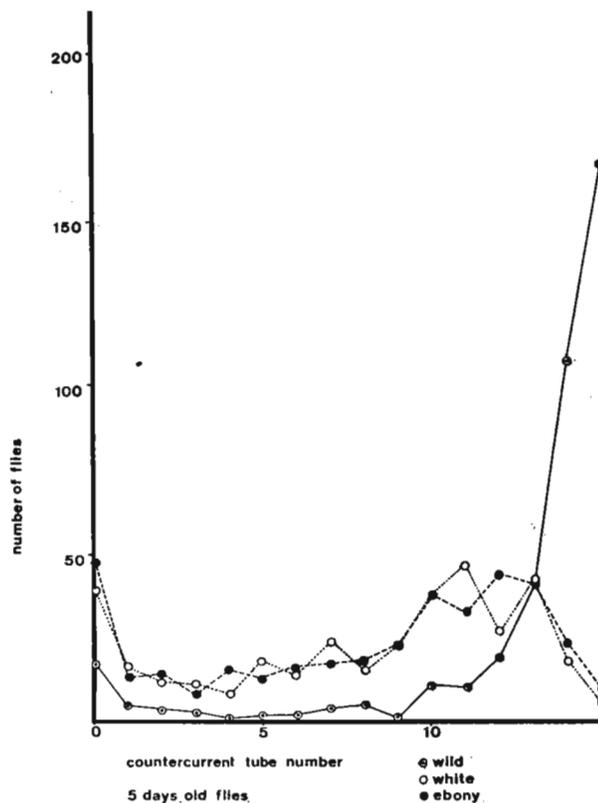
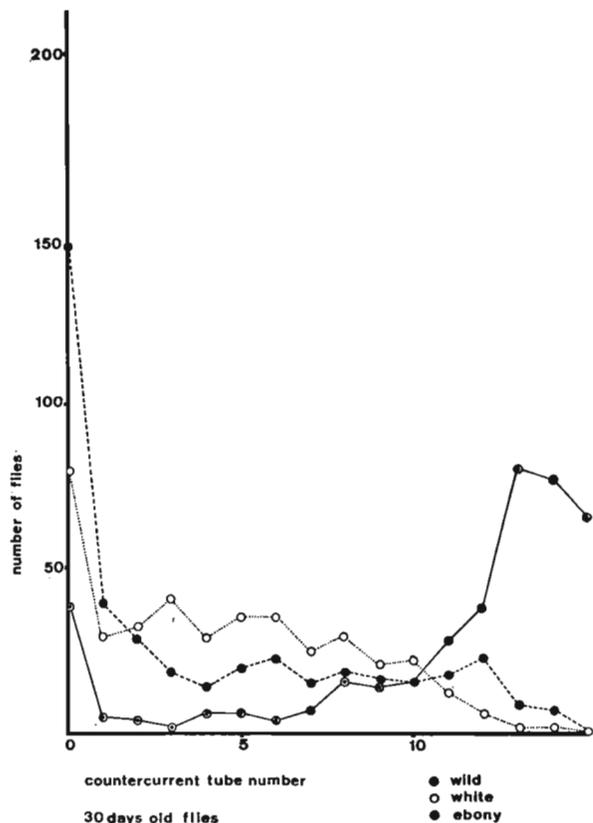


Elens, A. and J.M. Wattiaux. Facultés Universitaires N.D. de la Paix, Namur, Belgium. Age and phototactic reactions in *D. melanogaster*.

The "countercurrent distribution" method has been suggested by S. Benzer (1967) to fractionate populations of *Drosophila* flies according to their phototactic response. The preliminary results here reported concern wild (Canton S), ebony, and white strains of *D. melanogaster*,

tested according to Benzer.

The flies were grown on cornmeal medium at 25°C and 70% R.H. (10 hrs light per day). Testing was done at 25°C and 70% R.H., in a dark room. The test tubes and light source were



as in Benzer's experiments. Approximately 60 flies of each of the three strains, and of same sex and age, were tested together.

The data here presented result from 4 repetitions (the data concerning both sexes being cumulated).

