To test the second assumption and, also, the question of whether a positive correlation between the morphogenic and genetic properties in potential and obvious mutagens/carcinogens exists, comparative studies were carried out on the induction of eye DAB-type morphosis, reversions, and mitotic recombination by DAB (obvious mutagen and potential carcinogen), DDDTDP (potential mutagen/carcinogen, Alexandrov 1982), MMS and EMS (obvious mutagens/carcinogens) in cells of developing eye discs of w^{66g}/w^{66g} or w^{66g}/w^{co} females and w^{66g}/Y or w^{co}/Y males. w^{66g} has been proved to be a point mutation located on the right end of a genetic map of the locus in question.

Aqueous solutions of agents tested (see Table 1 for concentrations) were supplemented to media with mutant first-instar larvae. After eclosion, the eyes of imagoes were scored for the presence either of colored single spots (morphosis of DAB type and reversions of "sectoral" or "salt-and-pepper" types in all mutants studied) or characteristic "twin" spots (somatic recombination in w^{66g}/w^{co} females only) under a dissection microscope (25X).

The results of experiments performed are presented in Table 1, and merit the following conclusions. First, no eye spots were ever recovered in the DDDTDP series, or in the controls. Second, as had been observed earlier, DAB produces a characteristic eye morphosis in colorless w^{66g} mutants but not in colored w^{66g}/w^{co} females or w^{co}/Y males. It is also important that DAB is inefficient in producing mitotic recombination or other genetic changes (namely, deletions or point mutations at the w^{co} locus) in cells of the eye anlage. Therefore, a genome of Drosophila somatic cells at any rate studied appear to be highly resistant to the genetic action of DAB. Third, no somatic reversions $w \rightarrow w^{+}$ with the "sectoral" or "salt-and-pepper" phenotype in EMS- or MMS-treated flies were found, although in the germ cells EMS, for example, has been reported to efficiently induce reversions of some white alleles (Banerjee et al. 1978). Further, both mutagens/carcinogens are active inductors of DAB-type eye mosaicism in all w mutants studied. The marked activity of these agents in inducing eye morphosis correlates well with their recombinagenic ("twin" spots in w^{66g}/w^{co} females) and mutagenic (single "sectoral" spots in w^{66g}/w^{co} females and w^{co}/Y males) properties. Therefore, if the correlation in question is intrinsic to other mutagens/carcinogens, the test on induction of DAB-type eye spots in certain w mutants of D. melanogaster may turn out to be a rapid and economical test to detect potential carcinogenic agents.

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References: Alexandrov, I.D. 1982, DIS 58:10-12; Banerjee, J. et al. 1978, Mutation Research 50:309-315; Becker, H.J. 1966, Current Topics in Developm. Biol. Vol. 1, NY-London, Acad. Press, 155-171; Stern, C. 1969, Genetics 62:573-581.

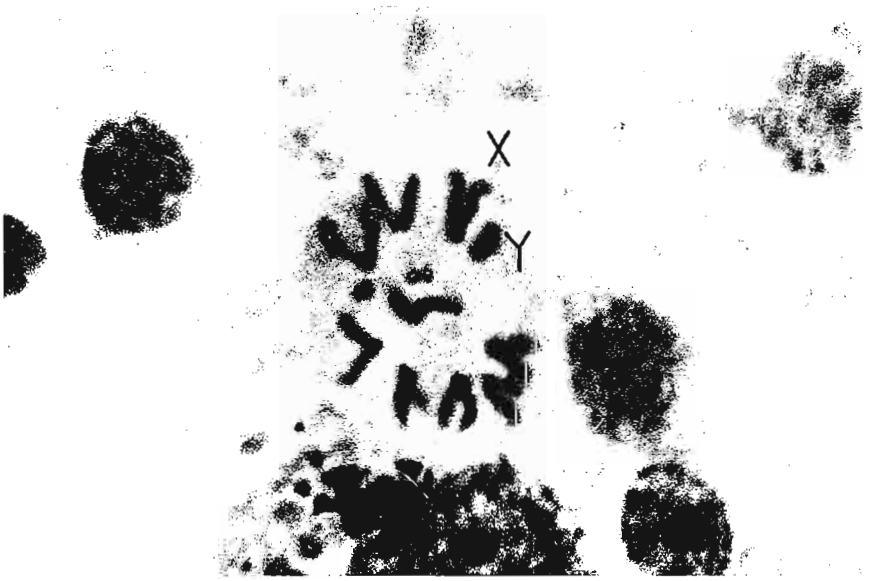

Fig. 1. Karyotype of male D. circumdata

Clyde, M. and S. Hasnah. Universiti Kebangsaan Malaysia, Kuala Lumpur, Malaysia. The chromosomes of Drosophila circumdata Duda.

