. Radioactive phosphorous and the lethal mutation rate in *Drosophila*.

The results obtained by use of X-rays in influencing the structure of chromosomes in *Drosophila*, have proved of invaluable aid to geneticists. It was thought worthwhile to attempt to influence the lethal mutation rate by

radioactive phosphorous. A 1% solution of radioactive  $\text{Na}_2\text{HPO}_4$  was obtained from Dr. John Lawrence of the University of California. This substance had been removed from the cyclotron 15 days previously, so that at the time it was used it had a strength of 30 micro-curies per cubic mm. It gave off chiefly beta and gamma rays. A series of concentrations were then injected into 4 day old larvae of the Oregon-R strain (method of Beadle and Ephrussi) in order to determine the sub-lethal dosage. This was found to be 0.1%. Approximately 1 cubic mm. was then injected into Oregon-R males and lethals tested for in the usual CLB manner, using the stock of X-ple/CLB flies. No lethals were found in 250 tested X-chromosomes as compared with no lethals in 507 control chromosomes.

Ludwig, W. A Lamarckian experiment on *Drosophila*

In the Zoological Institute is bred since June 1933, a stock of *D. melanogaster* Oregon+, called "Lamarck" (130 generations up to date). Immediately after hatching the flies have their

wings and halteres cut off. The purpose is to find out if the wing-muscles show a reduction on account of the wings not being used. According to investigations on double-hemithorax-flies (DIS-7:17) which, in spite of lack of whole thorax-muscular-tissues, are able to run and spring nearly in the same way as the wild ones, it is certain that the wing-muscles are used for flying. Furthermore, from other species of flies which are not able to fly, it is known that this circumstance is accompanied by a reduction of the wing-muscles. An examination of "Lamarck" after 100 generations shows the following result in comparison to Oregon+, There is no difference in the total number of the nuclei in the muscles (= number of muscle-cells) the total number of fibres, and the total volume of the muscles, that is to say, up to now no influence in respect to Lamarckism could be detected. The investigations are continued, both from morphological and physiological point of view.

Ma, S. Y. Temperature experimente an *Drosophila melanogaster*, insbesondere zur Bestimmung der sensiblen Perioden für die Induktion einiger Arten von Modifikationen.

Eier, Larven, Vorpuppen und Puppen eines lang gezüchteten Oregon-Wildstammes wurden in verschiedenen Entwicklungsstadien mit Letaltemperaturen von 38,5° bis 41° C. gereizt. Es wurde dafür gesorgt, dass die Konstanz der gebräuchten Methoden (mindestens innerhalb eines Stadiums oder einer Versuchsserie), die

Genauigkeit der Altersbestimmung und die Exaktheit der Hitzebehandlung stets aufrecht erhalten würden. Die Experimente und die Auswertung des Ergebnisses sind noch im Gange, die bisherigen Resultate zeigen aber bereits folgendes:  
1. Es besteht ein Geschlechtsunterschied in der Entwicklungsgeschwindigkeit, d. h., ♀ entwickelt sich schneller als ♂. 2. Die Hitzesterblichkeit ist hoch in früheren, niedriger in späteren Entwicklungsstadien; innerhalb eines Stadiums ist sie am Anfang und am Ende (einschliesslich der Hautungsperiode)