As shown in Fig. 1 and Fig. 2 the differences between strains are much more marked for the older flies than for the younger ones.

Of course, such behavioural differences can be founded not especially on phototactic but on locomotor characteristics. Other tests are on hand concerning the influence of ageing on the locomotor activity (for flies in a group as well as for isolated individuals) of the same strains.

Reference: Benzer, S., 1967 Proc. Nat. Acad. Sci. 58: 1112-1119.

Cetl, I. J.E. Purkyně University, Brno, Czechoslovakia. The relation between genotypes in a viability test.

Using the Cy/L strain, relative viability of individuals homozygous for 30 independent second chromosomes isolated per 10 from three different natural populations (H, B and M) originating from Moravia was tested by crosses of Cy/+ females with L/+ males. In all 30 chromosome subpopulations studied, the frequencies

of Cy/+ females with L/+ males. In all 30 chromosome subpopulations studied, the frequencies

of Cy/L, Cy/+, L/+ and +/+ genotypes differed widely and in various manners from the expected 1:1:1:1 ratio. In spite of this diversity, the individual genotypes behaved in some respects similarly, e.g., the highest mean relative viability was ever found in the Cy/+ class. There was, thus, a general tendency of studied natural second chromosomes to be heterotic in viability at least when they were combined with the Cy chromosome.

Table 1. Correlation coefficients (r) of relative viability calculated between the relative viability of +/+ homozygotes and the cumulated relative viability of heterozygotes Cy/+ and L/+ in population samples H, B and M.

Population sample	r ± s	P
H	-0.9392 ± 0.1212	<0.01
B	-0.9482 ± 0.1153	<0.01
M	-0.9653 ± 0.0922	<0.01

If correlations were studied between the relative viability (expressed as chromosome sub-population means) of +/+ homozygotes and corresponding cumulated relative viability of both heterozygotes, Cy/+ and L/+, high negative values of correlation coefficients significantly differing from zero were found (Table 1). This finding was unexpected. The theorem resulting from classical studies in maize (Jenkins, 1929; Hayes and Johnson, 1939) that the "performance" of genotypes when combined with a "tester" genotype is positively correlated with the "performance" of corresponding "pure" genotypes was not proved here. Evidently, more complicated relations take place if "pure" and "combined" genotypes develop in close mutual contacts as it is realized in a viability test. Wallace (1956) suggested that in these tests specific interactions may exist between larvae of different genotypes during their development and that alterations in the viability of one class may interfere with the relative viabilities of other classes. It is not excluded that the mentioned negative correlation was caused by similar "specific interactions", of course, of competitive character which can substantially change "ideal" ratios determined by "net" viabilities. For this reason, the values of relative viability estimated in a viability test have to be taken as resultants of "net" viability and of the above interactions.

References: 1. Hayes, H.K. and I.J. Johnson, 1939 J. Am. Soc. Agron. 31: 710-724; 2. Jenkins, M.T., 1929 J. Agr. Res. 39: 677-721; 3. Wallace, B., 1956 J. Genet. 54: 280-293.

Kuroda, Y. National Institute of Genetics, Misima, Japan. Effects of various sera and insect blood on the growth of embryonic tissues from *D. melanogaster* in culture.

To obtain the luxuriant growth in culture of embryonic tissues from the Oregon strain of *D. melanogaster*, the author has been searching for the supplementation of some macromolecular substances from various natural sources.

Dechorionated and surface-sterilized eggs at the time of gastrulation (4 hours after egg laying) were torn into small fragments in balanced salt solution. These fragments were explanted on the glass surface of the culture bottles, incubated in salt solution for 60 minutes, and cultured in the chemically defined medium K-6' (1,2).

Supplementation to medium K-6' of sera from various sources and at various concentrations were examined to obtain better growth of cells under these conditions employed. The results are shown in Table 1.

Table 1. Effects of concentrations of serum on the growth of *Drosophila* embryonic tissues in culture.

Serum	No. of explants tested	No. of explants in which growth was observed	Percent growth
Calf serum, 3%	16	2	13
5%	19	7	37
10%	34	28	82
20%	5	1	20
Fetal calf serum, 10%	33	2	6