allele can also be shown by comparing $\overline{XX}$ ♀♀ carrying bb^k or bb^d (Figure 1). $\overline{XX}$ Y^{bbk} produces a distinct reduction of bristle length and a strong aa effect while in $\overline{XX}$ Y^{bbd} only bristle length is slightly affected.

The $\overline{XX}$ strain used, carries no X-chromosomal rDNA (Hennig, 1968), and it is therefore expected that $\overline{XX}$ Y^{bb} should be phenotypically bb. This observation has been extended to a number of $\overline{XX}$ strains of independent origin. In all 9 cases examined, the $\overline{XX}$ Y^{bbk} combinations show similar bristle length and strong aa effects. It seems therefore that the formation of $\overline{XX}$ in D. hydei is generally accompanied by a complete loss of rRNA genes. This supports cyto-

bb allele	1 aa effect in X/X ♀♀	2 aa effect in ♂♂ bb^k	2 aa effect in ♂♂ bb^d	3 Fertility of ♂♂ bb^k	3 Fertility of ♂♂ bb^d
bb^1	*++++	++	-	-	+++
bb^{11}	+++	+	-	-	+++
bb^R	+++	-	-	+	+++
bb^{19}	-	-	-	+++	+++
bb^4	-	-	-	+++	+++
bb^9	++	-	-	-	+++
bb^8	-	-	-	+++	+++

Table 1. Intensity of abnormal abdomen (aa) effect in ♀♀ of different bb strains (1) and aa effect and fertility of different X/Y^{bb} genotypes (2 and 3). Abnormal abdomen effect is a rough estimate based on several inspections. Sterility of ♂♂ was observed in crosses XX Y^{bb} x X^{bb}/Y^{bb}.

* Estimate from ♀♀ bb^1/bb^{11}.

logical observations (Van Breugel, 1970) locating the X-chromosomal nucleolar organizer-region in the distal part of the heterochromatic arm.

For a better understanding of the effects of the Y^{bb} mutants described, it will be necessary to know their rDNA content and rate of rRNA synthesis. Such studies are currently in progress.

References cited: Beck, H. 1972, DIS 49:76; Breugel, F.M.A. van 1970, Genetica 41: 589-625; Hennig, W. 1968, J. Mol. Biol. 38:227-239; Ritossa, F.M. and G. Scala 1969, Genetics Suppl. 61:305-317; Spencer, W.P. 1944, Genetics 29:520-536; Weinmann, R. 1972, Genetics 72:267-276.

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Imberski, R.B. and M. Olds. University of Maryland, College Park. Electrophoretic analysis of alcohol dehydrogenase and octanol dehydrogenase in Drosophila hydei and related species.

Using the agar gel and formazan staining system of Ursprung and Leone (1965) we have, to date, examined single fly homogenates of thirty strains of D. hydei and one strain each of D. neohydei, D. eohydei, and D. mercatorum for possible electrophoretic variants of alcohol dehydrogenase (ADH) and octanol dehydrogenase (ODH).

For all strains and species we observe two (possibly three) clustered bands of ADH activity and one band of ODH activity. This pattern is similar to "ADHII, ODHII" in D. melanogaster (Ursprung and Leone, 1965) except for the degree of mobility in the cathodal direction. All thirty hydei strains show identical patterns with the ADH cluster and ODH single band migrating to slightly more cathodal positions than in melanogaster. In neohydei and eohydei the ADH has the same mobility as in hydei, but the ODH is shifted even further toward the cathode. The mobility of ODH in mercatorum is identical to neohydei and eohydei, but ADH is at the most cathodal position of any of the species examined.

Reference: Ursprung, H. and J. Leone 1965, J. Exp. Zool. 160:147-154.

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