Table 1. Parent age and sex ratio of the progenies.

No. of crosses	Parents	Progenies N	%males	X^2	p
A 54	Young males vs. young females	2171	53.80	12.54	< .01
B 26	Young males vs. old females	1284	47.43	3.39	> .05
C 22	Old males vs. young females	2261	47.50	5.65	< .05
D 40	Old males vs. old females	2945	47.40	7.95	< .01

Table 1 shows that there is a significant excess of male progenies (53.8 ± 1.1%) from the crosses of young males and young females (X^2=12.54; p < 0.01). Among the crosses where males or females, or both, were aged, an excess of female progenies has been found (47.4 ± 0.6%).

The results obtained are showing that parental aging is significantly influencing the sex ratio of their progenies, leading to a significant decrease of male progenies.

Acknowledgement: The help of Prof. Dr. Dragoslav Marinkovic is kindly acknowledged.

References: Szilard,L. 1959, Proc. U.S. Nat. Acad. Sci. 45:30-45.

Nájera, C. University of Valencia, Spain.

Proportion of **D.melanogaster-D.simulans** in natural populations.

Flies from the sibling species **D.melanogaster** and **D.simulans** were captured in three different niches: a cellar in Requena (Valencia), a vineyard at 4 Kms from the cellar, and a pine-wood in La Canada (Valencia) at 70 Kms from the former two, at two different times of the year: sping and autumn.

Males were identified by their genitalia (Sturtevant 1919) while females were identified by the genital differences of their male progeny.

In the collections made inside the cellar at the two times of the year, not one individual of **D.simulans**, neither male nor female, was found. The population was exclusively of **D.melanogaster**. So the cellar provides this last species a system largely free of interactions with its sibling species.

The number of collected flies was 350 females (61.18%) and 187 males (34.82%) in the autumn population and 89 females (54.60%) and 74 males (45.40%) in the spring one. There is therefore a higher number of individuals in autumn (time of the vintage) although the cellar had a more suitable temperature in spring.

As regards the sex ratio, it is always less than one, indicating an excess of females. This excess was particularly marked in autumn (X^2=48.80; P<0.01), since in spring the sex ratio did not differ significantly from unity (X^2=1.2 ns).

In the vineyard and pine-wood populations there is a higher proportion of **D.simulans** than **D.melanogaster**, principally in autumn.

Table 1 shows the number of males and females collected from each of the two sibling species in the four populations as well as the percentage for each sex and the total percentage of each species. The frequencies of inseminated fertile females is also indicated, since it is an important component of the population structure. The percentage of inseminated females of **D.melanogaster** was higher (90.46%) than that of **D.simulans** (78.65%).

With regard to the sex ratio there are significant differences in the autumn vineyard population (X^2=87.34; P<0.01), autumn pine-wood (X^2=8.42; P<0.01), spring vineyard (X^2=3.92; P<0.05), and spring pine-wood (X^2=7.38; P<0.01) for **D.simulans**. For **D.melanogaster**, there are significant differences in the autumn vineyard population (X^2=44.8; P<0.01) and spring vineyard (X^2=6.18; P<0.05), while the differences are not significant in the spring and autumn pine-wood populations (X^2=0.72, X^2=0.06).

Table 1. Number of collected males and females; percentage of inseminated fertile females; total percentage of each species.

	D.SIMULANS						**D.MELANOGASTER**					
	Males		Females		insem.	% **simu-**	Males		Females		insem.	**melano.**
	No.	%	No.	%	% fem.	**lans**	No.	%	No.	%	% fem.	%
Autumn Vineyard	974	61.80	602	38.20	78.05	88.24	154	73.33	56	26.67	91.07	11.76
Autumn Pine-Wood	391	55.54	313	44.46	81.02	86.27	61	54.46	51	45.54	88.23	13.73
Spring Vineyard	61	41.50	86	58.50	79.27	53.65	49	38.58	78	61.42	89.74	46.35
Spirng Pine-Wood	191	43.41	249	56.59	76.27	75.86	68	48.57	72	51.43	93.06	24.14

In both species there is a disequilibrium in favour of males in autumn, both in the vineyard and in the pine-wood, while in spring the disequilibrium is in the opposite sense; differences are more acute in **D.simulans.**

Reference: Sturtevant, A.H. 1919, Psyche 26:153-155.

Nájera, C. University of Valencia, Spain. Study of eye colour mutant variability in natural populations of **D.melanogaster**. II. Vineyard.

51 and 70 females from two collections captured in a vineyard 4 Kms from the cellar of the preceding work (Ná jera & Mensua 1985, this issue, I. Cellar), at the same times of the year (autumn and spring), were analyzed. The purpose was the same: to search for eye colour mutations by inbreeding through F_1 pair matings from the females collected.

The number of females which were heterozygotic for eye colour mutations was 13 (25.49%) in autumn and 23 (32.85%) in spring. The number of mutations per fly was 0.25 and 0.39. These percentages seem to differ, being higher in spring than in autumn. When compared by means of a t test, no significant differences either with regaard to the heterozygotic females (t = -0.88 ns) or the number of mutations (t = -1.53 ns) can be observed. The distribution of mutations was:

	Autumn	Spring
females with 1 mutation	13	19
females with 2 mutations	0	4

Both fit a Poisson distribution (X^2=0.194 ns, and X^2=0.024 ns).

The percentage of heterozygotic loci for eye colour mutants was 9.8 (autumn population) and 16.07 (spring population).

The overall frequency of allelism was 7.1±4.9 (2/28) for the autumn population, 16.3±2.6 (30/184) for the spring population, and 11.5±2.6 (18/156) interpopulational. Alleles are distributed at random in both populations.

Compared with the cellar populations, the percentage of mutations in heterozygosis was rather smaller in the vineyard. As in the cellar, the frequency of allelism was greater in spring than in autumn, the interpopulational frequency being intermediate.

Nájera,C. and M.C. González-Bosch. University of Valencia, Spain. The maintenance of variability in artificial populations. III. Frequency of ADH alleles.

In a previous work the behaviour of four eye colour **D.melanogaster** mutants from a cellar was studied, compared with their wild allele from the same cellar, in artificial populations, and comparing two culture mediums, one supplemented with alcohol at 10% and the other without alcohol. The four mutants (sepia, safranin, cardinal and a multichromosomal strain which segregated cardinal and cinnabar mutants) attained different gene frequencies at equilibrium: 0.32, 0.27, 0.15 and 0.08 approximately (Najera & Mensua 1983).

In the eight populations there was a higher frequency of heterozygotes than could be expected (Najera 1984), which cannot be explained by the maintenance of inversions in heterozygosis (Najera & de Frutos 1984).

A study of the ADH frequencies was made in the artificial populations as well as in the five strains which gave rise to these populations. Table 1 shows the frequencies for the five strains. It can be observed that all the strains are homozygous: the wild strain and three of the four mutants (sepia, safranin and cardinal) for the F allele and the multichromosomal for the S.

As regards the populations, all the strains maintained in the standard culture medium appeared with polymorphism while the strains maintained in 10% ethanol appeared homozygous for the F allele (Table 2).

Although the initial allelic constitutions of the strains which give origin to the populations is not known, it seems probably that the strains were initially polymorphic, at least the wild strain which is the origin of all the populations, and that in the laboratory they changed to monomorphic through the loss of one of the two alleles.

It is noticeable that in all the populations maintained in the standard culture medium there is polymorphism, while in all the populations maintained with ethanol the F allele has been fixed.

It seems probable that in the populations supplemented with ethanol medium there is a directional selection against the S allele.