

NEW MUTANTS
simulans

Report of R. J. MacIntyre

Acph-1^A: Acid phosphatase-1^A MacIntyre, 1965. 3-133.7±2.1.

Acph-1^B: Acid phosphatase-1^B MacIntyre, 1965. 3-133.7±2.1. These are two codominant, interacting alleles controlling the structure of electrophoretic variants of a non-specific acid phosphatase. Methods of demonstrating the enzyme are included in the report of R. J. MacIntyre in the section on the new mutants of melanogaster of this issue. Under the conditions specified in that report, homozygous Acph-1^A flies produce a single band which migrates about 3 1/2 cm from the origin or slightly ahead of the Acph-1^B band from *D. melanogaster*. The enzyme from homozygous Acph-1^B individuals migrates 5 cm from the origin. Heterozygotes at the Acph-1 locus produce both bands characteristic of the homozygotes and a more heavily staining intermediate or "hybrid" enzyme. Several wild type stocks monomorphic for each of the "homozygous" patterns have been found. Both alleles produce enzymes which show a marked reduction in their rates of migration in starch gels prepared in a tris-EDTA-boric acid buffer. The Acph-1 locus in *D. simulans* is considered to be homologous with the Acph-1 locus in *D. melanogaster* (MacIntyre, R. J. manuscript in preparation). RK1, even with homogenates of single 2nd instar larva, 3rd instar larva, pupae or adults.

hydei

Report of W. W. Doane

Several strains of *D. hydei* were analyzed for differences in electrophoretic banding patterns formed by their α -amylases. Three strains in this laboratory (New Haven, Zurich, and Vera Cruz) are homozygous for an allele whose enzyme assumes the position of "7" in the proposed scheme for *Drosophila* amylases separated by disc electrophoresis (see research note, this issue). Another strain, Chile, is homozygous for an allele whose enzyme lies in the "8" position. A single strain of *D. nigrohydei* was tested and found to contain amylase that migrated to the band "6" position characteristic of certain isozymes described in *D. melanogaster*.

ananassae

Report of G. K. Manna

held out Spontaneous from wild stock collected from Kalyani after 4th generation. Wings held out horizontally. Recessive; linkage group not yet established.

RESEARCH NOTES

Barigozzi, C. and M. Sari. University of Milan, Italy. Two modes of transmission of Freckled.

New data have been collected proving the existence of two modes of transmission of Freckled phenotype in the same individual.

Crossing, in single pair, Frd/Cy L to +/+ flies, both having the same 1st

chromosome marked with y w, three classes of individuals are derived: Frd/+, Cy L/+ (in equal proportions) and a variable amount (1-10%) of Cy L/+ (therefore lacking the Frd factor, which has been definitely located at 102) which show a Frd phenotype, restricted to a few black masses, at typical anatomical localizations (head, legs, thorax, etc.). These flies transmit the character unlinked to chromosomes, through both gametes. This condition is indicated as (Frd). The presence of a given X seems important to stabilize the phenomenon. While the highest proportion of (Frd) occurs with an X marked with y w, a lower frequency is obtained with another X marked with v; no (Frd) flies result when M-5 is present.

The transmission of (Frd) seems to be permanent. (Frd) genotype is interpreted as due to an extrachromosomal unit, transmitted close (or within) the nucleus, since both gametes are equally efficient.

(Frd) may be conceived, hypothetically, either as an extrachromosomal stage of Frd, or as a constantly extrachromosomal entity, whose multiplication (and, therefore, whose degree of manifestation) is controlled in the strongest way by the presence of Frd, and, more weakly, by the genes located in the 1st chromosome.