

Jallon, J.-M. and Y. Hotta. University of Tokyo, Japan. A proposal for a new genetic scheme to hunt for sex-appealless mutants of *D. melanogaster*.

We have recently reported genetic and behavioral studies of female sex appeal in *D. melanogaster* (Jallon and Hotta 1979). The sex appeal was defined as the stimulus (or set of stimuli) which induces wing vibration in courting males. It is most likely to be a measure of sex pheromone re-

leased from a female.\* Sexual behavior of gynandromorphs was analyzed by means of the blastoderm fate map method (Hotta and Benzer 1972), and we were able to localize the sex appeal focus in the ventroposterior region of the blastoderm fate map. Moreover, studying ontogeny of male courtship, we found that on the first day after eclosion males possess as much sex appeal as females. However, males lose it within a day, while females retain it indefinitely.

Hunting for specific mutations affecting the presence of sex appeal in females is another way to extend the study of sex appeal and its control. A difficulty expected in isolating such mutants is that they will not reproduce. The existence of young males' sex appeal leads us to propose a novel way to overcome this difficulty. The procedure is to look for X-chromosomal sex-appealless mutants among  $F_1$  male progeny of chemically mutagenized males which are mated with attached X-chromosome females. By this genetic scheme, mutagenized paternal X-chromosome is transmitted to sons, so that sex-appealless mutations may be found among  $F_1$  males at their immature stage. If such mutants without ephemeral sex appeal could still function as normal males in later sexual activities, it would be possible to find such genes rather easily. We have so far examined about 4500 such males a few hours after their emergence and tested their ability to induce wing vibrations of male testers. None of them turned out to be a mutant. There are several possible reasons for the present difficulties. It may be that such genes happen to be rare on the X-chromosome. It may also be because such genes become lethals when they are mutated. Finally there might be at least two alternative biochemical pathways to produce sex appeal.

This method is particularly simple and allows a mass screening of sex-appealless mutant candidates. Using the same progeny, one may also investigate male mutants which would maintain female-like sex appeal beyond their usual immature period or ones which would court the wild-type male testers.

References: Hotta, Y. and S. Benzer 1972, *Nature* 240:527; Jallon, J.-M. and Y. Hotta 1979, *Behav. Genetics* (in press); \*Venard, R. and J.-M. Jallon 1979, submitted to *Experientia*.

Jha, A.P., B.N. Pandey and D.N. Mishra. Mithila University, Darbhanga, Bihar, India. Substrate specificities of alcohol dehydrogenase in *Drosophila*.

Alcohol dehydrogenase isoenzymes have been studied qualitatively (Ursprung and Leone, 1965; Jacobson et al., 1970) and quantitatively (Sofer and Ursprung, 1968; Ward, 1974) irrespectively of different substrates in *D. melanogaster*. Singh (1976) studied substrate speci-

ficities in *D. pseudoobscura*. Here we report on the substrate specificity in relation to developmental changes in *D. ananassae*, *D. malerkotliana* and *D. bipectinata*.

ADH activity was recognized by reduced tetrazolium deposition on 5% polyacrylamide gel. We used ten substrates in our experiment. In *D. ananassae*, larvae show activity with all ten substrates used in the experiment, pupae with only seven substrates and adults with nine substrates. Third instar larvae of *D. malerkotliana* and *D. bipectinata* exhibit activity with all ten substrates. Late pupae of *D. malerkotliana* reveal activity with all substrates, and those of *D. bipectinata* with only six. Adults of both species exhibit activity with all ten substrates. Differences in reactivity with substrates indicate that ADH isoenzymes must have some different physiological functions which are stage-specific.