ence between mean i.p.i. of wing flicking and vibration pulse song.

Vibration, in addition to pulse song, produces sine song. Wing flicking differs from vibration in this respect because sine song is absent. Inappropriate vibration, which occurs when ebony males orient to objects such as the stopper closing the cell, consists of pulse and sine song.

The form of wing movement also differs. During vibration and inapproriate vibration one wing is extended to 90°. Wing flicking consists of spreading both wings, one more than the other. Another difference concerns the female. Males wing-flick having lost contact with the female. They make quick turns from left to right as they run, as if they are searching for the female. During vibration the male follows or stands facing the female. Male behavior during inappropriate vibration is as if the female is present. This suggests that orientation to a female is necessary for a male to sing sine song but not pulse song. Movement associated with wing flicking is unlikely to inhibit males from singing sine song, because males sing both sine and pulse when following females.

Pulse song emitted during courtship breaks may influence female receptivity in all flies showing wing flicking, e.g., non-phototactic mutants such as tan, and wild-type mating in darkness. The absence of sine song from breaks may reflect differences in function between pulse and sine song. Experiments to investigate this further are in progress in our laboratory.

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Dhingra, G. and N. K. Vijayakumar.
Haryana Agricultural University, Hissar, India. Non-mutagenic effects of Malathion, an organophosphorous insecticide, on D. melanogaster.

A tremendous increase in the use of pesticides has occurred to save crop plants from huge losses due to various forms of pests. An unwarranted danger associated with the extensive use of pesticides is that they may be detrimental to the non-target species, especially mankind, with respect to their immediate toxic and long-term genetic effects. Taking this into consideration, Malathion, a widely used organophosphorous insecticide, was tested for mutagenicity using D. melanogaster as the test system.

Oregon-k and Muller-5 strains of D. melanogaster formed the materials for the present study. Malathion was dissolved in acetone and fed to the flies at concentrations of 2.00 and 1.00 ppm. The insecticide was mixed in the cornmeal-yeast-agar medium and the flies were exposed to it throughout their developmental stages, from eggs to adults. The dominant lethal and sex-linked recessive lethal tests were carried out. The procedure followed for scoring is described in detail by Wurgler et al. (1977). In the present experiments, three to four day old treated males were used to test for the induction of dominant and sex-linked recessive lethals. The tables incorporate data on the frequencies of dominant and sex-linked recessive lethals in experimental

Table 1.

Concentration	No. of eggs tested	No. of unhatched eggs	Percent lethality ± standard error
2.00 ppm	1158	295	25.47 ± 0.05
1.00 ppm	2712	948	34.96 ± 14.28
Experimental control Acetone*	1337	381	28.50 ± 4.81
Control	903	213	23.59 ± 0.43

Table 2.

Concentration	No. of chromosomes tested	No. of lethals produced	Percent lethality ± standard error
2.00 ppm	777	4	0.515 ± 0.030
1.00 ppm	524	2	0.380 ± 0.160
Experimental control Acetone*	747	6	0.800 ± 0.130
Control	581	2	0.340 ± 0.280

*Acetone up to 5 ppm concentration was found to induce no dominant and/or sex-linked recessive lethal mutations.

(acetone at 5.00 ppm concentration) and normal controls as well as in the chemically treated series.

When these data were statistically tested, by analysis of variance, it was found that these concentrations of Malathion were non-mutagenic to D. melanogaster. For the data on sex-linked recessive lethals, the 2x2 contingency test (Ehrenberg 1977) gave the same results. Consistent with this non-mutagenic effect of the insecticide, Mohn (1973) reported that Malathion did not induce mutations in E. coli (for 5-methyl tryptophan resistance) and Huang (1975) reported that it did not induce chromosomal aberrations in human hematopoeitic cell lines, though it inhibited their growth. Murthy (1979) reported non-induction of gene conversion in yeast and Degraeve et al. (1980) reported that Malathion neither induced forward mutations in yeast nor dominant lethals in mice. Contrarily, Wild (1975) reported chromosome breaks in humans who had had acute intoxication of this chemical; Sylianco (1978) and Chen et al. (1981) reported that Malathion induced micronuclei in mice and sister chromatid exchanges and cell cycle delay in chinese hamster cultured cells, respectively. Shiau et al. (1980) have also reported an increase in the induction of mutations in Bacillus subtilis and Salmonella typhimurium when they were treated with Malathion with 59 fraction.

In view of these highly contradictory results, more convincing investigations are needed to know the exact genotoxic potential of Malathion though it has been found to be non-mutagenic in D. melanogaster at the concentrations used.

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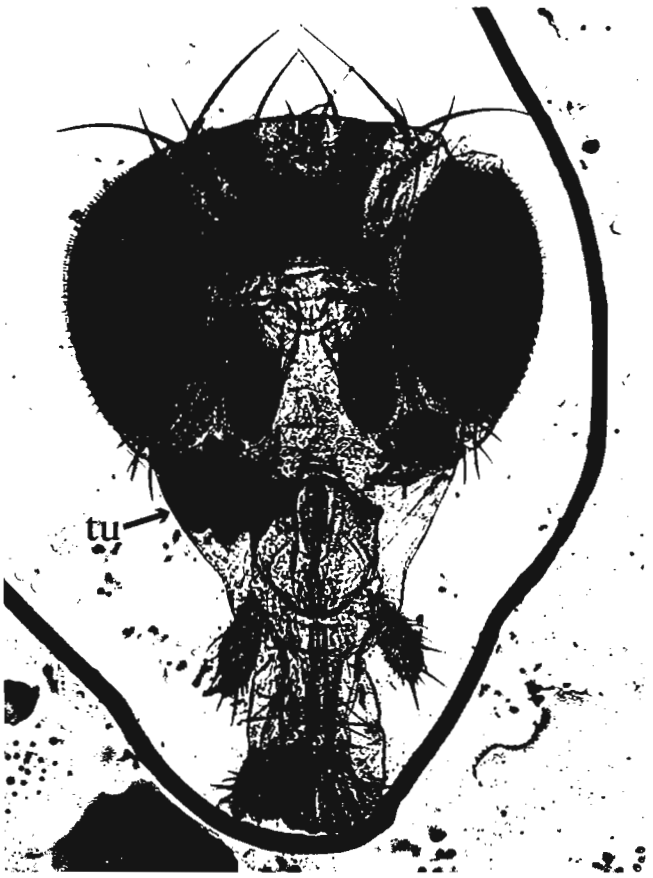

Di Pasquale Paladino-Pasqua Cavolina, A.
Universiti da Palermo, Italy. A new melanotic tumor mutant, tu-pb, of Drosophila melanogaster showing unusual phenotypical manifestation.

A new melanotic tumor mutant, tu-pb, was discovered in a wild stock (S. Flavia) of Drosophila melanogaster.

The phenotype of tumorous tu-pb flies differes from that of other melanotic tumor stocks described so far. In fact, while melanotic tumors are usually visible as black masses free-floating in the abdomen, in tu-pb internal black masses are exclusively located on sides of the proboscis's base (Fig. 1); they are variable in number and size and may interest both or only one side; rarely larger tumors invade parts of the head.

The dissection of adults revels often melanotic masses bound the lateral-pharyngeal muscle, without having any structural relation with it (Fig. 2).

Fig. 1. Head of a tumorous tu-pb fly cleared in a fructose solution: tumors are visible as black masses on both sides of proboscis.