

Research Notes

Auerbach, C. Studies on egg shape and fecundity in *D. funebris*.

The mutant spheroidal was investigated. The eggs are short and roundish, the filaments are short and stiff and do not spread out as in normal eggs. At the same time fecundity is very low.

Hatchability appears to be good. Spheroidal segregates as a simple Mendelian autosomal recessive. Investigations have been started to study its effects more in detail, with a special view as to the nature of the connection between the morphological character "shape of the egg" and the physiological one "low fecundity."

G. Bonnier and M. Nordenskiöld. Attached X's.

Selections have been performed in order to get different percentages of homozygosis at the yellow-locus. In this way a high and a low line have been established.

In 466 cultures of the high line this percentage is 22.80 ± 0.34 and in 474 cultures of the low line the percentage is 17.72 ± 0.24 . This selection has at the same time produced a selection of the rate of detachments. Within the same cultures there has been a total of 3 detachments in the high line, and 858 detachments in the low line. Investigations concerning the genetical causes are now under hand.

Brehme, Katherine S. A method for counting the larval instars in mutant stocks of *Drosophila*.

It has been suggested that a fourth larval instar might explain the increase in duration of the larval period of certain mutant types beyond that of the wild type, in *D. melanogaster*. Such mutants include heterozygous *Mw*, with a larval period about two

days longer than that of Δ sib at 25° C, and giant, which pupates three to five days later than non-giant sib at 25°. The following method has been devised for ascertaining the number of larval instars.

A thin layer of Pearl's S 101 medium is placed in a three-inch Petri dish and sown with one drop of yeast suspension. Ten eggs are cultured in each dish at 25°. When all larvae in the culture have pupated, the pupae are removed to paper spoons containing a 2% solution of agar (for moisture supply) and are kept in cotton stoppered shell vials until the adults emerge, when the adult phenotypes can be recorded. After removal of pupae, each dish is examined on a white background under the binocular (9 x ocular, 2.3 x objective); the molted mouth armatures are easily seen on this almost transparent medium. A piece of graph paper under the dish affords a means of orientation, so that the entire dish can be thoroughly examined. In this way it is

possible to collect all molted mouthparts. The absence of a set of discarded mouthparts, in addition to the first and second instar sets and those in the pupa cases, proves the absence of an extra instar. Any mouthparts which might be overlooked in this inspection can be recovered by melting the medium and filtering through a small cone of filter paper, on which the mouthparts can be located under the binocular. The writer has used this method to demonstrate that heterozygous Mw has three instars only. The case of giant is being investigated, with substitution of finely strained banana agar for the S 101 medium.

Cochrane, Flora Eye colors of D. pseudo-obscura,

A histological study of wildtype and seven eye color mutants of D. pseudo-obscura at various stages in develop-

ment has been made.

Sepia affects pigment during the late phase of pupal development and during adult life. The influence is a chemical one due to which all of the eye pigment eventually becomes yellow and brown. The actual amount of pigment is probably not reduced.

Eosin suppresses the formation of part of the pigment granules throughout pupal development but does not appear to influence them chemically. Purple affects the rate of production of red pigment. Purple² retards the formation of red so little as to make purple² almost indistinguishable from wildtype; only in combination with vermilion or orange is the effect of purple² obvious. Purple³ retards the production of red considerably, and purple¹ to such an extent that few red granules are present at emergence but many appear in older flies. Vermilion and orange suppress the entire early phase of pigment development but allow the late phase to proceed as in wildtype.

In a culture resulting from a pair mating of eosin (w^e) flies three ♂♂ were found which had slightly pigmented eyes. This color which was found to be allelomorphic to w^e was called buff (w^{bf}). By mating buff ♂♂ to wildtype ♀♀ buff ♀♀ were obtained in the F₃. The eyes of buff ♂♂ contain more pigment than those of the ♂♂.

Crew, F.A.E. and R. Lamy. The Px inversion in pseudo-obscura.

The sex-linked character, Plexus, which much resembles the autosomal character called smoky by Dobzhansky, has been found to

be associated with a very small inversion between y and w, and is not necessarily connected with the larger inversions on the X-chromosome described by other writers (Dobzhansky, Tan, Koller) though the larger inversion existed originally in the px stock. It is uncertain whether the mosaics that occur in px matings are connected with the large inversions or with the px inversion proper.