three methods hitherto unused for phenol: (1) male third-instar larvae and adults of both sexes were subjected to a constant flow of phenol vapors for 24 hours; (2) different concentrations of phenol (0.20%, 0.25%, and 0.50%) in Holtfreter's saline solution were injected into third-instar male larvae, and 0.50% into female larvae, using a semi-micropipette; and (3) mature sperm were treated with phenol (0.01, 0.1, 1.0 and 2.0%) in Holtfreter's solution by the vaginal-douche method of Herskowitz. Control and experimental series were tested for sex-linked recessive lethals by the Muller-5 method. Rate of lethal production in experiments was in no case significantly different from that in the controls. The reason for the failure of in vivo treatment is postulated to be phenol detoxication in the fly and inability of the phenol to reach the germ plasm during the critical physiological period.

Miller, D. D. Mating behavior in D. athabasca and D. narragansett.

Observations of mating behavior in D. athabasca and D. narragansett are in progress, employing New York and New Jersey strains of athabasca (kindly supplied by Drs. E. Mayr, C. Pittendrigh, and B. Wallace) and a New Jersey strain of narragansett (furnished by Dr. C. Pittendrigh). A number of differences between the mating behaviors of these species have been observed, both with respect to each other and with regard to the similar species D. affinis and D. algonquin (Miller, 1950). D. athabasca males were found to be different from males of the other three species in regularly extending and vibrating one wing rather than both during courtship. A distinctive courtship movement of D. narragansett males was rapid opening and closing of the wings while approaching and circling about the females. The following table presents data on copulation times in the four affinis subgroup species affinis, algonquin, athabasca, and narragansett.

Temp.	affinis	algonquin	athabasca	narragansett
27° C			1'13", 1'26", 1'12", 1'23"	
26			1'25"	
25				10'59", 14'32"
24	58", 1'10", 1'13", 55", 1'1", 1'26"	5'35", 4'50", 7'31"	1'40"	
23	1'24", 1'3", 1'29", 1'24", 1'22"	4'37", 5'42"	1'48", 1'42", 1'27", 1'15", 1'12", 1'23", 1'25"	17'42", 20'52"

A few interspecific mixtures of males and females have been observed. Attempted (but not successful) copulations have been observed in both reciprocal combinations of the species pairs algonquin x athabasca and athabasca x narragansett.

Mittler, S. Variation of the penetrance of tu^{50j} when reared on yeasts that do not require vitamins or amino acids.

A highly inbred stock of D. melanogaster containing tu^{50j} was raised on a minimal medium consisting of glucose, $(NH_4)_2 SO_4$, and several trace elements, inoculated with yeasts that were able to live in absence of vitamins or amino acids. Hence, the flies obtained practically all their nourishment from the yeast and not from the medium. In research work involv-

ing penetrance and expressivity, utmost attention is usually given to temperature, and the nutritional aspect is almost always ignored. The following yeasts were used and are presented in a series decreasing in the ability to aid in the formation of tumors: Hansenula anomala, Pichia membranaefaciens, Candida sorbosa, Nadsonia fulvescens, Debaromyces globosus, Hansenula saturnus, Torulopsis utilis, Rhodotoryla gracilis, R. glutinis, and Geotrichium. Penetrance was less when the above yeasts were compared to Saccharomyces cerevisiae (Baker's yeast) on cornmeal-molasses medium. D. melanogaster can live exclusively on a nonfermenter yeast, Pichia membranefaciens.

Moriwaki, D., Okada, T., Ohba, S., and Kurokawa, H. Drosophila species belonging to the "obscura" group found in Japan.

In the summer of 1951, we were able to collect about 800 flies (females about 160), belonging to the "obscura" group of Drosophila, at several localities in Hokkaido (Akkeshi and five others) and one locality in the northern district of Honshu (Mt. Hakkoda). Although it still remains undecided whether these flies form one species or more, they are believed to belong to the "obscura" rather than to the "affinis" subgroup.

Having compared them with ten species of the "obscura" subgroup, namely pseudoobscura, persimilis, miranda, obscura, subobscura, obscuroides, tristis, bifasciata, alpina, and ambigua, mostly according to descriptions seen in the literature, we found that the several characteristics, such as color of mesonotum, male sex-combs, male genitalia, and karyotype, of this species, if it is one, were mostly similar to the descriptions of D. obscura Fallen.

On the other hand, the "obscura" species of Sweeden described by Fallen (1823) may be identified as "subsbscura" as proposed by Buzzati-Traverso (1949) on the evidence that D. subobscura is numerically prevalent at Esperöd (Sweeden) and has the wider geographical distribution in continental and insular Europe among species of the "obscura" group. The "obscura" species of Moscow described by Frolova & Astaurov (1930) has a karyotype of either "A" (♀: V-shape 4, Dot 1) or "B" (♀: V-shape 3, Rod 2, Dot 1), either of which differs from the karyotype of D. subobscura showing Rod 5 and Dot 1. Then the Swedish obscura, provided that it should be considered as being subobscura, seems to be different from Moscow obscura. Moreover, the karyotype of the present species in Japan coincides with the "A" type, one of the two types of the Moscow obscura.

At any rate, D. obscura is an uncertain species, as pointed out by Buzzati-Traverso in DIS-23 ("What is Drosophila obscura?"), and the identification is very difficult. But it is desirable to decide early to which species the name "obscura" should be given, in order to establish the synonymization.

Mossige, Jeanne Two new jaunty mutations.

This laboratory has had one stock containing j, namely, b j pr cn. On Oct. 18, 1949, one sv^2 male was found in sv^2 stock with curled wings. This proved to be an allele of j. On May 5, 1950, several sc cv v f flies in sc cv v f stock were also found to have curly wings and these too were j. The occurrence of two new spontaneous j mutations in the same laboratory within such a short space of time seems remarkable, as only two alleles have been reported previously. Contamination would seem to be impossible as the stocks where the mutations were found showed no irregularities and if contamination had come from b j pr cn then the other markers should also have been found. Moreover the first mutation has been kept in combination with sv^2, which again should have been found in