D. circumdata (Duda 1926) is a member of the quadrilineata subgroup of the immigrans group of species (Wilson et al. 1969). Both sexes possess dark longitudinal stripes on the frons and thorax and only two rows of achrostichal hairs. During a collecting trip to Templer Park just outside Kuala Lumpur in June 1982, numerous male and female adult flies were observed resting on fallen leaves and feeding on rotting fruit of Citrus

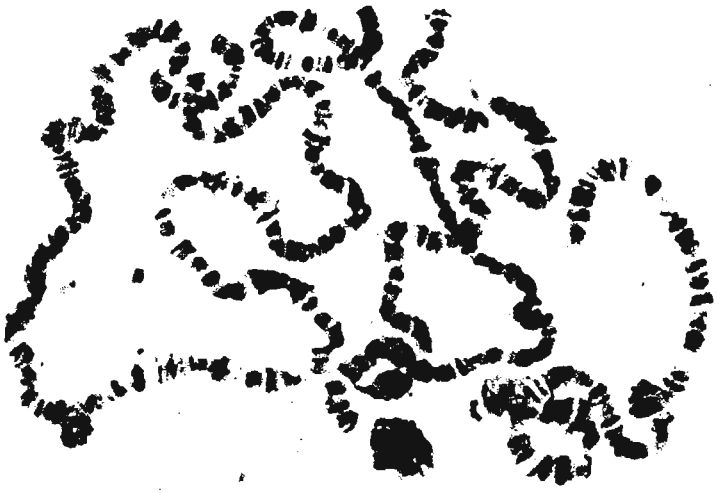

Fig. 2. Salivary gland chromosomes of D. circumdata.

aurantica and Averhoa carambola at a picnic area beside a waterfall. A total of 40 isolines were established in the laboratory from further collections in August, November and December 1982. The flies were caught by the sweeping method, in all cases around mid-morning. Cultures were raised on cornmeal-agar medium supplemented with live yeast. Chromosome studies were carried out on the next 1-3 generations.

Larval salivary gland chromosomes and metaphase chromosomes prepared from larval brain tissue were stained with aceto-orcein. D. circumdata has a chromosome number of 2n = 12. The metaphase karyotype consists of 5 pairs of rods and one pair of dots. The Y chromosome is rod-shaped and approximately half as long as the X chromosome (Fig. 1). The polytene chromosome configuration comprises 5 long arms and one very short arm (Fig. 2). No variation was detected, either in the karyotype or in the salivary chromosomes analyzed for heterozygous inversions.

References: Duda, O. 1926, Suppl. Ent. Berlin 14:42-116; Wilson, F.D., M.R. Wheeler, M. Harget and M. Kambysellis 1969, Univ. Texas Publ. 6918:209-253.

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Pulse song during courtship breaks by ebony mutants of D. melanogaster.

The courtship of ebony mutants of D. melanogaster differs from the wild type in a number of ways (Crossley and Zuill 1970; Kyriacou 1981). One difference is that during breaks in courtship, i.e., when the male is not oriented to the female, ebony males run in a zigzag path opening and closing their wings as they run (wing flicking). Rapid locomotion and the form of wing movement distinguish wing flicking from inappropriate vibration as defined by Connolly, Burnett and Sewell (1969).

In assessing the stimulating quality of male courtship, it is customary to ignore behavior during a courtship break. This behavior should not be disregarded if it includes auditory stimulation. The purpose of this study is to compare the acoustic output from vibration and from wing flicking in ebony males.

Seven pairs of 3-4 day old ebony flies were observed singly in observation cells (23 mm diameter, 7 mm deep). Auditory and visual components of behavior were recorded on videotape (Crossley and McDonald 1980). Sounds were traced on light-sensitive paper, using a Visilight oscillograph, and measured manually. Wing position during vibration and wing flicking was compared by viewing single frames of the video-record at 1/50s intervals.

	Mean i.p.i.(msec)	S.E.	N
Vibration pulse song	45.4	2.28	19
Wing flicking pulse song	42.3	1.01	65
($t = 1.39$, $df = 82$, $p > 0.05$)			

The acoustic output resulting from wing flicking consists of a series of pulses similar to pulse song produced by vibration. There is no significant differ-